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Pat.) Patent News. (Cor.) Correspondence. (Soc.) Societies' Meetings. (Rev.) Review or Trade Notice. (Ans.) Answers.  
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## SUMMARY.

Some of the anomalies in plate speed numbers are the subject of a note on page 1.

A non-shift printing-frame is the only patent of the week. (P. 7.)

Drying marks in a negative, according to a recent writer, may be removed by bleaching and re-developing. (P. 6.)

Professor Namias has modified the permanganate reducer, which under the new formula may be made up as a dry powder. (P. 2.)

The views of a Californian woman photographer on business matters of the reception-room are printed on Page 4.

Mercury-vapour and arc lamps, pinhole exposures, and the telegraphic transmission of photographs occupy our correspondence columns this week. (P. 13.)

A trick which could easily be played on a photographer of public events is mentioned on Page 2 in reference to a recent instance.

A sharp reproof to a young Jewess, summoned for a canvassing fraud, was administered in the Clerkenwell Police Court last week. (P. 11.)

Some views of members of the photographic trade on the annual index to the "B.J." appear on Page 5.

## "COLOUR-PHOTOGRAPHY" SUPPLEMENT.

Mr. F. Martin Duncan gives some hints from his pioneer experience in the use of the Autochrome plate in natural science. (P. 1.)

M. Gravier explains the device used by him for daylight development of the Autochrome plate by the method in which only three solutions are used. (P. 7.)

We give particulars of the apparatus used by Dr. H. Lehmann in the Lippmann process. (P. 2.)

M. Cheron has further improved his apparatus for the prismatic dispersion process. A description of the new construction is given on Page 3.

An abstract translation of Baron von Hübl's recent paper on the Autochrome plate appears on Page 5.

An exhibition of Autochromes and three-colour prints remains open at the Polytechnic, Regent Street, until to-morrow (Saturday), 10 p.m. (P. 8.)

M. Lumière père has been fêted by journalistic and other admirers in America. (P. 8.)

## EX CATHEDRA.

**A Prosperous New Year.** Few occasions in the course of the year afford us quite the same pleasure as that which makes us the recipient of Christmas greetings from readers of the JOURNAL in all parts of the kingdom and in distant countries. We hope to be pardoned for expressing a sense of gratification at the fact that not a few of these seasonable greetings contain a word of thanks for some small service which we have been able to render the writers. To them and to all before whom these lines come we reply with all the good wishes of the season, and hope for them the prosperity which they would desire for themselves in 1908.

\* \* \* \* \*

**Milky Collodion.** An article in our last issue dealt with the enamelling of prints with collodion, and it may therefore be useful to some desirous of carrying out the process if we draw attention to a trouble frequently met with by those unfamiliar with collodion and its use. If the collodion is in perfect condition it should give an absolutely clear and transparent film upon a glass plate, but in the hands of those unaccustomed to it a milky or opalescent film is frequently produced. This is due to the presence of water which has found its way into the solution. The alcohol and ether, which are the solvents used in the preparation of collodion, greedily absorb water from a damp atmosphere, therefore the solution should be kept well stoppered and in a dry, but cool, place. Most frequently, however, the water is introduced by the use of a damp measure or bottle. When collodion is bought in small quantities from a photographic dealer it is always advisable to warn him that the bottle used must be rinsed out with spirit before it is filled, and the purchaser should be careful to take the same precaution himself if he has occasion to transfer the solution to any other vessel. Similar care must be taken when purchasing "thinning solution," or the alcohol and ether required for making it up, and, in the latter case, it is necessary to go to the expense of procuring absolute alcohol if one wishes to ensure a perfectly clear coating. For the simple purpose of enamelling prints a little milkiness may not be of much consequence, but it is of no benefit, and the collodion may be required for other purposes for which absolute clearness is essential.

\* \* \*

**Tables of Plate Speeds.** Some experimental work on which we have recently been engaged has again drawn attention to the unreliable character of some published tables of plate speeds. We were comparing effects produced on two plates, which we will call A and B, and our tests at first were conducted under the impression that the two plates were of equal speed, or



nearly so. Some tables that we consulted gave them as equal, while others classed A as slightly faster than B. The anomalous results we obtained proved, however, that something was seriously wrong, and a test showed that in spite of all the tables A was only half the speed of B. Curiosity led us to consult various tables of speeds, including some a year or more old and others that were quite recent. As is well known, some of these tables are only published once a year, while others are issued at very frequent intervals. It might be assumed that the latter must be more reliable, as they are more frequently revised, but our little research seemed to show quite a different state of affairs. In one of the frequently "revised" lists these two plates have retained the same speeds for two years past, A being described as faster than B, but in a set of yearly lists it is noticeable that B has been steadily rising in speed until it is now double the rapidity of two years ago. Evidently these yearly lists have been subject to revision while the others have not, which state of things can only lead to a lack of confidence in plate speeds in general. We notice that, in the case of sundry other plates, speeds have altered considerably in the last year according to some lists, while others show no variation at all. It stands to reason that the speeds, if reasonably correct, should not differ in this manner, therefore we suggest that those responsible for the compilation of these various lists would be well advised to overhaul them thoroughly and re-test the plates they refer to.

#### **The Permanganate Reducer.**

A note in "Eder's Jahrbuch" by Professor Namias draws attention to a modification in the permanganate reducer which may be of service, particularly in preparing the reducer in a dry state for solution at the time of use. Professor Namias dispenses with sulphuric acid, using instead ordinary alum, the acid character of which is apparently sufficient for the purpose. He adds one-fifth of one per cent. of potass. permanganate to a cold saturated solution of alum; in other words, the reducer contains about 1 grain of permanganate and about 50 grains of alum per fluid ounce. Thus compounded, it is found to work better than the sulphuric acid formula, as it keeps well and does not attack the gelatine film. The alum-permanganate solution stains the gelatine a deeper brown than the acidulated bath owing to the precipitation of manganese oxide; by the use of a 5 per cent. solution of sodium bisulphite this stain can be readily removed.

#### **Copyright Hardships.**

The difficulties which surround the law of copyright are sometimes brought home unpleasantly to the photographer, as witness a case which, in one form or another, is constantly being brought before us. Reference to a recent instance may save some of our readers from taking futile measures for the redress of an actual—but, unfortunately, not a legal—wrong. A photographer, at a good deal of trouble, obtained permission to photograph a football team of some importance. The players were grouped during an interval in the game at one corner of the ground, and while the favoured photographer was making his exposures a snapshot of the group was taken by the operator of a firm making a specialty of press photography. This snapshot, which was to all intents and purposes a facsimile of that taken by the photographer who had arranged the group, was reproduced in a sporting paper in preference to the other because it was submitted earlier. The photographer naturally feels that his rights in the arrangement of the players have been infringed, yet we can only assure him that he will be wise to stomach the trick played on him. If he is not he should be pre-

pared to fight the issue in the High Courts, for there is no case within our recollection which supports him in his alleged proprietorship of copyright in the arrangement of the group. What cases there are against him, and support the view that—in the legal sense—a group of footballers is to be classed with other "works of Nature," which it is the right of any person to represent, notwithstanding that there may be copyright in some representation of such scene or object. We are free to admit the argument that the photographer, as the person who superintends the arrangement of a portrait or group, is the author of the copyright, and that therefore his work is entitled to protection; but the point is one full of the nicest legal distinctions, and might travel from court to court before it was settled. We would recommend our friend in future to employ, in place of legal procedures, an able-bodied assistant to keep his competitors away.

**Cold Weather.** In a recent article on the effect of temperature in producing flat prints by the oil and bromoil processes, we drew attention to the necessity of preserving a constant temperature of about 65 deg. Fahr. if the latter process is to be worked successfully. In the course of our experiments on the effect of temperature we observed what appeared to be a curious fact, and is perhaps worth mention, seeing that it may be of some slight importance in the case of other photographic processes. When working in hot summer weather we frequently met with trouble due to the use of solutions at too high a temperature. For a short period during the last summer we were forced to work with solutions the temperature of which was rather above 70 deg. Fahr., and in many cases damage to the gelatine resulted. The gelatine dissolved away in the high-lights of the image, while the shadows were so softened that pigmentation produced reversed or negative images. During the recent cold weather we have, however, used upon the same papers solutions warmed to about 75 deg. Fahr. without meeting with any trace of reversal. In a few cases the high-lights showed signs of washing out, but the damage done was by no means comparable with that produced by slightly cooler solutions in the summer. We have, indeed, produced good results at a temperature of 80 deg. in the winter on emulsions that were practically destroyed at 70 deg. in the summer, though 65 deg. is the average working temperature that we recommend. These facts suggest that in cold weather the gelatine is somewhat more resistant than in summer, though it is not at all clear why it should be so. Whether similar conditions prevail in the case of development we do not know, and possibly this point might be worth testing.

**The Fineness of Grain in Negatives.** In our issue of December 13 we published a paper, read before the French Photographic Society by M. Monpillard, entitled "Experiments on the grain of silver images obtained in the wet collodion process." In it the author says that the size of the grains reduced in wet collodion negatives may be larger than those in some gelatine plates, yet the definition of fine lines in a wet collodion is invariably better than that obtained on a gelatine plate of moderate speed. This is pretty generally well known to those who make negatives for process work and other mechanical processes. M. Monpillard also points out that there is a considerable difference in the size of the grain according as to whether iron or pyrogallie acid is employed as the developer. He also alludes to different salts, used for iodising the collodion, having an influence on the size of the grains of the reduced silver. In conversation with a very old worker of the collodion process a few days ago, he told us that in the

middle or late "fifties," when micro-photographs (that is, minute photographs to be shown under the microscope) were exciting some interest, he was ambitious of producing one of the front page of the "Times" within the space of the tenth of an inch, so as to be readable under the microscope. He said he did not succeed, as the particles of reduced silver were too large to form the small letters, though the large capitals were readable. The collodion used was salted with iodide of potassium—no bromide—and the developer was pyrogallic acid. Our informant found that the condition of the bath had a very material influence on the size of the grain of the reduced silver—a point not alluded to in the paper of M. Monpillard. If the bath was quite neutral, or rather on the alkaline side, according to litmus paper, and in the best working order, the grain was exceedingly fine. The image, by transmitted light, was somewhat of a claret colour, and partook more of the appearance of a stain than a real deposit of metallic silver. With an acid bath the grain was larger, and if the acidity was increased the grain, up to a point, became still greater in size.

\* \* \*

#### Unique Photographs.

It is not often that the landscape photographer secures a result that can justly be described as unique. Given the same landscape, some other photographer may repeat his result at any time, provided some extraordinary cataclysm does not destroy the landscape, and even if such a catastrophe does occur the chances are that many have previously secured photographs of the scene. The San Francisco earthquake has, however, afforded an opportunity that is, we believe, without a parallel in photography. As a result of the earthquake a new island appeared in the neighbourhood of the Bogoslof Islands. For long the water about the island was so hot as to make the new land unapproachable, but at last a revenue schooner got near enough to photograph it. Still later, a party succeeded in landing, and secured a few more photographs. These are the first and the last photographs to be taken, for the island very soon afterwards disappeared.

\* \* \*

#### The Exchange of Photographs.

A most ambitious scheme is put forward in the current issue of the "Revue Internationale de Photographie," the photographic organ of the Institut Bibliographique et Photographique of Brussels. It is suggested (1) that a list should be made of existing collections of photographs, and (2) that a directory of photographers interested in the application of photography to some branch of pure or applied science should be compiled. Without knowing to whose initiative these promulgations are to be ascribed, it may be permissible for us to say that the scheme appears to be one of those things which appear highly desirable to one or two persons and are therefore thought by them as likely to be enthusiastically received by many other persons. The scheme may be admirable—we are not saying it is not—but we would prophesy that every atom of time or money spent on it will be thrown away. In the first place, a list of private collections of photographs can only be made at great expense and without prospect of a remunerative return. Secondly, photographers taking photographs illustrative of science of some sort or another do so as much for the pleasure of the work as for any object they may have in using the finished prints: very little use would be made, in our judgment, of an exchange system. And even supposing we could find a good word to say for the above ideas, we should wish to see the suggestions of a scheme described as "international" in its aims put forward in more lucid English than that of such sentences as: "To get quickly an appreciable result, it would be

sufficient to publish the questionnaire below mentioned, and to send the answers to the 'Institut International de Photographie,' which will class them, and will be able to give satisfaction to every demand."

#### PHOTOGRAPHY OF 1907.

If one were limited to two words in which to summarise the photographic character of the year which has just closed, these two words could only be colour and oil. There can be no doubt that the photographic event of the year, and one which will have an influence on the immediate future of photography, has been the introduction of the Lumière Autochrome plate, and the consequent indulgence on the part of the veriest tyro in the use of the camera in colour photography. In thus bringing colour photography within the reach of every one, the Lumière Brothers may congratulate themselves that they have applied a gentle and agreeable stimulant to any who, but for it, would have dropped the camera for some hobby with more spice of novelty in it. The fascination of colour has been sufficient to give fresh zest to the practice of the art, whilst the possibilities which the Autochrome and its sister processes hold out of colour prints on paper by an easy process, will mean that those who have once taken an interest in the new departure will not allow their attention to wander. Moreover, it is certain that the facility of obtaining a record—even a transparency on glass—in colour has induced still others to take up photography who would never have done so without that encouragement. Thus, altogether, there is every reason to think that colour photography has taken a place among the regular branches of the art of the camera which it did not occupy previously, successful as were the processes—such as the Sanger-Shepherd—which preceded the Autochrome and are now its contemporaries.

The oil process cannot be claimed for the past year, but has, nevertheless, during this period, realised the hopes which were expressed in regard to it on its first announcement by Mr. Rawlins in the pages of our contemporary, "The Amateur Photographer," now three years ago. The stimulus to investigate its possibilities in pictorial photography was undoubtedly applied in this country by the exhibition of the prints by M. Robert Demachy at the Royal Photographic Society in the early part of last year, a repetition of the incident of some six years ago, when the exhibition of the American School at Russell Square aroused the most diverse opinions, was despised and imitated by opposite factions, and has now been almost forgotten. We would not think that the labours of MM. Demachy and Püyo, in bringing the oil process to the front, will meet quite the same unkind fate which has attended the "movement" of Mr. Holland Day and his collaborators. Good technicians that they are, the French workers earn the respect even of those who may not see eye to eye with them in the choice of methods, and, what is more, they are no mystery men as to their processes, nor is some fluent jargon on art the whole of their qualification to be heard. Mr. Rawlins may plume himself not a little on the fact that he has divorced M. Demachy from gum-bichromate and brought the oil process to consort with his (M. Demachy's) skilled hand, good taste and pretty fancy in things pictorial. And the English workers, such as Dr. Evershed, Mr. Mummery, and Mr. Welborne Piper, who, for technical or pictorial reasons, have interested themselves in the process, are still another link in the chain which further strengthens the bond uniting us with our Gallic neighbours. Quite a small entente cordiale in its way.

In other respects it cannot be said that there is a great



deal to mark out 1907 as a year of photographic note. An exception is the combined carbon and bromide paper introduced by the Rotary Photographic Company, and affording very similar facilities to those permitted by Mr. Manly's Ozobrome process. In the way of apparatus the year has seen the widespread adoption of the reflex

camera by all classes of makers, whose various patterns of instruments total up to a goodly figure. If reports be true there are to be still further developments in the reflex as a universal instrument, and one new introduction which may be mentioned in this connection is a folding reflex brought on to the market by a Continental firm

## APPOINTMENTS AND ORDER-GETTING.

[That the American photographer is far fonder than is the British professional of meeting in conference for the discussion of business topics is a fact which is recognised by those who know both sides of the Atlantic. Hence one is not surprised to find in the American journals the papers read before the many photographic associations in the States composed wholly of professional photographers. Practical usefulness is usually the keynote of these contributions: it certainly is of the following paper by Miss E. F. Hannavan which we find reported in "Camera Craft" as having been delivered before the Photographers' Association of California. It deals with a theme on which too much thought cannot well be expended by the photographer.—Eds. "B.J."]

I SHALL not attempt to tell you anything new in regard to reception room methods; simply remind you of what I consider the few most important points to observe in meeting the patron. Before proceeding to the subject matter I wish to say just a few words concerning the appearance of the reception room and the dressing rooms, which in most studios are under the supervision of the lady receptionist. Keep them as orderly as possible each day, not some days. Do not leave prints scattered about, but return them to their places in folios which you should have systematically arranged. Have at hand a few choice prints to show any particularly appreciative patron, in a separate folio. Arrange greens or cut flowers about your studio when obtainable. I have found them to be a valuable asset, often opening the way to some interesting conversations. After sitters leave, re-arrange the dressing rooms.

### Types of Patron.

Not the least important part of the reception room equipment is the lady in attendance. She must be refined, enthusiastic and sympathetic; never mechanical. With her rests the success or failure of the business, assuming, of course, that good photography is the rule of the studio. Meeting the patron, as she does, so many times, it is very necessary she be philosophical in temperament and be able to approach advantageously the many varying characters, not all of whom are thoroughly agreeable, either. I will mention a few familiar types, and I am sure you will all recognise each and every one of them. One that is not altogether pleasant is the amateur. He informs you with a warning tone in his voice that he knows something about photography. Only yesterday I met such a one in our studio, one who was very amusing, and I believe you would have thought so, also, had you been present. He came in with no small amount of importance in his bearing. Following is the conversation:

"Can you take a group of three people in this studio and focus them properly? Understand me, get the correct focus on them." I knew at once he was an amateur.

"Yes, I think we can," I replied, and proceeded to show him several prints of groups of three and more. After scrutinising them closely he said:

"Yes, those are all in focus. The photographer must use a wide-range lens." After making a few further remarks, he drew from his wallet several 3 x 4 prints taken by himself, which he offered for inspection. They were everything but good.

Another type is the very plain young lady who brings in a picture cut from a newspaper or magazine and expresses a wish to be posed in the same manner. The pose is nearly always entirely inappropriate for her. The stout lady nearly always returns for a re-sitting. She knows she is stout, but thinks Mr. Photographer has made her look much stouter than she really is. Then there are the rush-order patrons. Compar-

tively speaking, they are in the minority. When you meet one I think it is the best policy to do your utmost to get his order ready for him on the date he specifies.

When a person enters the studio I presume at once he or she is interested in our photographs. After bidding the time of day, I nearly always open conversation with the remark, "You wish to look at some photographs?" The answer usually informs me as to who they are, and I proceed to show several specimens of photographs that I think would be appropriate; all this time getting at their idea by their remarks, and at the same time mentally diagnosing their financial condition.

### Tact in the Reception Room.

Patrons may be divided into two classes: those who care for low-toned artistic prints and those who prefer clear-cut pictures with a marble finish in human likeness. Unless asked, I never disclose a preference for fear of offending. Until they specify, I never show small sizes. Showing the larger prints, I nearly always take a frame of an exclusive design from a cabinet conveniently at hand and carefully arranged and lay it on the print, adding fifty per cent. to its appearance and also preserving the photograph, another important point to mention. Besides, my patron discovers that we also have a choice line of frames. Next I show some carefully tinted photographs of the best available subjects. This must be done smoothly, else it will be too apparent you are a clever saleswoman. Be clever, but conceal it. Put your heart into your salesmanship. Be enthusiastic over the beautiful prints you display and you are sure to transmit some of your enthusiasm to your customer. We want people to get the picture habit. We may not sell all we have suggested, but the total increase of sales for the month will be better than if we had shown only plain photographs and waited for a few to ask if we sold frames and did tinting. Talk about large work and call attention to a few choice artistically framed specimens upon the walls. At a later day your patron may wish something in that line. Spend as much time as you can spare with every prospective customer. They will be more apt to return and feel that much more at ease and at home when they do. Do not quote prices by the dozen. A negative will give off more or less than a dozen. Give the price for the first print and the duplicate price per print. I have found this invariably leads to the ordering of larger work, patrons feeling that they can order at their own convenience.

### Booking a Sitting

Lay particular stress upon the necessity of making an appointment for a sitting. Do not allow patrons to think they can drop in at any time and be accommodated at once. Failing to do this is not conducive to the impression that yours is a busy studio. If they do come when the photographer is busy, the man, woman or child, as the case may be, becomes impatient and ruffled—



something to be absolutely avoided in a studio. A visit to the studio must be a pleasure trip from the beginning to the end. So much for the prospective patron.

The patron has now come for the sitting, according to an appointment which has either been phoned or written. I register the name, address, and order, and collect something on the account. I prefer this method because one is invariably busy with another customer when this first sitter is finished. On a printed slip which I hand the photographer, are all particulars. We use this also for recording the number of exposures made, size of plates and the like.

The customer next visits the studio for the proofs, if they were not to be posted. It is much better to have patron call for proofs, if possible, because you then have another opportunity to talk up the good points of several proofs; thus bringing up the sum total of the order to a higher point. Try to look over proofs carefully before the sitter calls for them, so that you can talk intelligently, and to the end that the patron feels you have been interested enough to give them this previous attention. Be sure to get the opinion of the party who made them. This, I find, always carries a great deal of weight.

### System in Fulfilling Orders.

In closing, just a few words on the delivery of the photographs. By looking at your cards in the order drawer you know each day what orders are promised. I take it for granted you use the card system, as it is by far the best. Attend to this each morning, and if the entire order is not ready, have as many as can be completed for the date promised. In delivering the pictures appear as interested as you were in getting the orders. Do not be indifferent or mechanical. If the pictures are not just to the patron's liking, find out what the objection is and have them altered. This is the only way to increase your list of patrons and hold those you already have. Suggest framing or tinting some of the prints, should opportunity present, whatever they specified when they first interviewed you, should opportunity again present. I believe that in a photographer's reception room, as well as in a department store, the power of suggestion needs to be used continually. The methods I have outlined appeal to me the best, even after visiting a great many different studios and observing the methods employed.

E. F. HANNAVAN.

## ALUM-HYPO BATHS FOR THE SIMULTANEOUS FIXING AND HARDENING OF PLATES AND FILMS.

[Many formulæ for alum fixing-baths are to be found in the text-books, but few, we imagine, which are the result of experiments, such as the following by Professor Namias, which we translate here from our contemporary "Das Atelier des Photographen." The writer, after examining a number of preparations for the composition of a hypo-alum fixing-bath, gives the palm to a mixture of chrome alum, hypo, and acetate of soda.—Eds. "B.J."]

ATTEMPTS have frequently been made to compound a bath which should harden the gelatine film of negatives at the same time that it removed the silver bromide from them. Lumière and Seyewetz have shown that small additions of ordinary or chrome alum can be made to hypo solution containing a little sodium bisulphite, and that this addition imparts hardening properties to the bath. These baths, however, possess poor keeping properties, and, moreover, their action is but slight. The writer has ascertained that in the presence of sodium acetate in the fixing bath small quantities of acids, or acid salts, can be added without producing decomposition. In order to discover the properties of baths compounded on these lines, a considerable number of formulæ were tried, and the behaviour of the baths examined with regard to their hardening action and keeping properties—that is to say, freedom from decomposing action on hypo. Strips of gelatine which had been softened in cold water were treated in the different solutions.

Those subjected to baths Nos. 7, 8, and 9 became insoluble in from three to four minutes, solution 10 acted in about five minutes, and the others, Nos. 11, 12, and 13 in about eight or nine minutes. On account of the almost complete absence of precipitate in these three latter solutions, No. 13 is recommended as the best of all those examined. Its action is such that within the time necessary for the fixation of the plate a complete hardening of the gelatine takes place, and the user is therefore in the position to prevent any frilling or other variations of the plate due to differences of temperature. The speed of fixation is not appreciably reduced by the presence of the alum.

1.—Chrome alum solution.....	10 p.c.	50 ccs.	Gave heavy ppt. with evolution of sulphurous acid and sulphuretted hydrogen.
Hypo solution.....	50 p.c.	50 ccs.	
2.—Ordinary alum solution.....	10 p.c.	50 ccs.	
Hypo solution.....	50 p.c.	50 ccs.	

3.—Chrome alum solution.....	10 p.c.	50 ccs.	Gave slight ppt. after a few minutes.
Hypo solution.....	50 p.c.	50 ccs.	
Sodium acetate solution.....	—	2.5 gms.	
4.—Ordinary alum solution.....	10 p.c.	50 ccs.	" "
Hypo solution.....	50 p.c.	50 ccs.	
Acetic acid solution.....	—	2.5 gms.	
Sodium acetate solution.....	—	—	
5.—Chrome alum solution.....	10 p.c.	50 ccs.	Immediate and distinct ppt.
Hypo solution.....	50 p.c.	50 ccs.	
Acetic acid solution.....	—	1 cc.	
Sodium acetate solution.....	—	2.5 gms.	
6.—Ordinary alum solution.....	10 p.c.	50 ccs.	" "
Hypo solution.....	50 p.c.	50 ccs.	
Acetic acid solution.....	—	1 cc.	
Sodium acetate solution.....	—	2.5 gms.	
7.—Chrome alum solution.....	5 p.c.	50 ccs.	Ppt. after some hours.
Hypo solution.....	50 p.c.	50 ccs.	
Sodium acetate solution.....	—	2.5 gms.	
8.—Ordinary alum solution.....	5 p.c.	50 ccs.	Ppt. less marked.
Hypo solution.....	50 p.c.	50 ccs.	
Sodium acetate solution.....	—	2.5 gms.	
9.—Chrome alum solution.....	2.5 p.c.	50 ccs.	More rapid and marked ppt.
Hypo solution.....	50 p.c.	50 ccs.	
Acetic acid solution.....	—	1 cc.	
Sodium acetate solution.....	—	2.5 gms.	
10.—Ordinary alum solution.....	2.5 p.c.	50 ccs.	" "
Hypo solution.....	50 p.c.	50 ccs.	
Acetic acid solution.....	—	1 cc.	
Sodium acetate solution.....	—	2.5 gms.	
11.—Chrome alum solution.....	2.5 p.c.	50 ccs.	Slow and slight ppt.
Hypo solution.....	50 p.c.	50 ccs.	
Sodium acetate solution.....	—	2.5 gms.	
12.—Ordinary alum solution.....	2.5 p.c.	50 ccs.	" "
Hypo solution.....	50 p.c.	50 ccs.	
Sodium acetate solution.....	—	2.5 gms.	
13.—Chrome alum solution.....	1.5 p.c.	50 ccs.	Solution remains clear.
Hypo solution.....	50 p.c.	50 ccs.	
Sodium acetate solution.....	—	2.5 gms.	

R. NAMIAS.

### RESTORING NEGATIVES OF UNEVEN DENSITY DUE TO NON-UNIFORM DRYING.

THE following note on a mishap which frequently falls to the photographic beginner is worthy of extract from the pages of our contemporary, the "Photographic Times." The method is certainly worthy of trial.

I recently made two negatives on double coated non-halation plates, and, by reason of a sudden change in the weather while the plates were drying, portions of each negatives showed much greater density than the remainder, making them totally unfit to print from. Since circumstances prevented my repeating the exposure, it was especially desirable to save the negatives, and local reduction, the only method I had ever heard recommended, seemed rather dangerous, so a means was sought which would affect the entire negative, and afford more desirable results.

Prolonged soaking in water and careful drying had no effect, nor did soaking in an acid-alum hypo bath, followed by washing and drying, make any visible difference.

The next method tried was rehalogenisation, as described in the "Photographic Times" of April, 1907, redevelopment being effected by means of a dilute pyro-soda solution, and the results were all that could be desired. The negatives, viewed by transmitted light, show perfectly uniform density, and prints from them are perfect.

Both negatives were portraits, in one case the line of demarcation lying across perfectly uniform density, and prints the sitter's cheek, in the other across a prominent portion of a white dress, so that any variation would be readily visible.

I would caution anyone trying this method against removing the plates from the developer too soon, as the action seems to be uneven in the earlier stages.

PAUL L. ANDERSON.

### THE ANNUAL INDEX TO THE "B.J."

THE publication last week of the annual index to "The British Journal of Photography" for 1907 has made us the recipients of a number of letters commenting on the comprehensive character of the index and its usefulness as a means of reference to the photographic events and progress of the past year. One of our aims in the compilation of the index being the provision of means whereby the busy man can quickly turn up a given item of news or trade intelligence, it is satisfactory to learn the view taken of it by members of the photographic trade. From some of the letters we have received we may make one or two extracts:—

Mr. A. W. W. Bartlett, of Messrs. Kodak, Ltd., writes: "It certainly seems to me to be on useful lines."

Mr. F. E. Greenwood, of Messrs. Elliott and Sons, Ltd., writes: "This will prove very useful."

Mr. Carl Hentschel, of Messrs. Carl Hentschel, Ltd., writes: "I think it should prove very useful."

Mr. J. McIntosh, Secretary of the Royal Photographic Society, writes: "The index really seems to be so full that at the moment I cannot suggest any improvement upon it."

Dr. C. E. Kenneth Mees, of Messrs. Wratten and Wainwright, Ltd., writes: "Must congratulate you not only on its completeness but on the promptitude of its appearance—before we had actually received the last number of the year! We must also take this opportunity of congratulating you on the useful 'Patents Chronology' completed in the first year of the 'Colour-Photography Supplement.'"

Mr. Charles J. Miller, of the Rotary Photographic Co., Ltd., writes: "The most thorough and complete index to a weekly publication that I have seen."

Mr. H. E. Smith, of Messrs. H. Edmund and Co., writes: "The best thing of its sort for reference in the year, and hence most acceptable."

Mr. Percy G. A. Wright, of Houghtons Ltd., writes: "The index is evidently most complete."

LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.—On Thursday, January 9, 1908, Mr. W. Thomas will lecture before the members of the above association upon "The Use of the Hand Camera for Newspaper Illustration," and visitors will find a hearty welcome at the meeting, which will be held at the White Swan, Tudor Street, E.C.

### FORTHCOMING EXHIBITIONS.

January 14 to 23.—Glasgow Southern Photographic Association. Entries close January 4. Sec., W. Bryce, 29, Somerville Drive, Mount Florida, Glasgow.

January 30 to February 1.—Nelson Photographic Society. Entries close January 20. Sec., Henry H. Beetham, 98, Brunswick Street, Nelson, Lancs.

February 5 to 7.—Borough of Tynemouth Photographic Society. Entries close January 25. Sec., J. R. Johnston, 29, Drummond Terrace, North Shields.

February 15 to March 7.—Scottish National Salon. Entries close January 20. Sec., Frederick W. Kay, 183, Union Street, Aberdeen.

February 19 to 20.—Royal Albert Institute, Windsor. Entries close February 14. Sec., J. W. Gooch, 9, High Street, Windsor.

February 19 to 21.—Longton and District Photographic Society. Entries close February 8. Sec., T. Mottershead, 32, Stafford Street, Longton.

February 20 to 22.—South Manchester Photographic Society. Entries close February 5. Sec., M. W. Thompstone, 2, The Grove, Whitworth Park, Manchester.

February 23 to March 2.—Birmingham Photographic Society. Entries close February 8. Sec., Lewis Lloyd, Church Road, Moseley, Birmingham.

March 4 to 5.—Canterbury Camera Club. Entries close February 22. Sec., W. E. Smith, 11, Broad Street, Canterbury.

March 4 to 7.—Ilkeston Arts Club (Photographic Section). Sec., A. Smith, 11, Graham Street, Ilkeston.

March 7 to 14.—Leicester and Leicestershire Photographic Society. Sec., Lewis Ough, F.C.S., Fernleigh, St. James's Road, Leicester.

March 7 to 21.—South London Photographic Society. Sec., E. Pady, 260, Southampton Street, Camberwell, S.E.

March 9 to 12.—Worthing Camera Club. Entries close February 29. Sec., Edmund F. H. Crouch, 11, South Street, Worthing.

March 12 to 14.—Shropshire Camera Club. Entries close March 2. Sec., W. D. Haydon, The Schools, Shrewsbury.

March 14 to 21.—Sunderland Photographic Association. Entries close March 1. Sec., W. E. Kieffer, Stirling Street, Sunderland.

March 16 to 19.—Cripplegate Photographic Society. Sec., J. G. Denyer, 15, Ostade Road, Brixton Hill, S.W.

March 18 to 21.—Nottingham Camera Club. Sec., S. W. B. Vines, 101, Sherwood Street, Nottingham.

THE LATE DR. JANSSEN.—We regret to learn of the death of Dr. Janssen, director of the Mendon Astro-Physical Observatory. Dr. Janssen, who was eighty-three years of age, two years ago received the Progress Medal of the Royal Photographic Society for his researches in astronomical photography, and in the phenomena of reversal.

A "ROTARY" ENTERTAINMENT AND PRESENTATION.—On December 21 last the directors of the Rotary Photographic Company, Ltd., gave the usual annual entertainment to their staff, which was, on this occasion, held in the newly erected hall of the Colneside Club at Ealing. The guests numbered well over 400, in the proportion of about 100 from the City office and over 300 from the local works. Among those present were Mr. Haenel (managing director), who welcomed the visitors in a very happy little speech, and Mrs. Haenel, Mr. Balfour (works manager) and Mrs. Balfour, Mr. Hones and Mr. Hill (assistant managers). The proceedings opened with a concert, in which the following took part: Herr C. K. Elderhorst and his Viennese quartette, Miss Ruby Wilson, Miss Eileen Morris, Miss Dolly Charet, who gave a humorous recitation, and Mr. Hercat, who delighted his audience with a sleight of hand and ventriloquial entertainment. At the close of this programme Mr. Balfour handed to the foremen of the various departments Christmas gifts for distribution amongst the employees of the firm in appreciation of their services, no one, from the eldest to the youngest, being overlooked. The last item on the programme was a presentation to Mr. Butler, who was leaving the firm to take up more advanced work elsewhere, from a number of his fellow employees, of a set of gold links and studs. After this the room was cleared for dancing, the proceedings terminating about midnight with "Auld Lang Syne" and the National Anthem.



## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents have been received between December 16 and 21, 1907:—

**DARK SLIDES.**—No. 27,845. Improvements in dark slides. Alfred Meachem, 55, Chancery Lane, London.

**PRINTING FRAMES.**—No. 27,856. Improvements in photographic printing frames. Jandus Arc Lamp and Electric Co., Ltd., and Adrian Denman Jones, Hartham Road, Holloway, London, N.

**CAMERAS.**—No. 28,185. Improvements in photographic cameras. William Booth, 3, Brown Street, Market Street, Manchester.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

**PRINTING FRAMES.**—No. 19,220, 1907. This invention relates to improvements in photographic printing frames, and particularly refers to that class of frame described in a prior patent, No. 22,653, of the year 1900. In this the back of the printing frame, which is

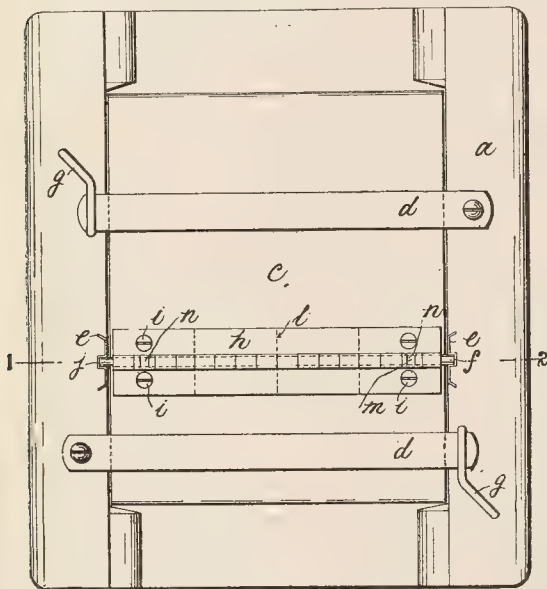


Fig. 1.

made in two parts hinged together by two separate hinges, has the pins of such hinges projecting at the extreme ends so as to engage with vertical grooves formed in the main frame constituting the device. These grooves are lined with metallic plates secured to the frame, the object being to prevent movement of the back either in a longitudinal or lateral direction, so that when either part of the hinged back is turned up for examination of the print it can be replaced in position again without disturbing the print or negative. It has been found (in the use of separate hinges, gudgeons, and distance ferrules) that unless these are very carefully secured to the hinged back and to the hinge pin the latter will not turn about their centre accurately—that is to say, one part of the back is liable to touch the print and disturb it before its other portion gets firmly down, and consequently a bad print is the result. In addition, the use of two hinges and two hinge pins is an arrangement liable to get out of order in other ways and allow the back to shift in a lateral or longitudinal direction.

The object of the present invention is to avoid the defects referred to by providing a hinge to extend for substantially the full width of the back without the use of gudgeons and distance ferrules, a long hinge pin being employed as part of its construction, such

pin fitting in grooves as before mentioned, whilst the hinge plates, or some of them, are recessed to engage with grooves in the pin so as to secure it firmly.

Of the drawings, Fig. 1 is a back elevation of a photographic printing frame with the improvements; Fig. 2, transverse section of same on line 1, 2 of Fig. 1; whilst Fig. 3 is a longitudinal section of the hinged back showing a modified arrangement of the hinge.

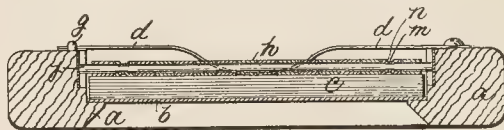


Fig. 2.

In carrying out the invention, *a* represents the main frame of the device, *b* a negative, *c* the hinged back, *d* the usual spring bars for holding the back in position, *e* the metal plates provided each with a vertical groove *f* embedded and secured in the inner vertical edges of the longitudinal bars of the frame *a*, and *g* the usual staples for holding the bars *d* in position. All these parts are of similar construction to the corresponding parts in the previous patent. The present invention consists in securing to the two portions of the hinged back *c* a hinge *h* extending for substantially the full width of the back. Such hinge may be secured flush with the surface of the back as indicated in Figs. 1 and 2, by screws or

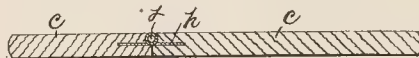


Fig. 3.

rivets *i*, or it may be embedded in the back and be secured by screws or rivets as indicated in Fig. 3. In both cases it is provided with a hinge pin *j* extending entirely through it and so that its ends project and are adapted to engage in the vertical grooves *f* of the metal plates *e*. The pins fits in these grooves both longitudinally and laterally so as to hold the back *c* firmly in position at all times and thereby prevent movement when either half of such back is lifted up to examine the print. Each half of the hinge plates may be made in one piece or in separate pieces split transversely as indicated by the broken lines *l* shown in Fig. 1. The middle sections of the hinge plates may also be dispensed with, if necessary, so long as a long hinge pin, as described, is used to connect the extreme sections of hinge plates. To hold the hinge pin firmly in position in the hinge plates it is grooved transversely at one or more points *m* and the hinge plates are dented in to engage with the grooves in the pin, as indicated at *n* in Figs. 1 and 2. Or small transverse rivets or pegs may be employed to prevent separation of the parts. John Wilkinson and Alfred Wilkinson, 6, St. Oswald Street, Manchester.

### New Trade Names.

**DOLMIT.**—No. 298,211. Chemical substances used in photography. Kodak, Ltd., 57-61, Clerkenwell Road, London, E.C., dealers in photographic materials. November 21, 1907.

**SCOTTISH NATIONAL SALON, 1908.**—The closing date for entries for the fifth annual Scottish National Salon to be held in Aberdeen is January 20, 1908, and the receiving date for pictures, February 4. Intending exhibitors can obtain full prospectus and entry form from the hon. sec., Mr. Frederick W. Kay, 183, Union Street, Aberdeen.

**A PHOTOGRAPHER'S 11,000-MILE TOUR.**—A remarkable series of photographs, the result of a tour through America, have been obtained and offered for sale by Mr. R. Banks, of 37, Fountain Street, Manchester. Mr. Banks accompanied the European Cotton Delegation on their visit to the United States to the Atlanta Cotton Convention, and during little over a month's absence from this country travelled over 11,000 miles and obtained a large series of photographs, representing life in many American and Canadian centres. A full descriptive list of the photographs has been issued by Mr. Banks.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### A Remedy for Flat Autochromes.

Owing largely to fluctuating light, the exposure problem as regards Autochromes (writes Mr. John J. Ward in "Photography") becomes quite a difficult matter to deal with, and it is very tantalising, when one has considerably increased the exposure, to find that the second, and perhaps the third, plate are almost identical result with the first. It is the more annoying, too, to spoil costly plates in this manner when the exposure is nearly correct, and one is tempted to try another plate to get a perfect result. However, by the following method I have recently been enabled to make some of these slightly under-exposed pictures into tolerably good examples:—The plate is first immersed in the following reducer, the dish being kept rocking: (a) Hypo  $\frac{1}{2}$  oz., water 10 oz. (b) Potassium ferricyanide 30 grains, water 10 oz. Equal parts of (a) and (b) are mixed for use. In this the faulty plate is reduced for five minutes or more. It is then washed for two minutes. Next it is intensified with the F and G Autochrome solutions. Finally it is treated with the H clearing solution, and fixed in the usual way with (I) the acid fixing bath.

By this considerable reduction the picture is cleared of its grey and flat appearance, and the intensifying brightens up the stronger colours. Several plates that I had "scrapped" have with this treatment yielded quite presentable pictures. In some cases the colours have at the finish of the treatment been too deep, but half a minute or so in the above reducer puts this matter right. The plate is then washed and dried.

### Control in Ozobrome.

I am convinced (writes Mr. A. H. Blake in "Photography") that of the two methods available for making ozobrome prints, one superposing the tissue on the bromide and the other making a carbon print from the bromide by transfer, leaving the bleached bromide free to be developed and used over again, the first is by far the better for control. Transferred prints do not adhere so well to their support under the action of brush and spray; and often it is hardly possible to touch them with the brush without the picture flaking off. They are also more liable to be affected by change of temperature in the water.

This is no doubt very tiresome, as it is wasteful both of tissue and of one's energy to sacrifice a print for the production of one picture, which, by the second process, would produce any number, but I only give my own experience in the matter. I must also lay stress upon the use of the extra alum solution for retaining the lighter details as given in the Ozobrome Co.'s instructions. It must be used when control is required; and it should be noted that its action does not persist long, and that if, say, an interval of a couple of hours intervenes between the pigmentation of the prints, the alum solution must be renewed. By not doing this I have been caught once or twice, and could not imagine why, after two or three prints had behaved excellently under brush manipulation, the next should peel off at a touch, until I discovered that the effect of the added alum solution does not last long. If the ozobrome control spoils a goodly number of prints, that is only a drawback that is inherent in all processes which involve personal manipulation of this kind, and are as nothing compared with the waste of prints when the gum printer is getting his effects. Workers in ozobrome will remember that there is a time, as in carbon printing, when, under the influence of the warm bath, all the superfluous pigment has been washed away, and the print stands clear and complete, and, if no control were intended, ready for immersion in cold clearing water and the drying. This is the time when the first efforts for control are to be made on the parts where the high lights are to be considerably lightened. It is as well to slip a sheet of glass under the print, so that it can be lifted flat right up to the surface of the water, for if the brush be used too much under the water, the strength of the brush stroke is not so easily ascertainable. It is not felt so easily by the finger tips, and, owing to the discoloration of the water by pigment, one cannot so easily see its effect. It will easily be understood that a little too much force soon removes the tissue altogether.

It will be found in actual practice that it is easier to transfer the print rapidly to a shallow dish of clean water of the same temperature as the developing tank. The clean, shallow water will give great advantage. The brush must be used tentatively, increasing in force and power as the colour is removed with impunity.

Great differences will be met with even in the same batch of tissue at this stage, differences for which it is not easy to account. Why should the first print be so soft and pliable that the slightest brush mark pulls the tissue off from its support, leaving spots of bare bromide print beneath, while the next print, in which all the operations have been identical, takes hand-work easily? Very delicate detail work is best not attempted at this stage; it will come later.

### The Studio Walls

I have noticed the bare, forbidding appearance of the walls in nearly every photographer's studio I have been in (writes Mr. F. M. Sutcliffe in "The Amateur Photographer"); whereas painters' studios always look the opposite—most comfortable. Is it that photographers have no invention, and cannot set themselves to work to make the walls of their workrooms pleasing to the eye? A painter will take a garret at a few shillings a week, and by papering the lower half of the walls with brown paper, and buying a few lengths of moulding and a pailful of whitewash, and by cutting a few stencils, make a most delightful room of most unpromising surroundings. The photographer will spend hundreds of pounds in velvet curtains, black and gold jardinières, palms, cocoanut trees, and velvet-covered lounges, and in the end get a most irritating room to be in. I do not mean to imply that *you* are likely to have either a fountain or a gramophone playing in your reception room, but I would venture to caution you about spending all your capital in fitting up your rooms.

### To Avoid Airbells in the Final Transfer of Carbon Prints.

I recommend the following method of making the final transfer (writes Mr. H. B. Whistler in "The Amateur Photographer") by which I have found that airbells are far less likely to be formed, provided, of course, that the instructions as to previously soaking the final support are thoroughly carried out. Place the squeegee board as level as possible, take the print (on its temporary support, which may be either flexible or opal) from the warm water, lay it on the board (face upwards, of course), and gently pour over it sufficient warm water to just cover it without running off. Be careful to see that the print, as well as the temporary support, are entirely covered by the water, at the same time breaking up any airbells should they have formed in flowing the water on. A piece of final support having been well soaked in cold water, is placed for a short time in hot water, from which it is lifted (being careful to see that no airbells are adhering to its surface) with the right hand, and one of its edges gently lowered on to a corresponding margin of the temporary support, in which position it is held firmly down by the left hand, the whole sheet then being slowly lowered across the surface of the print. This should be done with a sweeping motion, so as to drive the water in front of it as it is lowered. Squeegee into contact, starting the first stroke at about one or two inches from the left hand, and follow the direction the paper was lowered in, viz., from left to right. Hold the paper down at its right-hand edge, and squeegee the remaining one or two inches on the left-hand side, the stroke being in the opposite direction, viz., from right to left. Lay aside, quite flat, for a few minutes to set, and then hang up to dry in the usual manner.

### The Treatment of Reflections.

There is just one word of warning (says Mr. A. H. Blake, writing in "Focus") as to the technical part of the work in dealing with reflections in water or wet streets, and it is this. They require very much more exposure than at first sight one would be inclined to think. They look so light, so dainty, so full of "go" and movement that they deceive us with regard to the rapidity with which they can register themselves on the plate, and if care be not taken negatives will be under-exposed and come heavy and dark in the printing, and the movement and spontaneity, which is their chief charm, will be lost. It is difficult to get water to look really "wet";



it has a strong tendency in places to appear too solid and impenetrable a flat surface.

The caution as to under-exposure is particularly necessary in the case of street reflections—the water that reflects is very shallow—a mere film, as it were, and underneath is the dark roadway, and loss of lightness and darkness is never far to seek. The darks come too dark, for there is little light between the high houses, but the water patches catch the light and come hard and chalky.

## New Books.

"Deutscher Photographen-Kalender, Taschenbuch und Almanach, 1908." Edited by K. Schwier. Weimar: Office of "Deutschen Photographen Zeitung." Part II. M. 2.

Herr Karl Schwier, as many know, produces his annual and indispensable "Almanach" in two parts, the first containing industrial, commercial, and other particulars conveniently arranged for ready reference, and the second (now before us) comprising technical and practical information of daily use. In the volume will be found tables of weights and measures, chemical formulæ, and solubility constants, together with a very comprehensive formulary and compendium of practical information. Optical and other tables also figure in "Schwier" as in other books of a like nature, but "Schwier" is essentially a pocket book, and does not aim at the review of the year's progress to be found in Eder's Jahrbuch. We imagine even that any signs of the (happily, reduced) corpulency of the "B.J." Almanac would fill its producers with apprehension for its welfare. In its own line there is no book better edited than "Schwier."

"Photographisches Hilfsbuch für Ernste Arbeit." By Hans Schmidt. Pp. 224, 9 x 6. Berlin: Gustav Schmidt. M. 4.

We regard this as a piece of book-making rather than a contribution to photographic literature fit to rank with other really great photographic books such as are to be found in the German tongue. For all that, the author has prepared a useful work dealing with the various printing processes. Our complaint is that points which we should much like to see discussed are passed over. Thus, the chapter on the sulphide toning of bromides does not even mention any process other than the hypo-alum, although five pages are allotted to the almost obsolete uranium processes. The volume might be brought more closely in line with the actual practice of photographers.

"The Science Year-Book, 1903." Edited by Major D. F. S. Baden-Powell. London: King, Sell, and Olding. 5s. net.

Astronomical, physical, and chemical tables compose a large part of this year-book—the fourth issued—and are of a kind serviceable to the student of popular science. Similarly, the review of scientific progress during 1907 can be read with interest by those who have not had the opportunity of systematic scientific training. A glossary of recently introduced scientific terms and names is a good idea; it includes the photographic terms Celor (Goerz lens), Homocol, and Pinatype, but no others. The "Year-Book" further includes particulars of scientific societies and publications, and is also a diary with a page for each day in the year.

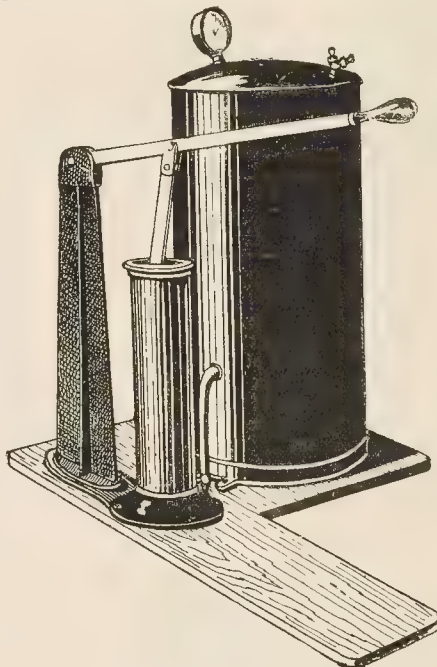
A CATALOGUE OF BOOKS in the library of the Royal Photographic Society has been published by the Society, and may be obtained by non-members for 5s. or by members for 2s. (postage 4½d.). The list is a volume of 193 pages, uniform in size with the Society's "Journal," and catalogues the volumes under the names of authors and also under a subject classification, an alphabetical key to which is provided. The former section calls for little comment; the latter follows the general library arrangement of collecting the books first under "Dictionaries," "General Treatises" (the largest sub-section), "Light and Optics," "Portraiture," etc., afterwards classifying works under "Negative Processes" and "Positive Processes," and sub-sections of these latter. Such classification, as those who have attempted it will admit, is not an easy matter, and the compilers of the R.P.S. catalogue appear to have adopted an intelligible and comprehensive scheme. One good feature of the catalogue is its impression on one side only of the paper, so that a blank folio faces

each printed page, and entries can be made of volumes required from time to time, which entries, we understand, are to be printed in the Society's "Journal."

## New Apparatus, &c.

"Airostyle" Improved Air Compressors. Sold by the "Airostyle" Syndicate, Ltd., 35, St. Bride Street, London, E.C.

One of the drawbacks attending the use of air-brushes where mechanical pumps are not in use seems to have been the amount of labour entailed by the use of foot pumps. To the ingenuity of Mr. Aufholz, the energetic manager of the "Airostyle" Syndicate, artists will be indebted for placing on the market two patterns of hand-pumps, intended to reduce this labour to a minimum, the neces-



The No. 2 Airostyle Air-Compressor.

sary pressure being easily kept up with the left hand. The pumps which we have been able to inspect, and one of which we illustrate, will supply a large condenser or air reservoir, enabling the worker to use on emergency two brushes, the condensers supplied with the larger of these pumps being fitted with twin taps, as shown in the cut.

The No. 1 pump is supplied with a cylinder, 18 x 8 inches, and works up to 25 to 30 lbs. air pressure. It is fitted with a 2½-inch brass pressure gauge, and costs 38s. nett.

The No. 2 size has a 23 x 9½ inch cylinder of leaded steel, and is mounted on a baseboard of solid construction, shaped so as to allow the operator to work easily with the left hand. It is fitted with a strong twin tap, and will work two "Airostyle" air-brushes. Its price is £3 10s.

Steinheil Isochromatic Parallel Glass Screens. Sold by A. E. Staley and Co., 19, Tavies Inn, Holborn Circus, London, E.C.

Users of orthochromatic plates will thank Messrs. Staley for placing at their disposal an orthochromatic light filter which is the joint product of two eminent optical establishments, the Schott Glass Works at Jena and the Munich firm of Steinheil. The new screen is made from glass coloured in the mass as the result of experiments carried out by Schott and Genossen, the makers of the famed Jena glass, whilst its optical surfacing and plano-parallelism are guaran-

teed by the well-known Steinheil firm of opticians. From an examination of one of the filters in the spectrograph and on a test chart, it is easy to see its very great superiority over previous body-coloured glass screens, the use of which has declined of late in favour of the more easily adjusted gelatine film cemented between two glass surfaces. The single glass filter can, however, be made much lighter and thinner, and lends itself more readily to easy attachment to the lens by a screw or slip-on mounting. The screens are made in two depths, one requiring about twice the exposure of the other, and the photographer's selection will be governed by the character of the plate he is using and the degree of correction at which he is aiming. The sizes in which the screens are obtained, and the prices of the latter, are as follows:—

Sizes:—  $\frac{3}{4}$  in. 1 in.  $1\frac{1}{4}$  in.  $1\frac{1}{2}$  in. 2 in.  $2\frac{1}{2}$  in.  $2\frac{3}{4}$  in. 3 in. 4 in.  
Unmounted, 6/- 7/8 9/- 9/- 10/6 12/- 15/- 18/6 22/- 25/-

Additional to which is an extra charge, according to the size of the filter, for mounting.

**BACKGROUNDS.**—Some new styles in backgrounds have been shown to us within the past few days by Messrs. F. E. Jones and Co., of 22, Gray's Inn Road, W.C., to which address photographers are invited to apply for particulars and illustrations. Some examples of ground in the style of oak panelling are a welcome variation from the usual thing, and other designs, outdoor and indoor, possess distinction, whilst the prices cannot be called exorbitant.

## New Materials.

**Time and Tank Developers.** Sold by Houghtons Ltd., 88-89, High Holborn, London, W.C.

In placing a new line of developing preparations on the market, Messrs. Houghtons emphasise their special suitability for the "stand" or "time" method of which, within the past year or two, much greater use has been made. The new introduction may equally claim the attention of both amateur and professional photographers, for its cleanness, however used—and it is, of course, just as fitted for development by the time-honoured methods of inspection as by the newer processes of "time" or "factor." A sixpenny packet of the new powders contains six cartons, each of which is dissolved in 20 oz. of water to form the "time" developer, or in three times this quantity for development by the slower "stand"



method. Messrs. Houghtons give as round figures for the time of development in the two cases, ten and thirty minutes, a recommendation which obviously may be modified by the user to suit his own requirements of density in the negative, or as may be found necessary from the character of the plate. A "hard-working" plate will do with a shorter time of development than one which builds up density slowly, but the user can easily make the necessary adjustment after one or two preliminary trials, and can then adhere to the time which gives him what he wants with the very minimum of trouble in the making up of his solution and the certainty that he is using a freshly prepared developer of a fixed composition. In addition to adhering to a time of development which he has found suitable, he has only to see that the temperature of the solution falls just about within the range of 60 deg. to 65 deg., and he

may then depend on treating a series of exposures with great regularity.

Our own experience of the developers has been very satisfactory. We found the preparation to be in a state of very fine powder, to dissolve quickly, and to be free from the slightest tendency to fog or stain. Testing a time—ten minutes—on a very soft working plate, we found that a series of hand-camera exposures made in a weak light of Christmas Day gave us negatives of good printing quality, a proof, if any were needed, of the energy of the developer. Development of plates, in batches in a tank, being now adopted by many professional photographers, who find it economical of time and labour—important items compared with cost of developer—there is good reason for drawing attention to this new powder developer, which is at once convenient, efficient, and most reasonable in price.

## CATALOGUES AND TRADE NOTICES.

**THE GAUMONT Co.,** Cecil Court, London, W.C., have issued the eighty-eighth list of new "Elge" films. A copy is obtainable post free, and will be found to contain many novel subjects.

A NEW LIST of prices for postcards from photographers' originals has just been issued by Mr. Philip G. Hunt, of 34, Paternoster Row, E.C. Mr. Hunt has a reputation to maintain for a fine average of work in P.O.P., colotype, and chromo cards, and we do not apprehend any lowering of his standard even at the very moderate prices embodied in his revised list. Those in want of any description of card may be advised to write for the new price list and for the specimen book of the firm's five leading lines.

**"THE PROFESSIONAL PHOTOGRAPHER."**—The current issue of the Kodak Company's monthly publication is of special interest from its inclusion of reproductions of the Royal groups taken by Messrs. W. and D. Downey. Among other contents of note are an illustrated description of the Kodak professional department at Clerkenwell Road and descriptions of new professional accessories and apparatus.

A PROFESSIONAL CATALOGUE.—MESSRS. JOHN J. GRIFFIN and SONS Ltd., of Kingsway, where they are just on the point of installing a professional showroom and department, have issued a special professional 64-page list which describes only accessories for the use of the professional worker, and includes a number of articles originated by the Kingsway firm. Messrs. Griffin's list (gratis and post-free) should be obtained by those who wish to have the latest introductions before them when purchasing.

**"ABEL'S PHOTOGRAPHIC WEEKLY."**—We announced in a recent issue the imminence of a photographic weekly in America to contest the field with the united "Bulletin" and "Photographer." It has now reached us in the characteristic issue of "Abel's Photographic Weekly," stated to be edited by J. C. Abel, at 18e, 23rd Street, New York City, and to be owned by A. A. E. Abel, whoever he or she may be, at the same address. Our contemporary thus gives "the reason of it." "By certain process of law my old-time creditors, during my absence from New York, secretly sold the journal with which I have been so long connected, to its competitor, 'Bulletin of Photography.' Acting on my own desire, and the counsel of my friends, I have decided to come before the public again, under the title of 'Abel's Photographic Weekly.'" Mr. J. C. Abel, in an editorial introduction, announces that he will conduct the paper in future on highly personal lines. He will drop the editorial "we," will adopt and live up to the personal "I," and he further goes on to say:—"The paper on which this is printed is not up to the standard established and maintained for so long by 'The Photographer,' but is used so that I may be able to pay my bills each week as the weekly is printed, and I am sure that my subscribers will prefer good, live, topical, up-to-date, newsy reading matter, and about men who are living, rather than nice, shiny paper bearing only articles clipped and reprinted on 'dry-as-dust' subjects. No more debt for me. I know all about it, and henceforth I propose handling nothing I cannot pay for when I get it." We wonder what Proprietor "A. A. E. Abel" is to do. Apparently he is in the enviable position of being proprietor without the inconvenience and annoyance of bills to pay, since this part of the business is to be discharged by the editor. One asks: Are things what they seem, or is visions about?



## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

FRIDAY, JANUARY 3.

Sutton Photographic Club. "Slide Making on Ilford Plates." Algernon Brooker.  
West London Photographic Society. Members' Lantern Night.

MONDAY, JANUARY 6.

Southampton Camera Club. Annual General Meeting.  
Attercliffe Photographic Society. Photographic Chemicals.  
Cleveland Camera Club. "Retouching." T. W. Windross. "Stereoscopy with a Single Camera." F. W. Pearson.  
Bradford Photographic Society. "Home-made Plates and Paper." Hubert Henry.  
Kidderminster and District Photographic Society. "Enlarging on Bromide Paper." W. Thompson.  
Catford and Forest Hill Photographic Society. "Oil Printing." M. Arbuthnot.  
Scarborough and District Photographic Society. Y.P.U. Portfolio of Prints.  
Lancaster Photographic Society. "How I Photographed a Cathedral." Rev. A. E. Miller.  
Ilford and District Photographic Society. Enlarged Negatives, &c.

TUESDAY, JANUARY 7.

Epsom and District Literary and Scientific Society. "Lantern Slides." B. J. Edwards & Co.  
Chiswick Camera Club. Rotary Carbograph Paper.  
Stafford Photographic Society. "Enlarging." W. L. Hey.  
Sheffield Photographic Society. "What Can be Done with a Hand Camera." Frederick B. Hirst.  
Hackney Photographic Society. "Black Tones on Collodion Paper." W. Foster Brigham.  
Rotherham Photographic Society. "Colour Photography." J. Tasker.  
Worthing Camera Club. "Kristal Plates, with Exhibition of Prize Slides." J. M. F. Rawlin.

WEDNESDAY, JANUARY 8.

Borough Polytechnic Photographic Society. "Bromide Printing." A. J. Bulloch.  
Coventry Photographic Club. Photography (1907) Prize Slides.  
Bristol Photographic Club. Criticism on Special Winter Competition, by the President, followed by an Exhibition of Members' Lantern Slides.  
Acton Photographic Society. Rotary Carbograph Paper.

THURSDAY, JANUARY 9.

Liverpool Amateur Photographic Association. The Prize Slides of the 1907 Competition of the Affiliated Societies.  
Longton and District Photographic Society. "Oil Printing." Rev. C. F. I. Barnwell. Focus Prize Slides. Members' Exhibition of Prints and Slides.  
Queen's Park Amateur Photographic Association. Criticism Night. S. W. Crockett.  
Chelsea and District Photographic Society. "The Optical Lantern." T. G. Coaling.  
Rugby Photographic Society. "The Principles of Composition." W. E. Tindall, R.B.A.  
L.C.C. School of Photo-Engraving and Lithography. "Press and Technical Photography." Reinhold Thiele.  
Hull Photographic Society. "Exposure." Rev. C. O. Stewart.  
Midlothian Photographic Association. Social Evening. "One Man Show." J. B. Johnstone.  
Richmond Camera Club. "Five Centuries of Church Building." Henry W. Bennett.  
Nottingham Camera Club. "Lincolnshire and Miscellaneous Slides." Thos. Wright.  
Windsor Camera Club. Rotary Specialities.

LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.—At the meeting held on Thursday, Dec. 19, 1907 (Mr. S. H. Fry in the chair), Mr. C. H. L. Jackson lectured upon and demonstrated "Carbograph." Carbograph was, he said, a new tissue, which was prepared with bromide of silver emulsion incorporated with pigmented gelatine, and by its use direct carbon enlargements and contact prints could be easily made by artificial light. The rationale of the process was that when the tissue was exposed to light the bromide of silver was acted upon, and upon development gave a partly visible image in metallic silver. When treated with a solution of a chromate salt the silver image acted as a catalytic agent and reduced the chromate, which then tanned the gelatine in direct proportion to the amount of metallic silver deposit. The gelatine was thus rendered insoluble, whilst the silver itself was unaffected in any way. The tissue is obtainable in six colours—viz., engraving black, light green, cold sepia, warm sepia, red chalk, and photo brown, and as the colours were of various speeds, and, further, as the image was only partly visible during development, it was recommended that test exposures be made upon ordinary bromide paper, and developed in the ordinary manner. The time taken for the correct exposure should then be multiplied by the factors given in the instructions and the same developer used as was used for the test. Soft harmonious negatives full of detail were best for the process, and an iron developer should be used, as it had no tanning action upon the gelatine as had most of the more modern developers. The

print made for demonstration was of whole-plate size, and was exposed for 100 seconds at about six feet from an incandescent burner. After development, it was cleared in a 1 per cent. solution of glacial acetic acid for one minute, it was then rinsed in three changes of water and sensitised in the following bath for three minutes:—

Potass bichromate .....	384 grains.
Water .....	20 oz.
Potash alum, 10 per cent. solution.....	190 minims.

The bath keeps well, but should be filtered when returning to the bottle. It was again rinsed and then brought into contact with the transfer paper, squeezed, and laid between blotting for 10 minutes, and afterwards again developed in hot water at 100 deg. Fahr., which gave the real carbon print. After this development it was fixed in the usual 20 per cent. hypo bath for ten minutes. It was curious that the print at this stage was far darker than one would have supposed owing to the presence of the silver salt, and to obtain the brilliant red chalk of the carbon a bath of the ferricyanide and hypo reducer should be used to clear away all the silver, which should then be washed and finally dried. An orange light was all that was needed for the first development. At the same time it should be noted that the negatives for this process should be safe-edged just as for ordinary carbon work. Any single transfer paper could be used, and double transfer was not needed, except in contact printing, as by reversing the negative when enlarging the single transfer put things right.

Mr. Thomas asked if any trouble had been found from blisters, and the lecturer described the process as being absolutely free from them.

Mr. Teape asked if satisfactory enlargements had been made.

Mr. Jackson said yes, and the best results were obtained by a long soaking after the first developer up to half an hour, and before sensitising for the carbon.

Mr. Thomas asked if a brusa could be used for local work. The lecturer said it could, if used gently. The great danger would be the rubbing away of the image altogether.

Mr. Teape thought the process one of value for enlargements.

Mr. Haddon queried whether any developer could not be used if sufficient sulphite was used in compounding the same. He thought that perhaps glycin would prove of great value, as his experience was that gelatine treated with this developer remained soluble in warm water after four days' exposure. The effect of the chromate on the silver was, he said, exactly the same as in the ozotype process.

## Commercial & Legal Intelligence.

IMPERIAL DRUG STORES, LTD.—Registered December 16. Capital £600, in £1 shares. Objects: To acquire the business of wholesale and retail chemists, carried on at 171, Fulham Road, S.W., as the Imperial Drug Stores, and to carry on the business of chemists, druggists, photographers, opticians, dentists, etc. No initial public issue. Table "A" mainly applies. Registered office, 171, Fulham Road, S.W.

SUMMONS AGAINST A PORTRAIT CANVASSE.—In reference to a summons against "Watson and Co.," of Grove Road, Victoria Park, alleging that "Watson and Co." had detained a certain photograph, Mr. Cluer, at Clerkenwell, said: "I do not suppose these people read 'Truth' but this is evidently the same kind of trick exposed there. It crops up about once a year. Tanqueray and Co. is, I think, the name of the people."

When the case was called a young and good-looking Jewess appeared as the defendant.

Mr. Cluer (surprised): You are not "Watson and Co.," young lady.

The Defendant: Yes, I am.

Mr. Cluer: Are you married?—No.

Mr. Cluer: And you are trading as "Watson and Co."?—Yes.

The complainant, James Mudd, a working man, living in Robinson Road, Victoria Park, gave evidence which showed that his wife had handed to the defendant a photograph, on glass, of the witness's mother. The wife did it unknown to the husband, and was induced to do so by the defendant, who, the wife said, called and said that

Watson and Co. had opened a new studio in that neighbourhood, and in order to make their work known would give away a free copy of any photograph. Later the defendant came with an enlargement, and intimated that the framing would be 7s. 6d. The wife said she could not afford that, and then the defendant said the original would not be given up unless 2s. 6d. was paid for the proof.

The defendant went into the witness box, and said her name was Eugenia Watson. She canvassed for the photograph to enlarge. It was not true that she promised a "free" copy; she said she would submit a specimen of their work. The wife paid 6d. deposit.

Mr. Cluer: That does not bind her husband, and she did this without his authority. No doubt you thought they would not have the pluck to come into court. Give up the original, and pay 7s. costs. If all your customers, when they find themselves caught in this way, would take summonses to recover their property, they would soon stop this improper business.

**APOLLO ART ASSOCIATION.**—The "London Gazette" announces that a receiving order has been made against Frederick Vogel, photo enlarger, carrying on business under the style of the Apollo Art Association, at Jackson's Chambers, St. Peter's Street, Derby, and residing at 136, Portland Road, Nottingham.

**BRITISH PHOTO-FRAME COMPANY, LTD. (Birmingham).**—£300 10 per cent. debentures, created and dated December 6, 1907, charged on the company's property, present and future, including uncalled capital, have been registered. No trustees.

**MANSFIELD, LTD. (Photographers, Bradford and elsewhere).**—£500 5 per cent. debentures, created October 22, and dated December 10, 1907, charged on the company's undertaking and property, present capital, have been registered. No trustees.

## News and Notes.

**NORTHERN POLYTECHNIC INSTITUTE, HOLLOWAY, LONDON, N.**—Advanced class in photography is held every Tuesday from 7.30 to 9.30, from January 21 to May 1, 1908. The teacher is Mr. W. T. Wilkinson, who will deal with making enlarged negatives direct and from transparencies, retouching and working-up of enlarged negatives, and printing therefrom in carbon, gum-bichromate, and oil processes, photography in colours with Lumière autochrome plates, three-colour methods in carbon, pinatype and sinop. Orthochromatic photography will be dealt with on Saturday afternoons.

**A TREATISE ON THE CINEMATOGRAPH.**—We learn that a new work in German on the cinematograph will appear during the present month from the firm of our Dresden contemporary, "Die Photographische Industrie," the editor of which, Herr K. W. Wolf-Czapek, is its author. The new volume, which is to be entitled "Die Kinetographie," is the first German treatise on animated photography. It is to be issued at M2.50 (half-a-crown).

A CONTEMPORARY announces the publication of its thousandth number next week. No promise is made of a change in price but a number of novel features are to distinguish the issue.

**Special Announcement.**—The 2,488th number of the "B.J." will be issued on Friday next, January 10.

**PHOTOGRAPHY IN BRAZIL.**—The United States Consul-General at Rio de Janeiro has furnished his Government with a report, which has just reached London, on the trade situation as regards photography in all its branches in Brazil. He says that American cameras and accessories seem to be more prominent in the show-windows, and what advertising is done seems to be done more generally by houses having American photographic goods than by those selling the goods of any other country. But the returns of the trade do not bear out this assumption. Out of the 100,000 dollars worth of photographic appliances and accessories imported by Brazil last year, Germany sent about 37,000 dollars worth, France 32,550 dollars, Great Britain 22,010 dollars, and all other countries including the United States, about 11,500 dollars. This trade is apparently a matter of price. The superiority of American cameras for amateurs, for instance, is generally accepted, but the Americans are not offering the best goods for the least money. The general course of the photographic business seems to be similar to what it is elsewhere.

Amateur photography is not very popular, because it costs too much. Duties are high, and the original expense is high, and when to it are added high prices for supplies of every sort, it discourages the amusement. While there are many photographic concerns in Rio de Janeiro, in the entire city of something over 800,000 people there are only three houses catering to the amateur trade, and offering for sale the usual supply of local views. Galleries for portrait and similar work are fairly common and do fair work, but the best do not compare with the best in the United States. They seem to receive fair patronage and especially have calls for work at night in connection with social affairs. The concerns are not large, and the business in general would not be considered in the United States as a proper development of the industry in the community. Whether there is room for more aggressive work on the part of American photographers in Brazil is a question which only investigation by a practical photographer could dispose of with confidence. To a layman it looked as though there were an opportunity.

**THE NEW YEAR CARD** of Pirie Macdonald, photographer of men, of New York, is such a delicious piece of personal characterisation

that we cannot resist reproducing it. Mr. Macdonald, like other photographers of the States, has the genius for keeping people in a good temper when he comes on the stage. For a man who is in deadly earnest when such things as employment bureaux are under discussion, his fooling is quite admirable, and proof of his success is found in the fact that one can imagine no more welcome New Year greeting from him than the quaint caricature of himself, which is quite the Macdonald to be seen in the summer, kodak in hand, in Fleet Street and the London parks, enjoying a long vacation. Mr. Macdonald has now two New York studios, one in the city, and the other in the district answering to the London Bond Street, in both of which he photographs "men only."

**THE BOLT COURT STUDENTS' SUPPER.**—That most enjoyable function of the London County Council School of Photo-Engraving and Lithography, the annual supper and smoking concert, was held on Monday last, Mr. George Frampton, R.A., occupying the chair, supported by Messrs. A. J. Newton and Cecil Rea. The proceedings included the production of a new and original drama by Mr. F. E. Butler, entitled "The Nearer the Bone," pianoforte and violin musical selections, a recitation by Mr. Brewer, a large selection of songs by various gentlemen, a demonstration of the Black Art by Professor R. T. F. How, and a ventriloquial sketch by Mr. Val Cossy. Examples of the various kinds of work done by students in the school were on view, and the prizes for the year's work were presented to the fortunate recipients, Mr. A. J. Newton, the popular Principal of the School, receiving a most enthusiastic ovation as his share of the awards.

**FIRE AT ACTON.**—An outbreak of fire took place at Churchfield Road, Acton, last week, and resulted in loss and damage to premises occupied by Mr. Arthur Clempson, for photographic purposes.

**THE REMINGTON TYPEWRITER Co.** signalise the New Year by the issue of a most decorative wall calendar, bearing a reproduction of a painting by a New York artist of the typical Fifth Avenue girl. The Remington Co. also issue a tiny pocket diary for 1908.



To A. J. B.  
A Happy New Year  
Pirie Macdonald



## Correspondence.

\**We do not undertake responsibility for the opinions expressed by our correspondents.*

\**Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*

### CONDENSED MOISTURE ON LANTERN SLIDES.

To the Editors.

Gentlemen,—What Geo. Thorne really wants is to ventilate his lantern front—that is, allow a space of about one-sixteenth of an inch between the slide carrier and the wooden front carrying the condenser. I have done this by screwing four round-headed screws into the wooden front, so that when the slide carrier is in position it is resting against the heads of the screws. If the front of the lantern is made of metal he may glue four pieces of wood on to the carriers, one at each corner.

JNO. ROBSON.

26, Scotch Street, Carlisle.

December 28, 1907.

### PORTRAITURE WITH MERCURY-VAPOUR LAMPS.

To the Editors.

Gentlemen,—I am usually a man of my word, and in the ordinary way would have adhered to my statement that I could on no account continue this debate. Since, however, Mr. Girdlestone has thought himself free from criticism he has taken what might have been a good opportunity to cavil over certain minor statements I made in my article of your issue of November 22. As I think it is only fair to you, as being responsible for the publication of that article, that I should make it clear to the readers of the "B.J." that my statements are absolutely in order, I consider it best to deal straight from the shoulder with Mr. Girdlestone's remarks. Mr. Girdlestone asks what my provincial photographer wanted with eight arc lamps. Since this is asked in his characteristic sarcastic manner it is impossible to assume that the question arises from ignorance. But, on the other hand, Mr. Girdlestone acknowledges that he is an electrician and not a photographer, it will therefore be news to him that rapidity in exposure is not all that is to be desired in artificial lighting for portraiture. The provincial photographer I mentioned knows his business, and seeks diffusion and dispersion as well as rapidity. Mr. Girdlestone says that a No. 114 Westminster lamp takes 15 ampères, which is 3 units, and not 7, as I stated in my last letter. Well, let us see what Mr. Hewitt says about it in his article of March 2, 1906 ("B.J."). "The Westminster, No. 114, lamp takes 6 to 7 units per hour," and then "in the case of the installation for the photography at the Mansion House. . . . the lamp was burning for nearly seven hours, and 75 units were used, at 3½d. per unit." Ye gods! an average of 10½ units per hour. It is impossible that such a careful writer as Mr. Hewitt should make a mistake in both instances, for he goes on to work out the cost of each exposure made. Mr. Girdlestone can scarcely condemn these facts after referring your readers to Mr. Hewitt's articles on the Westminster lamps. Then, again, Mr. Girdlestone has thought fit to have these articles reprinted, and was good enough to send me one. Surely, when advertising any article of commerce, those who are advertising it place it in as favourable a light as possible. Why did Mr. Girdlestone have these statements reprinted if they were not correct? And why refer your readers to Mr. Hewitt's articles when he is the first deliberately to refute some of the statements contained therein? Mr. Girdlestone next finds fault with my remarks about the wiring necessary with the mercury-vapour lamps, and says that it is simply nonsense to leave a distance of 2 inches between the wires in order to prevent induction. Now, Sirs, is it possible that insulators are made for that purpose and fitted in all good installations, and are not necessary? I have not stated that I have any great knowledge of electricity, but I am just a little amused at the grandiloquent manner in which Mr. Girdlestone has endeavoured to argue that I am "incompetent," and that I have no knowledge of the subject. As you know, I have confined myself to facts, which in all cases were proven, and access was given to all authorities. I must therefore assume that I have fully justified all my original statements, and would like to draw the attention of your readers to the fact that I am not financially interested in the mercury-vapour lamps, whilst Mr. Girdlestone, in fighting the cause of the Westminster lamp, is applying his zeal to commercial interests, and probably this fact accounts in some manner for his excessive personalities. Mr. Girdlestone suggests that I should

confine myself to writing from personal experience. I have done this, and the reading of it has not been altogether pleasant for Mr. Girdlestone. An expression of regret is mentioned in his letter that he should have hurt my feelings. I can assure Mr. Girdlestone that my feelings have not suffered in any way. I have only been amused at the crude efforts made to discountenance other writers as well as myself. Mr. Girdlestone seems sound in theory, but his personal application is weak. And now that I have finally washed my hands of this subject allow me to wish you and the staff of the "B.J."—readers, of course, included—a Happy New Year.

162, Ellison Street, Hebburn-on-Tyne.

GEO. R. HENDERSON.

December 20, 1907.

To the Editors.

Gentlemen,—I have read the letters of Mr. Henderson and Mr. Girdlestone with very great interest, and as I have had the mercury-vapour lamp in use for some time my reason for writing is that I cannot let Mr. Girdlestone's remark (i.e.) "Which are no doubt excellent lamps, and will take portraits if you wait long enough, etc.," pass without comment. I might add that I work slightly different from Mr. Henderson, and the exposures I give vary from ½ sec. and never more than 3 sec. for 1-1 portraits with excellent results, and amongst my photographer friends of long standing the opinion is the same as mine that the mercury-vapour lamp is the coming light for portraiture, the only slight drawback is the colour it gives one (flesh a greenish tint), but even that has its consolations, as we are not so green as the light would have us appear.

To any photographer contemplating purchasing the light I should be pleased to give them my experience and forward them a few specimens if necessary.—I am, dear Sirs, yours faithfully,

38, High Street, Worcester.

F. WHALEY.

December 21, 1907.

### ARC LIGHTS FOR PHOTOGRAPHIC PRINTING.

To the Editors.

Gentlemen,—Seeing several articles on electric lamps in recent issues of the "B.J." (mercury-vapour and arc), I have thoroughly tested several of these, and should very much like to give the readers of the "B.J." the benefit of my experience. I wrote for particulars of every photographic electric lamp I could hear of. I tested the mercury-vapour lamp, and also several arc lamps, but none of these came up to my expectations for quick printing, noiseless working, and cheapness of current with the largest power of light. The lamps in some cases did not print quick enough, and so the cost of labour increased: others had to be stopped every two or three hours to cool down, and some were flickering and breaking nearly all the time of working. I then went to the Polytechnic, Regent Street, and by kind permission of Mr. Howard Farmer, tested all the lamps there, which so thoroughly satisfied me that I placed an order with the Westminster Engineering Co. for one of their lamps. I have had the lamp about six months, and it has given every satisfaction. I have on several occasions worked the lamp continually from 9 a.m. until 2 a.m. the next morning. I think this is a great test for any lamp. The prints I get average 70 to 150 or more per hour (half-plates). The cost of current per hour works out at about 6d. in this district (alternating current at 3½d. a unit). The light I get is exceedingly steady, and electricians say it is wonderful considering the current is alternating. Enclosed find two prints, one in three minutes and the other in five minutes, which is considerably over-printed. Where time is money, the arc lamp, in my consideration, is the best on the market and cheapest in the long run as compared with mercury-vapour. Before buying any lamp I think any reader should test a "Westminster" arc, and compare results with other lamps. If any reader requires any information, or can call at my address, I shall be pleased to give him all information, show him the lamp, and allow him to test it for himself.—Yours truly,

T. E. STAGG.

The Imperial Postcard and Printing Co.,

128, Bromley Road, Catford, London, S.E.

December 30, 1907.

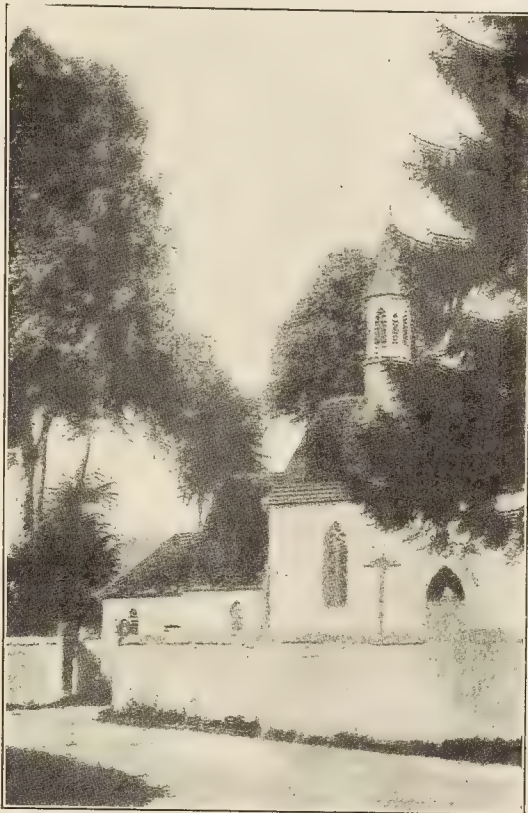
### THE TELEGRAPHIC TRANSMISSION OF PHOTOGRAPHS BY THE BELIN METHOD.

To the Editors.

Gentlemen,—With reference to the recent descriptions which have been given of the Belin telegraphic transmission of photographs, I beg to enclose a print which was obtained with an artificial circuit, representing a resistance of 4,000 ohms. Since this was taken, how-



ever, I have, on the 8th ult., transmitted the same subject over an actual circuit of 1,717 kilometres, running from Paris and back via Dijon, Macon, Lyons, Culle, Bordeaux, Angouleme and Poitiers.



The transmission of a plate size 13 x 18 cm., was performed in 22 minutes 3 seconds, the speed of the motor not being capable of acceleration beyond this limit. There is no doubt that the transmission can be made quicker still, and most probably in the next apparatus which I am about to construct the time may be reduced to five minutes for the transmission of a 13 x 18 print.—I am, yours very truly,  
EDOUARD BELIN.

#### THE DETERMINATION OF PINHOLE EXPOSURES.

To the Editors.

Gentlemen,—In a paper published in the "B.J." for June 22, 1906, I showed that pinhole exposures do not nearly conform to the law of inverse squares, which would demand a quadruple exposure when the plate distance is doubled. It seems to me therefore that the Watkins-Power empiric rule for pinhole exposures cannot give very precise results, seeing that it altogether ignores such deviations from the inverse square law. In the note on p. 944 of the "B.J. Almanac" the following sentence occurs: "In order to allow for the exposure in excess of the theoretical which is needed in pinhole photography." But is a general statement of this kind warranted? In the paper referred to I showed that the statement does hold when the source of illumination is a weak one, such as incandescent mantle light; but in later work not yet published I find that in bright sunlight—in the conditions under which pinholes are most frequently used—the pinhole exposure is considerably less than the theoretical when the plate is anywhere near the "best" distance, as laid down by Lord Rayleigh.

In his letter on pinhole aperture numbers in your issue of December 20, Mr. Watkins writes "of making an allowance of 50 per cent. for the 'law of error.'" What is this "law of error"? Surely the

existence of a law, properly so called, would preclude the necessity for making arbitrary allowances. Besides, the use of the term "law of error" in this connection is open to serious objection, seeing that the expression has already been allocated by general consent to physicists to an observed order in a class of phenomena with which pinhole exposures have nothing in common.—Yours faithfully,  
DOUGLAS CARNEGIE.

## Answers to Correspondents.

- \*.\* All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 2A, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.
- \*.\* Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.
- \*.\* Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & CO. 2A, Wellington Street, Strand, London, W.C.
- \*.\* For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 2A, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, &c. Two unmounted copies of each photograph must be sent with fee.

#### PHOTOGRAPHS REGISTERED:—

- G. Hynd, The Studio, High Street, King's Heath, Birmingham. Photographs of Head and Forepart of Collie Dog "Rillesley Bushman."
- J. Burlington Smith, The Studio, Darjeeling, India. Photograph, "Sunset at Kitchinjunga."

HUGH EDGSON.—We are much obliged to you for your reminder.

H. NOLAN.—Unfortunately, yes. It is one of those cases where newspaper printing is not sufficient.

TECHNICAL PHOTOGRAPHY.—Will you kindly state in your next issue what one is to understand the term "technical photography" to embrace, when used in such an instance as the advertisement of the L.C.C. for a photographer expert in this department?—W. L.

The term is commonly held to apply to all kinds of photography other than portraiture—that is to say, architectural photography, the copying of pictures or plans, the photography of furniture, lantern-slide making, and the making of prints of technical interest in contradistinction to those of, also, pictorial merit would come under the description.

HELIOS.—All we can say is that we regard all various compounds for this purpose with distrust. We advise you to try any which you intend using side by side with plain water and compare the results. It is not uncommon to find the water equally efficient.

STICKYBACK OUTFIT.—As a reader of your journal every week I would ask you the following:—What stickyback plant would you recommend, price of same, and any other particulars will be esteemed a favour? Also what light would be suitable? It is for the use of a professional photographer.—X. Y. Z.

The best advice we can give you is to refer to the lists of Jonathan Fallowfield, 146, Charing Cross Road, W.C.; the Billings Camera Works, Manchester, S.W.; or the Tress Company, Oxford Street, where you can see descriptions of the outfits. Incandescent gaslight is about the best form of lamp. The Tress Company have several patterns specially adapted for the work.

S. E.—There are no perfectly satisfactory formulæ—nothing equivalent to green carbon. You might try the carton made by the White Band Co., Croydon. The copper process is about the best for sepia tones. Formula, p. 825 of "Almanac."

STOPPING WAGES FOR HOLIDAYS.—We shall be exceedingly obliged if you will enlighten us on the following in the next number of the "Journal." Five of us are engaged in the above business myself as operator, and four young ladies in the printing and mounting. When Mr. — paid us on Saturday he deducted two days' wages from all of us, for Christmas Day and Boxing Day. On our protesting he replied that, as we were not working on those days, and they were not Sundays, we could not expect to be paid for them. We shall be glad of your opinion on the matter. I do not think our place is under the Factory Act, as there are no notices about the place.—FIVE EMPLOYEES.

The stoppages are quite illegal. The two days are statutory holidays, and you are entitled to full pay for them. You can



recover the wages for them in the County Court. The place certainly comes under the Factory Act, as there are four females employed in the work-rooms. Probably if you bring this reply to the notice of your employer he will pay up, and possibly be ashamed of his attempted shabby treatment.

**ROYAL ACADEMY.**—Kindly enlighten me in your next issue whether an artist, by exhibiting in the Royal Academy, becomes an R.A. If not, in what way could he become one?—D. KATZ.

No, decidedly not. R.A.'s—the number of whom is limited to forty—are elected by the Academicians themselves from the A.R.A.'s as vacancies occur. The only way to become a R.A. is to keep on exhibiting work, such as the members think entitle you to become an A.R.A.

**FLASHLIGHT PHOTOGRAPHS.**—I have seen photographs by flashlight of large halls and theatres crowded, looking almost sharp, near or far, as though a small diaphragm had been used; yet a large stop must have been used, or else the flashlight could not have been used; and, again, in some photographs by flashlight, the lighting seems pretty even, near or far. I am unable to get the same even in a moderate sized room, the lighting falls off very much into the distance when using the flashlight. Again, in church interiors and others, everything was sharp all over, both near and far, yet it is claimed that as large as U.S. 4 stop was used. Is that possible, as I cannot get that with my lens of the rectilinear style unless I stop down very much at the expense of the exposure? Can you explain?—C. P. (Penn, U.S.A.).

It is quite possible that the camera, in the instances to which you refer, was further from the foreground objects than on the subjects you have taken. If the buildings were large such was probably the case. Still,  $f/16$  is not an impossibly small aperture for flashlight work, and should give you sufficient definition over all the subject. Also the use of the swing back will assist in bringing the foreground into sharp focus without the need of a small aperture.

**DRYING POSTCARDS.**—I have finished a great quantity of bromide postcards (matt), and in every case they curl up with drying. I have tried various methods, but without success. As an old reader of your valuable journal will you favour me with a remedy?—ANXIOUS ONE.

Lay the cards face down on thin muslin, stretched on a frame, to dry. Messrs. Houghtons supply frames (with a special muslin) for the purpose.

**ENLARGER AS MAGIC LANTERN.**—I should be glad if you would help me. I have got a very good enlarging apparatus, very near like the sketch enclosed, but incandescent and iron back, 5in. condenser. Is it possible to convert same into a magic lantern for children's entertainments? How can it be done, and who would supply fittings and slides for same? Would it cost much for conversion? I have got other lenses that would fit if the ordinary enlarging lens would not do. I should be glad if you would help me. I am helping in the Band of Hope, and they would be delighted with it.—IGNORANT.

The lantern will answer well for a picture of small size, say, 6ft. or 10ft. diameter and if the lens is a portrait or other objective of, say,  $f/4$  aperture, otherwise the light will not be powerful enough for a brilliant picture. The only fitting necessary is the carrier, which any carpenter should be able to fix up for you, to allow of the 3½in. slides being pushed through along a groove. We should advise you to try a lantern slide on a 10ft. screen and see what result you get.

**MOUNTING IN ALBUM.**—I have a number of glazed P.O.P. prints, which I desire to mount in a book, the leaves of which are fairly thin. The prints are principally whole-plate size. Can you inform me as to the best mountant to use for this purpose?—E. C. P.

Undoubtedly the dry-mounting process, particulars of which you will find in our advertisement pages.

**FIXING BATH FOR BROMIDES.**—Will you kindly say in your valued columns if I could add a little potass. ferricyanide to my fixing bath, in order to do away with surface marks on bromides.—FRED JONES.

Certainly not; the ferricyanide will form Farmer's reducer, and will destroy the image. Better choose a paper less liable to markings and a developer specially compounded to avoid the markings. See the "B.J.," November 29.

**KALLITYPE.**—Would you kindly let me know through your journal (1) what is wrong with my method of making up Kallitype sensitiser, formula from "Ferric and Heliographic Processes"—viz.:

20 per cent. ferric oxalate .....	852 cc.
Silver nitrate .....	69 gm.
Water, to .....	1000 cc.

My first trials were completely successful, but on making up fresh sensitised a white precipitate is thrown down, about half an hour after adding silver nitrate. I have made up fresh 20 per cent. oxalate solution, and also purchased fresh sample of silver nitrate, and still the trouble occurs. Printing appears as usual, but on development I get a very poor flat image, as if there were very little or no silver present in the paper. (2) I should also like to know how long I may expect sensitiser to keep. (3) Also kindly recommend a really good book on chemistry that is likely to aid me.—ELAM D. WRATTEN.

(1) A little oxalic acid is sometimes necessary to keep the sensitiser clear. It is hardly possible that much, if any, of the silver has been thrown down, as that would mean a very copious curdy precipitate. If you will send an ounce or two of the turbid (shaken) sensitiser we could tell you better. (2) A month or more. (3) The best is "Eder's Handbuch," Band IV., Heft 13 (from W. Knapp, Halle a/S), in German. Next to it we can best refer you to Meldola's "Photographic Chemistry" (Longmans, 6s.).

**BARRY WEBSTER.**—1. We have no information on the matter. You might inquire of a Spanish paper, such as "Photos," edited by M. M. Leon Calle de Alfonso I., 19 Entresselo.

**O. A. (Chester).**—Our publishers do not undertake the sale of copyrights. In regard to your two queries, registration in England renders the photograph copyright in the countries subscribing to the Berne Convention, of which France is one. No further formalities are necessary, but as America is not a subscriber to the Berne Convention, it is necessary, to secure copyright in that country, that the negative should be made on American soil.

**X-RAY WORK.**—I am about to take up X-ray photography, and should be glad if you could advise me as to a text-book on the subject.—G. N. BIRKETT.

"Practical Radiography." By Isenthal and Ward. (Dawbarn and Ward.) 6s.

**STAMP (Redditch).**—Messrs. Christie, Manson, and Woods, 8, King Street, St. James', S.W.; Messrs. Puttick and Simpson, 47, Leicester Square, W.C.

**WET COLLODION.**—I have been trying to make a few slides by the wet collodion process, principally live subjects, but on fixing I find on some a slight deposit instead of clear glass. Is the bath too acid, or can I remove it (the stain) with a little solution of iodine? If so, what strength? Would 20 grains to loz. be too strong, and should it be followed by re-fixing?—G. P.

Without seeing one of the slides it is impossible for us to locate the cause of the fog. But it is very unlikely that it is due to the silver bath being too acid. It is more probable that it is not acid enough. If you read the series of articles on the wet collodion process, by Mr. E. W. Foxlee, that appeared in the "B.J." a few months back you will doubtless recognise the cause of your trouble. If not, send us an example. The iodine solution may be useful, but we should advise half the strength mentioned. After its use the plates should be flowed over with a very dilute solution of cyanide of potassium.

**CINEMATOGRAPH LENSES.**—1. Where could I get a good lens, and one of the largest diameter possible? 2. Is the "Darlot" cinematograph lens cylinder (2 5-64 in. diameter of tube) the largest in diameter you know of; or, if not, please mention other make?—URY.

1. It is strictly against our rule to recommend any particular maker's goods. All makers of photographic lenses supply cinematograph ones, with an aperture of about 2.2. Better get price lists from the different opticians. 2. We do not know the lens.

**HYPO-ELIMINATOR., ETC.**—1. Your article re hypo-eliminators. Do you include permanganate of potash? I have read that a few weak solutions are very rapid and effective eliminators for both prints and plates, etc., and if the colour test is a sufficient one I have in practice found that after a brief wash in plain water a few rinsings in weak solutions of the permanganate do very speedily remove the hypo, and apparently without injury to the

print, etc. 2. I make enlarged paper transparencies and negatives on thin, smooth bromide paper, as I can work them up and cannot retouch films and plates satisfactorily; but, using crayon pencils for the purpose, I find it difficult to get an even deposit of carbon (graphite?) where I want it, although I try and smooth over with a paper stump afterwards. On printing through the paper the parts worked up show up unevenly, due to the slight grain in the paper; I do not make it transparent. For small spots and straight lines it is all right, but for large patches which I want darkening in case of positives (or lightening in case of negatives—that is, when printed as a positive, using the paper negative) the result is too uneven, and the working consequently too apparent. Can you recommend something in powder form to be applied with a stump or other suitable article? Of course, I do not get quite the same sharp definition working this way as if I used plates or films for my enlarged transparencies and enlarged negatives, but as it is all so-called "pictorial" work, it is, I think, rather an advantage than otherwise. If there is any booklet on the subject will you kindly give me the reference?—**AEROGRAPH (Bray).**

1. Our remarks did not apply to permanganate. Used as you describe this is very effective, but sometimes it stains the film.  
2. Your crayon pencils are probably chalk, not graphite, and for your purpose ordinary graphite pencils would probably be much more effective. Where necessary, you could smooth down with a stump. The work requires great care, and you can only judge results by making trial prints.

**INTENSIFIER.**—1. In intensifying with the ordinary mercury-ammonia I have several times been unable to entirely blacken the plate in the ammonia. Can you give or suggest a reason for this? I may say I wash under running water for some few minutes, perhaps five, after bleaching and before putting in the ammonia, and use fairly strong ammonia bath. The fault I complain of is patches of white, presumably bleached portions of the negative, that will not blacken, even after the addition of more ammonia.  
2. Recently I was developing a very under-exposed snapshot in pyro-soda developer; the development had been going for the full time and little detail appeared, so by way of experiment I threw in the developer some strong ammonia and continued the development for some few minutes longer. I then put into hypo and did not turn up the light for fifteen or twenty minutes, when I was surprised to find my "negative" had been reversed, a positive picture being the result on the plate. Of course, there was chemical fog on the plate, but on holding the plate to the light one can trace excellent detail and contrast. Can you solve the problem of the reversal?—**REVERSAL.**

1. It is difficult to answer this definitely. Imperfect fixing or washing is probably the cause. 2. Probably due to extreme fogging. Exposure to light would have produced a reversal, and the addition of the ammonia very possibly produced a similar effect.

**MOUNT-CUTTING.**—Will you kindly give me instructions for cutting cut-out mounts, ovals, and circles for enlargements, or what tool it is done with?—**J. J.**

Space is much too limited in this column to permit of giving you such instruction as would be of really practical use. The tools most generally useful in mount-cutting are a mount-cutter's knife, a straight-edge, T-square, pair of compasses, and a three-foot rule. We should advise you to get the "Carver and Gilder's Guide." That will give you information on mount-cutting, frame-making, etc. It is published by Kent and Co., Paternoster Row, London, E.C. Its price is 2s. 6d.

**CRYSTOLEUM.**—Could you tell me the following, viz.:—1. The best place to get a good set of crystoleum painting materials from? 2. Does the glass for same cost much? 3. Is albumen paper the only paper one can use?—**D. M. M.**

1. The Alston Gallery, 52, New Bond Street, W. 2. See this firm's catalogue. 3. It is far preferable to any other, but a very thin bromide paper or P.O.P. may be used, though not with entire satisfaction, as the opaque baryta film interferes with the work and is liable to crack.

**W. SAYES.**—The most probable cause is exposure to actinic light (e.g., through an unsafe dark-room filter) during development.

**CARBON PROCESS.**—In sensitising carbon tissue I understand that a strong sensitiser reduces contrast and suits strong negatives, and a weak sensitiser increases contrast and suits weak negatives.

What is the effect of varying the time of immersion in the sensitising bath? Suppose Rotary Co.'s trichromatic films are sensitised in the same bath for one, two, and three minutes, what will be the difference in result?—**REVERSAL.**

You are quite right, a strongly sensitised tissue is most suitable for hard negatives, and a weakly sensitised one for soft ones. A longer or shorter time of immersion in the bichromate bath, to a great extent, is equivalent to employing a stronger or weaker solution. The Rotary Co.'s trichromatic films have a thinner gelatinous coating than ordinary carbon tissue, but the same holds good with them, though to a less extent, so far as the time of immersion is concerned.

**A. E. O.**—None, unless you can prove that the powder was useless for the purpose when purchased. It may have been allowed to become damp before you used it.

**W. F.**—The "Almanac" is obtainable only from retail dealers. If yours cannot supply you, you had better apply to a large London house. We will reply next week to your query.

**CHROME ALUM.**—I shall be very much obliged if you will assist me in the following matter:—I make a lot of negatives, which are subsequently stripped and reversed. A saturated solution of chrome alum is used as a hardening bath, the negative being allowed to stay in the solution for at least eight hours. The difficulty experienced is this, that with some qualities of chrome alum that we have sent us the chrome alum appears to contain an impurity of some sort, which attacks the silver image of the negative, and, besides reducing the negative in intensity, causes mottled marks and stains, rendering the negatives useless. Another example of alum from the same chemist works clean and without stains. With the alum that I suspect contains impurities I have used the simple solution (that is, I have dissolved it in water in an earthenware jar), and also have added ammonia to the solution, as recommended by Dr. Namias, I believe. The reduction of the image and production of stains occur the same in both cases. If you could tell us how to eliminate the impurity it would be of great service to us, as urgent work is often delayed by this annoyance. I perhaps ought to tell you that the negatives are not intensified or treated in any way previous to the hardening; they are well fixed and then washed for at least one hour in running water.—**IMPURITIES.**

Commercial chrome alum sometimes contains sulphuric acid, which can be removed either by shaking up the powdered chrome alum with alcohol and drawing off the latter on a filter, or can be neutralised by adding a little ammonia to the solution (until a slight precipitate is produced) and filtering.

**THE "PHOTO-SECESSION."**—A selection of fifty-eight drawings by M. Auguste Rodin will be exhibited at the Little Galleries of the "Photo-Seceession," 291, Fifth Avenue, New York, from January 2 to 21. These examples of the work of M. Rodin, which are now placed before the American public for the first time, have been specially selected for the purpose by himself and Mr. Steichen, and from their simplicity, and the fact of their being merely the notes of a sculptor for the sculpture which he is about to execute, will doubtless attract no small amount of attention and criticism.

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## SUMMARY.

Mr. Comley lectures this evening to the P.P.A. on "Colour Photography from a Professional Point of View." (P. 33.)

Next week's fixture in colour photography is the paper by Dr. C. E. K. Mees on "Screen-Plate Processes," at the Society of Arts on Wednesday. (P. 19.)

The winter exhibition of the Royal Academy contains among other classic works a good deal of portraiture by the old masters which may be profitably studied by photographers. Some notes on the portraits by Mr. F. C. Tilney appear on page 21.

A writer in the "Strand Magazine" has selected a particularly futile method of making a case for painted portraits as against those of the camera. (P. 19.)

At the Edinburgh Photographic Society a useful record of experience in photographing children was communicated by Mr. John Banks. (P. 22.)

Some publicity has been accorded the statement of an ex-lady-mayress to the effect that the only disagreeable moments of her year of office were spent in the cold studios of photographers. (P. 18.)

Bromoil, the oil process *via* bromide paper, was demonstrated by its originator, Mr. C. Welborne Piper, at the R.P.S. on Tuesday evening. (P. 32.)

"Photo Notes," formerly "The Bromide Monthly," is now published under the editorship of Mr. C. Welborne Piper. (P. 34.)

The effects of various methods of after-treatment of "carbograph" prints appears in the current "Photo Notes." (P. 30.)

An unexplained phenomenon in the drying of negatives with spirit—namely, the disappearance of the white deposit in water, is mentioned on page 17.

A recent paper by Mr. W. Foster Brigham gives a number of useful formulae and hints on the production of black tones on collodion P.O.P. (P. 20.)

Mr. David Powell, F.R.M.S., describes some accessories useful in the printing of small stereoscopic negatives. (P. 24.)

Mr. Douglas Carnegie, in a paper on relief illusions, explains one or two of the causes, photographic and visual, of such phenomena. (P. 25.)

Dr. W. Scheffer, in "Eder's Year-book," has given a general stereoscopic correction formula. (P. 23.)

## EX CATHEDRA.

**An Exhibition of Professional Photography.** As already referred to in our own pages, and announced in the quarterly "P.P.A. Circular," an exhibition of professional work by members of the Professional Photographers' Association will be held at the house of "The British Journal of Photography" from February 6 to March 7. The exhibition is a sequel to that held two years ago, but in the present instance the number of exhibitors will be less and the number of prints shown by each will be greater, thus permitting of a collection being brought together which better represents distinctive styles of modern professional portraiture. No charge is, of course, made to the exhibitors, and no awards are offered, or distinction made among those contributing to the exhibition. Those who have accepted the invitation to contribute prints will please notice that the last day for receiving them is January 24, and that they should be addressed to the Editors, "The British Journal of Photography," 24, Wellington Street, Strand, W.C.

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## Useful Awards at Exhibitions.

The Leicestershire Photographic Society, in connection with its forthcoming exhibition, is creating a precedent in the matter of the form which awards shall take that other committees and secretaries may copy. As the first award in each class is offered, not a medal or a plaque, but a casket, which latter, judging from the reproduction in the prospectus, may be conveniently used as a receptacle for articles of value. A lady exhibitor who is fortunate enough to stand first in favour with Mr. Horsley Hinton should prize the award none the less for the fact that it provides her with another repository for jewellery or articles de toilette, while it may equally serve as a cigarette case, or to fix the locale of collar-studs and such oddments. In the case of Leicester, the casket has the respectable dimensions of 7 by 3½ by 3 inches, and is wrought in bronze. While medals are to be given at all—and experience goes to show that a provincial exhibition cannot get along without them—there seems good reason for making a move in the direction of an award which is a compromise between the plaque of alleged art qualities and the tankards, rose-bowls, and cruets of the athletic sports prize-tent.

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## Methylated Spirit for Drying Negatives.

A writer in a contemporary states that opinions are divided as to the safety of drying negatives by methylated spirit, but "the objections all apply to some one else. One does not hear of really personal objections." We fear we must tell a different tale from this. Many per-

sonal objections have been brought before us, while our own experience proves that the objections have some substantial foundation. It is far safer to invest in a pint of rectified spirit, and use it economically by "drying" it with potassium carbonate after use than to trust to methylated spirit. One objection to the use of the cheaper spirit is that the results of any after-treatment of the negative, if such treatment prove to be necessary, are somewhat doubtful. A more serious objection is the appearance of a white opalescent film, apparently between the gelatine and the glass. If a negative is thoroughly soaked in methylated spirit and then dried before the fire, this film will quickly appear in the majority of cases. It is very commonly attributed to the collection of some of the foreign ingredients added to the spirit; but this idea is rendered very improbable by the fact that the film completely disappears if the negative is re-soaked in water and is then allowed to dry spontaneously. We have not seen any satisfactory explanation of the formation of this film, which seems to be one of the minor mysteries of photography, but it is certainly an effect that does not encourage us to trust to methylated spirit. It may be said that as the white film, as a rule, only appears when the negative is finally dried by heat, it is not of much consequence. Quick drying by heat is, however, one of the main advantages of using spirit. A spirit-soaked negative does not dry by any means so quickly as many suppose if heat is not used. It very soon appears dry, but this appearance is deceptive, and we have known many silver stains to be produced as the result of trusting to it.

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#### Discomfort In the Studio.

An ex-lady mayoress, interviewed in a northern paper a week or two ago, declared "that the only disagreeable moments of her year of office were spent in the presence of the photographer. She had learned to abhor the word 'photographer' in big type after having paid the penalty of the office of lady mayoress by repeatedly having to shiver and pose in frightfully cold studios." There being no reason to suppose that a lady mayoress, any more than any other person of importance, should be received by the photographer without regard to the comfort provided for every sitter, the confession becomes a reflection upon photographers in the district of the lady's residence. No special emphasis need be laid on the pronouncements of a lady mayoress over and above other ladies, but it is nevertheless advisable to remind our readers, as we have done many times in the past, of the extraordinary disregard of the habitual comforts of life which appears to prevail even in studios where one would never expect it. Warmth and fresh air simultaneously in a studio are not easy to assure at all times of the winter, but they are problems in a photographer's business which it is very necessary should be solved.

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#### The Importance of Testing Lenses.

Of late there have been numerous complaints of lenses that prove to be of smaller aperture than they are supposed to be. We see a complaint in a contemporary of a supposed  $f/8$  lens that proved to be  $f/11$ , and we have frequently met with similar instances, including cases of  $f/8$  lenses marked at a very much larger aperture, and of long-focus lenses marked down to a short focus. The demand for very cheap extra-rapid lenses is sure to lead to a supply of this doubtful nature sooner or later, and the variety of lenses now upon the market is so great that there are far more wrongly marked lenses about than many purchasers would be likely to suppose. In some cases a simple mistake has been made, and the aperture and focal length has been upset in the process of mounting the lens

in a diaphragm shutter. In other cases, we fear, there is no mistake at all, but in any case it is very desirable that all purchasers should be on the alert and test the aperture and focal length for themselves. If an error is found, the lens should be returned at once and without hesitation to the makers. Any firm with a reputation to sustain will gladly put things right, and will, indeed, prefer to do so rather than allow wrongly marked lenses with their name upon the mount to be in use. It is needful to remember that lenses are very commonly marked in "round" figures. In the case of focal length a variation of about one-eighth of an inch, more or less, may be expected, while as regards aperture a few decimals one way or the other are of small importance. When, however, the speed is over-stated by something like 50 per cent. and the focal length understated by 20 per cent. or so, no one should have the smallest hesitation in returning his purchase.

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#### Photography and the Druce Case.

Photography, which has figured so prominently in the sensational Druce case, was no less to the front in the famous Tichborne suit, some five and thirty years ago. In that case the evidence of experts figured largely with regard to pictures taken by the Daguerreotype process. Amongst these witnesses were our late friend, Mr. J. Traill Taylor, the late Colonel Stuart Wortley, and others. In the present case only paper pictures have been in question. But it is quite conceivable that, considering the period, Daguerreotypes of the Duke of Portland may be in existence. Early in the present case one of the counsel made the suggestion that prior to 1850 photographs were not made on paper. The statement, of course, was absurd, since photographs on paper were produced in 1840. In the middle forties a work, "The Pencil of Nature," illustrated by photographs, was published by Fox-Talbot, copies of which are still in existence. An impression seems also to prevail that prior to the publication of the collodion process glass negatives did not exist. That, again, is a fallacy. The albumen process on glass was published in 1848, and was soon afterwards used commercially. It was a slow process, and it is very improbable that it was really used for portraiture, though, worked with certain modifications, it was an exceedingly rapid one, equalling a rapid modern dry plate. For example, in June, 1851, Talbot, at the Royal Institution, succeeded in taking a negative of some printed matter, fixed on a rapidly revolving wheel, by the momentary light from the discharge of a Leyden battery, and the lettering was quite distinct. The photographic witnesses called in the Druce case up to the present have not said anything of their personal knowledge of the state of photography earlier than about 1860. But there are, no doubt, some still living who can speak from personal experience as to what existed long prior to that date with regard to photography on both paper and glass. Previous to 1853 there were no journals devoted exclusively to photography, though the art was largely practised then. In the evidence in the Druce case retouching was referred to, but up to about 1860, or later, retouching on the negative was practically unknown, and all that kind of work was done on the prints themselves, which, when that was done, were for the most part on plain salted paper. Prints on paper, whether from calotype or collodion negatives, were mostly of the half-plate or larger size up till about 1856; the smaller sizes, such as the quarter-plate, were comparatively rarely done. It was not till about 1859 that the C.D.V. was introduced, being, at first, intended to be used as visiting cards—hence their name. They had a great vogue during the early sixties.



## PORTRAITS, PHOTOGRAPHIC AND IMPRESSIONIST.

IN the current issue of the "Strand Magazine" we find painting and photography once more set against each other like fighting-cocks. It is difficult to see what advantage can result from this eternal pitting of courteous strangers against each other's throats. Painting and photography are not adversaries, and they *should* be help-meets. The article in question is illustrated with four special colour-printed pages, each showing a photograph and what purports to be an "impressionistic" rendering of the same subject by an "artist of reputation." In the first place, such comparisons are odious. In the second place, there is nothing in the slightest degree impressionistic in the non-photographic examples, which presumably have been copied freehand from photographs supplied.

Nowadays it seems to be the proper thing never to speak of painting or sketching in those terms: the fashionable word to use is "impression"—an unfortunate term which has become a synonym for every honest word that describes the work of the professional artist.

It is not too much to say that, on the whole, and if the examples given must indeed be pronounced upon, the actual photographs are preferable to the fancy heads that are supposed to have additional artistic qualities. To grant this, however, in no way stigmatises portrait painting, or even portrait copying. If a just comparison were really desired, the fair and only way to set about it would be to arrange sitters under circumstances exactly similar to both artist and photographer, giving each full rein from beginning to end. Even then the results would prove nothing; for the risks attaching to the choice of artist would be disproportionately greater than those of the other side.

If painting and photography, as methods, have to be compared at all, it is only fair to appeal to their best exponents, past and present. That being so, Mr. Wm. Crooke himself would stand no chance against Rembrandt or Reynolds. If objection is made to this argument on the ground of commercial possibilities; if the market price or availability is to be a factor, then your clever photographer will probably give more satisfaction than your average clever hand-worker where a likeness or bald iconography is the object. The two methods are not only the poles apart, they are positively different in essence.

Suppose the case of an ardent swain in his teens so over head and heels in love with his charmer as to be at the point of writing sonnets to her eyebrow; he will naturally prize anything that gives him exactly his own dear love's eyebrow or nose-tip, and the wretchedest photograph, pictorially, will delight him. A slight enlargement of the nose-tip, should it occur as anticipated in the "Strand" article, will elude his critical faculty, especially as love is blind. Cases of sentiment of this kind, whether they are concerned with lovers or mothers, usually put a premium upon the faithful records of the camera. But where it is a case of a presentation portrait to some "society," "lodge," or civic institution, no money spent upon a photograph, be it ever so much enlarged, ever so gorgeously framed, or ever so artfully tinted, will fit it for the occasion as a smart and clever painting would be fit, even by an impecunious but talented painter who would jump at £25 for the commission.

The four artists who supply the "impressions" to this article have each been interviewed upon the subject, and their remarks are sane, clear, and logical enough to prove that they have a proper and common-sense point of view. Their names are Penrhyn Stanlaws, Gilbert Holiday, W.

Christian Symonds, and Val Havers. All the photographs are by Bassano.

The writer of the article, whose command of matters photographic may be judged from his speaking of the "Royal Photographic Salon held recently at the New Gallery," considers that no summing up of the views of the four artists is necessary, adding: "Although the argument is illustrated and enforced in various ways, it has the same conclusion—the superiority of the brush or pencil over the camera in the representation of a man or woman. Whether the conclusion is justified by the comparative examples of art and photography here given, readers of the 'Strand Magazine' must judge for themselves." But surely this is only another way of saying that the artists' views are untrustworthy. The manager of Bassano's himself admits that "there is a great deal of truth in what they say," yet the editorial stigma is thus gratuitously thrown over their opinions. As a matter of fact, the writer of the article *does* sum the matter up, and that wrongly, for the deducible conclusion from the artists' remarks is by no means that a superiority of brush or pencil over the camera exists in the representation of a man or woman. What may be deduced is that there is a difference, not a superiority. The salient point, and one that might well have been elaborated, is that the photograph gives something that one would not go to a modern painter for, and that the painter gives something which is completely impossible to the camera. The camera gives with miraculous truth, of a kind, what it seizes in the pressing of a pneumatic bulb. Whatever that is may or may not be the sum of a sitter's personality. More often than not it is about as much of the whole thing as a single picture from a biograph series is, viewed separately. The artist, on the other hand, should, if he doesn't, give the whole incident; for he sees his sitter mentally as well as physically, and probably for many days, during which a whole series of separate images build up the complete view.

Of course, these theories find no demonstration in the aimless copies of camera pictures that serve as illustrations to the article. What the artists have done with more or less success is to alter little details of costume and proportion. The results are more pictorial and less like photographs of the conventional sort. Beyond that they show nothing. It is futile to expect readers of the magazine to judge from them whether they or the others succeed best in the representation of a man or woman. It is a foregone verdict that, as portraits, the drawings are hopelessly "out of it." But what is that to do with the bombastic and chimerical question advanced?

SCREEN-PLATE COLOUR PHOTOGRAPHY.—Next Wednesday's lecture at the Society of Arts, John Street, Adelphi, London, W.C., is likely to be one of the most notable occasions of the season among evenings devoted to colour photography. Dr. C. E. Kenneth Mees will lecture on "Screen-plate Processes of Colour Photography," and will, no doubt, deal very exhaustively with this new branch of colour work of which so much has been heard within the past six months. The Society of Arts is noted for its selection of a chairman appropriate to the subject of a discourse, and it may be expected that the presidency of the meeting on this occasion will be undertaken by Sir William Abney. As regards admission, Sir Henry Trueman-Wood, the Secretary of the Society of Arts, is always ready to send a card of admission to any applicant, and the forthcoming lecture may thus be attended by all those desirous of hearing what is certain to be a most interesting lecture on a most fascinating subject.

LEICESTER AND LEICESTERSHIRE PHOTOGRAPHIC SOCIETY.—At the exhibition, to be held from March 7 to March 14, 1908, there are seven open classes, one of which is devoted to colour photography, prints and transparencies. The first award in each class will be a bronze casket, bronze medals and diplomas also being placed at the disposal of the judge. Prospectuses and full particulars can be obtained from Mr. Lewis Ough, F.C.S., "Fernleigh," St. James Road, Leicester.

## BLACK TONES ON COLLODION PAPER.

[A Paper read at the Hackney Photographic Society on Tuesday last, January 7.]

THE collodion process differs from carbon and platinotype, in which the colours obtainable are practically fixed, inasmuch as several points must be taken into consideration as bearing upon the resulting tone. The preliminary washing must be thorough, and should preferably be performed upon untripped prints, the edges being liable to peel in the future stages.

Fifteen minutes may be taken to be the minimum period allowable for the removal of the free silver. In winter or with large batches the time may beneficially be extended to as much as half an hour. These precautions are necessary to ensure the removal, not only of the unaltered silver, but also to get rid of the preserving salts used in the paper, which, whilst doing their work so efficiently, apparently influence the subsequent toning to a marked degree.

A little saturated solution of borax placed in the last washing water but three will, however, be a preventive of stains due to grease on the emulsion, and also assist the gold toning to a slight extent. This borax must on no account whatever be used if the paper is to be toned in the chloroplatinite of potassium bath alone. We must say before going further that in our experience the rich, fine blacks so much desired cannot be obtained with this single bath. Some of the single-bath papers advertised come near it, but when the prints are compared with a really good black print, they are seen to be a brown- or green-black.

To some tastes these tones are not unpleasing, and may be preferred by a few, but with the single bath process we have nothing to do in this paper. It is a mistake to imagine that the two baths mean greater cost; certainly much longer time is required to tone properly, but we are inclined to think that the double bath means a saving of material. Firstly, the gold bath is very weak, and, secondly, less platinum has to be deposited to get a good colour upon a previously gold-toned print than upon the untuned emulsion. Considering that the price of chloroplatinite has increased nearly 200 per cent. in the last six months, this is a consideration.

Washed prints are immersed a few at a time in the following gold bath:—

Gold chloride .....	2 grains.
Borax (powdered) .....	2 ounces.
Water .....	40 ounces.

If this is made up before the first washing is commenced, it will be sufficiently ripened for use when wanted. Toning will take place rapidly at first, and must be watched closely, for upon this toning the final colour *entirely depends*. Experience alone will tell the exact colour wanted in this bath, slightly varying as it does with different brands of paper. A warm chocolate is the only indication we can give. Too little toning means brown or green blacks; too long, a blue black, almost as disagreeable.

We would again point out the importance of the thorough elimination of the free silver in the preliminary washing, for if any is present the gold will tone it and give a false colour to the print. Since this colour must, within narrow limits, be a certain shade to secure the correct black, it follows that when this free silver is finally dissolved in the hypo bath, the black will be defective.

The correct colour being reached, place the prints in clear water, changing once or twice if the toning is a large one whilst the other prints are being handled.

In the above formula a definite amount of borax is given, but it is decidedly advisable to alter the proportions of borax according to the behaviour of the prints, the exact amount depending largely upon the local water. The greater the amount of borax, the less loss of detail in the high-lights is the rule, but, carried too far, the resultant prints are muddy. The borax should be added as soon as any cutting away of high-light detail is notice-

able; for this reason flat-looking prints should be placed in the bath first, so that any clearing of the high-lights will act beneficially. The latitude in the quantity of borax allowable is rather wide, so that very little observation is necessary to get good results.

One must remember, however, that the double bath process requires a very much stronger negative than the single, and the paper should be printed very dark, judging by the high-lights, and entirely neglecting any bronzing of the shadows. Whilst a gelatino-chloride negative will do for the single bath, one of carbon quality gives the best results with the two baths, and is, indeed, essential for sparkling, clean effects. If the borax is used properly, all the detail obtainable in the high-lights will be retained in the finished print.

For ten minutes after the last print has been removed from the gold bath a thorough hand washing must be given. Since platinum will only tone in an acid solution, efficient removal of the alkaline gold means quicker and more economical toning in the platinum; moreover, the free gold would combine with platinum and so waste the bath.

The dilution of the platinum stock solution is immaterial. All prints can be toned together in a weak bath, or a few at a time may be toned in a strong one; in point of view of economy of the precious metal, either method is about equal. Although the contrary would at first sight appear to be the case, the latter method is the quicker of the two, with perhaps a slight advantage of colour.

The platinum stock is:—

Chloroplatinite of potash .....	15 grains.
Phosphoric acid .....	2½ drams.
Water .....	7½ ounces.

If it is preferred to tone a batch at once, this may be diluted to 60 ounces or more. We prefer the other method, however, and fill a 15 by 12 dish to the depth of half an inch with clear water. To this we add about an ounce of stock and proceed to re-tone the prints. As soon as the bath slows down a little, more stock is added as required. This method is very economical, as then, instead of toning a few very quickly and the remainder having to soak, the bath is continually kept at convenient strength.

After toning, half of the remaining solution should be filtered off into a stock bottle to be made up to bulk with water and platinum when next required. There is no difficulty about the tone in this bath. It being impossible to over-tone, it is only necessary to avoid under-toning. The print may be judged both by reflected and transmitted light, and must not have the slightest warmth in the shadows, but look black right through.

This ends the paper on black tones, but we cannot resist calling the reader's attention to the absolute necessity of thoroughly efficient washing after the platinum bath and before fixation. The minutest trace of acid solution in the hypo will probably lead to trouble. Hand-wash for at least twenty minutes, and in the last but two waters put a few ounces of saturated solution of borax, and also in hypo. Fix in hypo 3 ounces, water 20 ounces, for at least a quarter of an hour, and again well wash. Drying before cutting out must be done upon the best chemically pure blotting, or a clean sheet, and the mounted prints must be dried quickly and thoroughly before being stacked together.

We may say that the various papers on the market differ slightly with regard to the quality of the tone obtainable, but the formula and directions suit all papers we have tried. A bad black will most probably be due to a weak negative or improper use of the gold bath. A few trials should soon prove the proper colour to get in that bath, remembering that too short toning gives brown blacks and too long blue blacks.

W. FOSTER BRIGHAM.



## PORTRAITS AT THE ROYAL ACADEMY WINTER EXHIBITION.

THE thirty-ninth exhibition of Old Masters at Burlington House is not more interesting than usual, but it is remarkable for a fine collection of Hogarths. To many who know Hogarth by doubtful reproductions of his "rakes," his "harlots," and "apprentices," he is a satirical humourist of bad draughtsman-ship and an uncommon bent towards caricature. It will be a surprise to all such to come face to face with the two large and magnificent pictures lent respectively by the Countess of Ilchester and the Earl of Normanton. The fact is that Hogarth's reputation has suffered badly at the hands of careless engravers. He was no doubt careless himself at times, when his theme absorbed him and his energies were focussed upon the spirit rather than the letter of his work. This is distinctly apparent in the three sketches for Hudibras subjects shown here. Yet that Hogarth was not only a painstaking draughtsman, but a powerful and masterly one also, the two interiors already referred to furnish memorable evidence. They are crowded with figures, and composed with the finest pictorial skill. The National Gallery Hogarths, with the exception of the redoubtable "Shrimp Girl," do not show this "grand master" side of his genius. The figures in the Earl of Normanton's "Graham Family" are of large scale, and comprise a boy, two girls, a baby, and a cat. The expressions of each, even to the cat, is a marvel of spontaneity and convincing liveliness. The boy is especially large in style and design, reminding one of the boys of Murillo and Hals, and not entirely to the advantage of those great men. The other work represents a company of distinguished persons watching a performance of a play. All the figures are portraits. "The Children of the 4th Duke of Devonshire" is another delightful group, out of doors in this case. Little Lady Cavendish is in a swing; three little male Cavendish's and a dog complete a group which again bears witness to Hogarth's mastery of action and facile designing.

The actress "Polly Peachum" is here in her proper title of Lavinia Fenton, Duchess of Bolton—a delightful portrait. Better still is the "Peg Woffington," the beautiful actress who was struck with paralysis on the stage, at the age of 37. The glorious colour of this portrait is truly Venetian. Indeed, all the pictures mentioned so far have fine colour, which, perhaps, culminates in the beautiful "Peg."

As to the social-satire works, the most irresistibly amusing is "A Woman Swearing a Child to a Respectable Citizen." The protestations of the victim to this adventitious paternity are droll in the extreme.

### Ancient and Modern Portraiture.

In the same room are a few remarkable works by Johann Zoffany, R.A., a painter of whom the man in the street is usually and excusably ignorant. To know how great and talented was Zoffany (1733-1810) the visitor need only glance at the portrait of Dr. T. Hanson. If he were to go to the New English Art Club and contemplate the most *New*, he would see amongst many things resembling this that a century has made no difference whatever to ideas in portrait painting. Dr. Hanson sits in a chair under some trees, in the shade; to the left, behind him, is a peep of landscape disclosed by a finely designed group of trees. The breadth and largeness of treatment, the simplicity of intention, the calm realism hand in hand with the finest victorial fancy, makes this quiet little gem of as much value and interest as any modern thing of similar kind with a hundred years to the good. It is because modern art so constantly harks back and imitates, that occasionally the real old things strike one as modern in appearance. Certainly we have quite come round again to the methods of Zoffany's "Lady and Gentleman";

small full-length figures in a landscape setting, a charmingly sincere work which all who are really interested in the progress of art should take note of.

### Gainsborough and Reynolds.

Mention should be made of the highly interesting Gainsborough, which is as little like the Gainsboroughs one is used to as anything could be. It is a small group of portraits of the "Pitt Family"; five persons, who stand and sit in a garden near a fine house of classical architecture. The picture is five feet by four, although the figures are small proportionately; but they are so well designed with accessories of landscape and buildings that the whole thing has an air of the grand decorative style. This is intensified by a warm, deep, and rather flat scheme of colouring.

Another group of pictures interesting to readers of the "B. J." will be the wall-full of Reynolds's in the long gallery. They may be recommended as studies in effective arrangement, particularly No. 145, "Lady Elizabeth Herbert and her Son." Dressed in white, she sits with a brown scarf over her shoulders, whilst her little naked son squats at her feet. He is a charming little figure, who reaches up his hand to caress his mother's chin. The draperies covering her lower limbs are thrown into shadow, so that the interest may be well centralised. Another delightful design is seen in the posing of "Lady Francis Scott and her Brothers." A beautiful line has been secured by making the little girl give her left hand to one of her boys. Her figure tells dark against a sky background at some parts. The work is exquisite both in planning and colour, and the losing and finding of contours is a valuable lesson to whomsoever can learn. In this latter respect, the mantle of Rembrandt sits well upon Sir Joshua's shoulders in the delightful "Miss Orby Hunter," and the treatment of contours and retiring planes may be traced in other works, of which space forbids further mention.

Some choice Romneys are also of great value educationally, that of "The Countess of Westmorland" especially, who leans with crossed arms upon a pedestal. Her dress makes a fine arrangement of folds where it is caught by the disposition of the lower limbs. The whole work is harmonious in lines and arrangement, and superior in many ways to another Romney, "Miss Rodbard," which, however, has been accorded the place of honour upon the end wall.

A portrait of Rembrandt's own son, called "Portrait of a Man" in the catalogue, is a lovely harmony in browns. The youth's handsome face, dark curls, large picturesque hat of soft black material, and the jewelled collar round his neck, are items in a luscious piece of character painting, which none the less had art for art's sake as its chief instigation.

In the first room there are four small works by unknown Flemish artists which possess the lively strength and realism for which their school is famous. These portraits are of about the scale photographers usually employ, and roughly speaking, they are about 7 by 5 inches. Nevertheless, they are frankly set down and largely conceived, in spite of their detail. A magnificent Moroni represents "Vincenzo Guarino." It is a head only, but one of those astoundingly perfect productions which excite the admiration of those few people who run after "old masters."

A parting criticism may be allowed to close this unworthy notice. No. 64, "A Cavalier Drinking," shows that its painter, Jan le Ducq, had stumbled over colour and tone values. The cavalier is a finely painted little figure in an interior, where the light catches the edges of his handsome costume with what professional photographers know, ridiculously enough, as a "Rem-

"brandt" effect. All the near planes are in rich dark tone, except the bright red leather high boots. These the artist could not bring himself to degrade by shadow deep enough for

the occasion—a curious case of a painter, evidently accomplished, being obsessed by the beauty of local colour to the point of tone-blindness.

F. C. TILNEY.

## PHOTOGRAPHING CHILDREN.

[Lecturing recently before the Edinburgh Photographic Society, Mr. John Banks dealt with many of the minor points which contribute to success in this branch of professional portraiture. The following abstract of the paper is reprinted from the current "Transactions of the Edinburgh Photographic Society."—Eds. "B.J."]

WITH regard to the mechanical part, it is, of course, necessary to have a lens working at a large aperture, quick plates and a shutter which responds readily. The one I favour is the Watson shutter with pneumatic action working behind the camera. The camera stand should also be capable of use at a low level, and with a note that the whole instrument should be easily handled we may take leave of the more mechanical part.

If any photographer was asked to name the qualities necessary to success in the photographing of children, he would probably reply, "Patience and adaptability." The first question which presents itself is, "How many of the family should be admitted into the studio?" With a baby, of course, you require somebody. I prefer to have the mother and the nurse (or aunt) on all occasions. Fathers are better kept out; they are too forceful, and force is absolutely useless when dealing photographically with children.

I also take exception to the bringing of children to be photographed who "havn't got their forenoon sleep." With fractious children, or shy children, or even stubborn children, the photographer is content to wait, but when the forces of nature are defied the case is entirely different. With regard to babies, little can be said except that they have to be taken with as much of the head shown as possible, and I prefer to cut out, if allowed a few square feet of that embroidered garment which seems so necessary to the existence of these little angels. In the case of very fractious children the exposure is often made in the surprise of the withdrawal of that invaluable article of india-rubber (used, among other things, to prevent it sucking its thumbs), and just before the squall which necessitates its replacement.

### Humouring the Baby.

Children who are just walking should have their own way for a bit; some children require to be rushed, but these are few; one generally finds that there is a faint glimmering in the child's mind, taking more shape as the child grows older, that there is something unusual going on, and you have to allow them to get over this, or at least to feel that this something is not evil; afterwards they are more pliable.

I have played with a child for about ten minutes before photographing it. In the case of shy children I have played with a toy without regard to the child till it got interested. I have let it have the whole "bag of tricks," and taken them away one by one; but the best way is not to let the child see any toys until you are quite ready. Get the camera and the background ready, a chair for the child to rest on, focus, and then attract its attention. Good pictures can also be obtained on the floor, the difficulty here being that the child always wants to get up, and there is no point of rest in this movement. The inventive faculty of the photographer, too, has to be called in. He must be able to use different methods of attraction, and be a bit of a quick-change artist at the same time; and here I may say that a photographer who is not able to get down on his knees to a child is not likely to be of much use.

### The Modern Child

Coming now to older children who have full use of their limbs, and whose intelligence is a quantity to be reckoned with. The

old story of the bird who is supposed to live inside the camera, and who will shortly appear out of the lens, is no use. I have a recollection that I once believed that myself, but the child of the period is very much wiser. If he does not ask you questions about the action of light on the bromide of silver emulsion on the plate, he may certainly come out with something you as little expect.

If I was asked whether I found boys or girls the more difficult to deal with, I am sorry to say I would have to reply, boys; and the boy who has just begun to go to school is much the worst specimen photographically. He is often too big for his size, and often does not want to be photographed. He is beginning to be "tired," a state of things which seems to occur much earlier than it used to. Anglo-Indian children, too, are difficult to manage; they are so much accustomed to service, almost from their cradles, that they are less under control; but it is, perhaps, with the child that "doesn't want to" that the photographer has his most unsuccessful and least interesting experiences. With the lively child the case is entirely different, and when the photographer is successful the pictures are very pleasing.

### Good and Bad Grouping of Children.

In the case of groups where one may find a combination of many qualities the photographer approaches his work with expectation, and if the day be a gloomy one, also with a vision of something attempted nothing done, and a dozen plates wasted. This latter does not always happen, however, for the photographer does not often care to disappoint his customer, and does his best so that some wonderful results have been got even in a bad light.

A difficult combination is baby first, then a group of the children, and last of all the family group; for once you tire a child the best thing is to ask the mother to bring it back another day.

In group work the rule of attracting the attention just at the moment of readiness applies. Children should be photographed as naturally as possible. It is a little difficult to avoid the evidence of the studio, but the evidence of the camera should be kept out of the picture. The attraction should be all from the one place, and should, as a rule, be left to the photographer. The methods of the nursery or the home do not apply. While the mother does not usually give trouble, the nurse is often more difficult to quell.

Altogether work in the studio is exceedingly interesting and instructive, and many an insight into budding human nature is obtained, and many a lesson learned by the photographer in the ordinary work of a photographic studio. It teaches one patience and tolerance, and although it may also constitute one of life's little worries, one has always the satisfaction of knowing that, after all, all earnest work contains these, and it is along these lines that success lies.

### Portraits of Children at Home and Out-of-Doors.

While the studio and the professional photographer will always be called in for the production of the portraits of children, there are many pictures which are not made, and which it is not possible to bring the camera to, simply because they are the



product of ordinary everyday or holiday life; they happen, and if the camera is not there these pictures are lost. In the back garden, in the country, or at the seaside, pictures arrange themselves, and the man with the camera at hand can secure them. I do not admire the photographs we sometimes see of the child posed front on in the garden seat with neither lighting nor anything else to distinguish it. Such "pictures" please no one but perhaps the perpetrator himself; but there are unposed pictures happening every day which no one but the man on the spot can obtain, and which the professional photographer does not and cannot attempt, except as a hobby. It is in this field that the amateur might, and does, prove himself useful. Few can paint,

but many can say when a picture is pleasing, and there is no effort beyond this latter but the securing of the picture when it offers. Posing would destroy it. It may be said that I am arguing against my own profession, but I cannot think so. We find few professionals who, if they make photography a hobby at all, take up portrait work outside their own professional sphere.

I may say in closing that the photographing of children, in the effort, the skill necessary, and in the result obtained, is to the professional one of the most interesting and pleasurable branches of his work; and to the amateur, a hobby in which he will find ample reward.

JOHN BANKS.

## A GENERALLY APPLICABLE STEREOSCOPIC CORRECTION FORMULA.

(A paper in "Eder's Jahrbuch.")

In my researches on the connection between stereoscopic taking and viewing apparatus I arrived at the following formula, given in my book "Anleitung zur Stereoskopie":—

$$\frac{o}{b} = \frac{w}{s}$$

Where

$o$  = the separation of the lenses.

$b$  = the distance of image (back focus).

$f$  = the focal length of the lenses.

$w$  = the distance between the eyes of the observer.

$s$  = the focal length of the stereoscope lenses.

It is assumed that the observer has normal vision, or that spectacles enable him to see distant objects sharply.

This correction formula applies only when the difference between the back focus  $b$  and the focus  $f$  is small, as is generally the case. The more complete formula, which applies to all cases, is

$$\frac{o}{b} = \frac{b^2}{f^2} - \frac{w}{s}$$

Hence

$$\frac{o\delta}{f^2} = \frac{w}{s} \quad \& \quad o = \frac{wf^2}{s\delta}$$

For ordinary work the factor  $\frac{6^2}{f^2}$  may be neglected. In

taking near objects, however, it cannot be disregarded. The foundation and proof of this new formula will be given elsewhere, but here I will deal only with its practical import. An example will best make this clear. Required:  $o$  the separation of the lenses. Let us assume the focus to be 60 mm.; the image distance to be 300 mm.; the focus of the lenses of the stereoscope 120 mm.; the interocular distance of the observer

65 mm. According to the formula  $o = \frac{wf^2}{b.s}$  we have  $o = \frac{65 \times 60^2}{300 \times 120}$ , therefore  $o = 6.5$  mm.

The separation of the lenses is in this case 6.5 mm. With this the distance of the object  $a = 75$  mm. according to the formula

$$a = \frac{bf}{b-f} = \frac{300 \times 60}{300 - 60} = 75 \text{ mm.}$$

According to Fig. 1

$$\frac{x}{a+b} = \frac{\frac{1}{2}a}{a}, \quad x = \frac{\frac{1}{2}a(a+b)}{a}, \quad x = \frac{\frac{1}{2}(300+75)}{2}$$

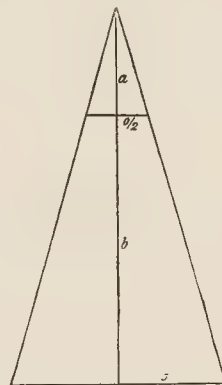
thus  $x = 16$  mm. This means that in this case the two images must partly overlap on the ground glass or the negative, if the radius of the separate pictures is more than 16 mm. When this is the case, two separate exposures must be made on two plates

one after the other. There is, of course, nothing then to prevent us from using one lens which is shifted sideways for the two operations.

The next question is the possibility of obtaining with two lenses correct stereographs for a given stereoscope. Let  $s$ , the focal length of the stereoscope lenses, be 120 mm., as above. In the following table are given the separation of the lenses and the distance between the centres of the two pictures for different enlargements and foci:  $n$  is the times of enlargement,  $f$  the focal length of the taking lens,  $o$  the separation of the same,  $m$  the separation of the centres of the two pictures on the negative. By this last phrase is meant the distance between the images of two sharply focussed points lying in the middle of the field of the object.

	$f=30$ m.	60 mm.	120 mm.
$n=1$	$\begin{cases} o=8 \text{ mm.} \\ m=16 \text{ ,,} \end{cases}$	$\begin{cases} 16 \text{ ,,} \\ 32 \text{ ,,} \end{cases}$	$\begin{cases} 32 \text{ ,,} \\ 64 \text{ ,,} \end{cases}$
$n=3$	$\begin{cases} o=4 \text{ ,,} \\ m=16 \text{ ,,} \end{cases}$	$\begin{cases} 8 \text{ ,,} \\ 32 \text{ ,,} \end{cases}$	$\begin{cases} 16 \text{ ,,} \\ 64 \text{ ,,} \end{cases}$
$n=9$	$\begin{cases} o=1.6 \text{ ,,} \\ m=16 \text{ ,,} \end{cases}$	$\begin{cases} 3.2 \text{ ,,} \\ 32 \text{ ,,} \end{cases}$	$\begin{cases} 6.4 \text{ ,,} \\ 64 \text{ ,,} \end{cases}$

From this table the remarkable fact will be noticed that for one and the same focus  $m$  is constant for all enlargements. We



have, for instance, with  $f = 120$  mm.,  $m = 64$  mm.; this means that with lenses of 120 mm.  $f$  with a distance of separation of 32 mm. we can take objects in their natural size, which will appear real in the given stereoscope. A separation of 32 mm. may be quite possible with lenses of  $f = 120$  mm. With greater enlargement the calculated separation of the lenses is so small that it is not practicable with two lenses side by side. In this case one lens must be shifted. Since  $m$  is the same for all en-

largements, assuming that a lens of the same focus is used throughout, it is necessary only to measure on the ground glass the shift of a sharply focussed point left or right from the middle, or to mark the distance on the ground glass. Further, it is noteworthy that  $m$  is directly proportional to the focus.

When we examine the curve according to which  $o$  alters as  $b$  alters, we find from the above formula

$$o = \frac{mf^2}{b \cdot s},$$

that  $o$  and  $b$  are indirectly proportional to one another. From this it is obvious that a simple mechanism can control simultaneously the back focus and separation of the lenses.

The formula here given gives the possibility of obtaining correct micro-stereographs under any desired conditions. Their use is extremely simple on the above-mentioned grounds.

Naturally, when the pictures are examined, the condition must be fulfilled that the point of intersection of the optical axis of the taking lens (or of the taking lens in the two positions) must be at the same distance from the picture plane as the optical area of the stereoscope lenses.

In conclusion I may mention that experiments by Professor Dr. Elschnig in the laboratory of Herr Hugo Hinterberger have practically confirmed my formula, the objects being taken of natural size.

The correction formula naturally only applies to the distant objects when they appear solid in consequence of parallax. Objects which are beyond this limit from the taking lens have no perceptible parallax, and the observation of such distant objects, free from parallax, takes place naturally according to the ordinary laws of perspective. If, for instance, we take stereoscopically a landscape with very long focus lenses and on a base calculated from the formula, and if we examine the stereographs with a short focus stereoscope, as required by my formula, then the objects will appear geometrically similar as regards actual corporal impressions, but will appear in other places, assuming that one actually examines the pictures at the place where they were taken.

The distance—that is to say, all lying beyond corporal perception; that is, physiologically space perception in consequence of parallax—will be seen according to the laws of ordinary perspective. In the experiment here described the distance will appear proportionately nearer and larger than in nature.

I will also add that stereograms taken with a lens separation differing from the interpupillary distance will show an enlargement or reduction of the projected images. This law runs:—The enlargement of the dimensions and the distance of the subject is equal to the quotient of the pupillary distance and the lens separation. This law has been mathematically worked out in my book.

DR. W. SCHEFFER.

## THE PREPARATION OF SMALL STEREOSCOPIC NEGATIVES FOR PRINTING.

ONE of the greatest difficulties met with by the beginner in small stereoscopic work is the adjustment of the halves of the negative for printing.

Various methods are recommended and apparatus sold for the purpose, but the chief object of these appears to be merely to facilitate the transposition of the halves of the photograph. One kind of frame on the market is devised for printing without cutting the negative. It consists of a long shaped frame with an aperture in the centre by which the light is admitted through one end of the negative to the opposite end of the transparency plate: one exposure being made for the first and another for the second half of the photograph. For cut negatives a frame is provided having rectangular recesses into which the transposed halves of the negative are dropped, the transparency plate being placed behind them and the positive made with one exposure.

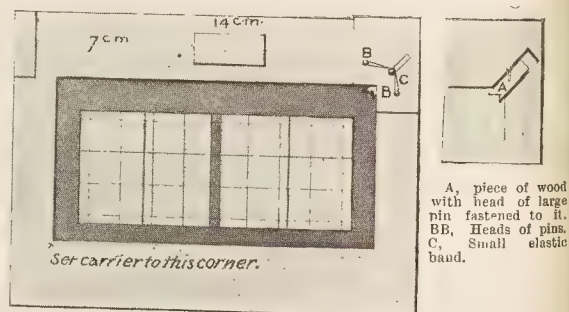
In neither of these methods is provision made for the correct adjustment of the pictures on the halves. In full-sized stereoscopic photography care may be taken to arrange the two pictures on the focussing screen of the camera so that they correspond as regards horizontal and vertical lines; but with small cameras, whether used by hand or on a stand, it is practically impossible, for several reasons, to ensure both pictures being alike in these respects, and it becomes necessary that the error should be corrected by the adjustment of the halves of the negative before printing.

It is true that the before-mentioned methods of printing may give correct optical presentment in the stereoscope, but there is little satisfaction in the ability to see the photograph without strain if the picture is tilted at an angle, as is almost invariably the case by their use.

For some time I worked with a frame having a carrier with two overlapping circular recesses which permitted of the halves of the negative being rotated into similar position: but the difficulty of effecting their adjustment with even approximate exactness in the dark-room, and the liability to movement of the

two halves before the completion of the loading of the printing frame, involved the expenditure of so much time and trouble that it was with a sense of great relief that I evolved the following system of permanent adjustment.

The size of my negative is 6 by 13 cm., and I require to make transparencies for use in the Gaumont "stereodrome." I procured from Fallowfield's a quantity of the best lantern slide cover glass cut exactly to 7 by 14 cm., to serve as carriers for the negatives. In the centre of a sheet of cardboard 13 by 18 cm.



The fine ruling on the screen is omitted.

Fig. 1.

I cut a hole 73 by 143 mm., and to the back of it I firmly attached a transparent ruled focussing screen (cost ninepence) by means of Sanger-Shepherd's broad binding strips, so that the ruled lines ran true with the edges of the aperture (Fig. 1). With binding strips attached to the back of the screen, I blocked out all of the screen with the exception of two apertures which correspond exactly to those parts of the transparency which are seen in the stereoscope. To serve as guiding lines to the required separation between corresponding points in the halves of the nega-



tive I attached a narrow strip of red paper vertically down each aperture. At the top right-hand corner I made a spring clip, as shown in the diagram, and along the top I fastened two pieces of cardboard, forming spaces to act as gauges for the size of the 7 by 14 cm. glass carriers in order to ensure their fitting into the printing frame.

To mount the negative I place a glass carrier in the recess of the template, thus constructed, against the screen, so that the spring clip at the top right-hand corner sets it firmly into the bottom left-hand corner. I put a small spot of Seccotine on each corner of the glass side of each half of the negative, and, laying the halves, transposed, on the carrier, bring them into the most accurate adjustment by means of the lines on the

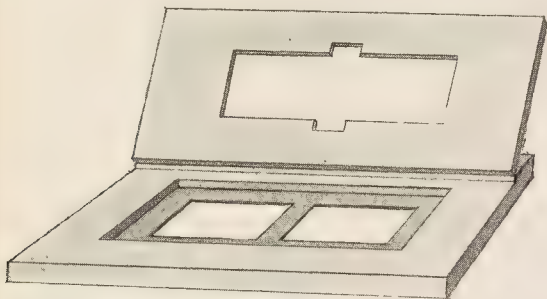


Fig. 2.

screen viewed through them. As the thickness of the glass of negatives frequently varies at their original extremities, which are now brought together, it is necessary to see that the halves lie flush: if they do not, they should be made level by inserting a small piece of black binding paper between the lower negative and the glass carrier. For applying the Seccotine it will be found convenient to use a large pin about three inches in length stuck firmly through a wide cork so that it will stand upright. The pin can be kept inserted in the tube of Seccotine through a small hole bored through the cap. Great care must be taken to prevent fine threads of Seccotine falling on the negative. Should for any reason the mounting be unsatisfactory, the negative can be detached from the carrier by care

fully applying a little water with a paint brush to the carrier at the edges of the negative, when the water will be drawn between the glass surfaces by capillary attraction, and the Seccotine presently dissolved without any injury to the film.

When the Seccotine is set the negative is ready for retouching: and I may mention here that it is well worth while to examine the negative in the stereoscope for faults which otherwise may escape the eye. Retouching is best done with water colour and a fine brush, with the aid of a magnifying glass. After retouching, the negative is ready for printing from at any time without further trouble.

The printing frame is the next object of attention. The box form with hinged bars is necessary, and a wooden carrier, of sufficient depth to allow a thin blackened cardboard mask as well as the glass carrier with the super-imposed negative to lie flush with its surface, is required. The mask has two apertures corresponding with those in the template, but a shade larger; and is so adjusted in the wooden carrier that when the glass carrier is set well into the bottom left-hand corner of the wooden carrier the same pictures are seen as were visible when it was in the template.

To the top side of the wooden carrier a sheet of blackened cardboard, with an aperture very slightly larger than the size of the transparency plate, namely 6 by 13 cm., is attached by a linen or tape hinge, and so arranged that, when lying down over the negative, the transparency plate, dropped into its aperture, is truly placed to receive the image from the negative. This hinged carrier must, of course, be of less thickness than the transparency plate, otherwise the latter will not receive the pressure from the back of the printing frame.

The resultant transparency will have two pictures neatly surrounded by clear margins, one of which may be utilised for the inscription of the title of the photograph.

In the foregoing I have described my own apparatus, but the details given should enable any one to construct similar apparatus for his own requirements.

If printing is effected by artificial light, it is necessary to employ a ground glass screen of, say, 12 by 15 inches in size at a distance of 6 or 8 inches from the printing frame, in order to diffuse the light: otherwise dust or minute imperfections in the glass of carrier or negative will appear as clear marks in the transparency and entirely spoil its perfection.

DAVID POWELL, F.R.M.S.

## SOME OBSERVATIONS ON ILLUSIONS IN RELIEF—VISUAL AND PHOTOGRAPHIC.

In letter V of his book on "Natural Magic," Sir David Brewster states that illusions bearing on relief were first made the subject of investigation at one of the early meetings of the Royal Society "when one of the members, in looking at a guinea through a microscope, was surprised to see the head upon the coin depressed, while other members could only see it embossed as it really was." No mention is made in this letter of those relief illusions, more or less familiar nowadays, which are produced in the case of what Von Rohr classifies as "instruments for objective use," such as the camera and the projection lantern.

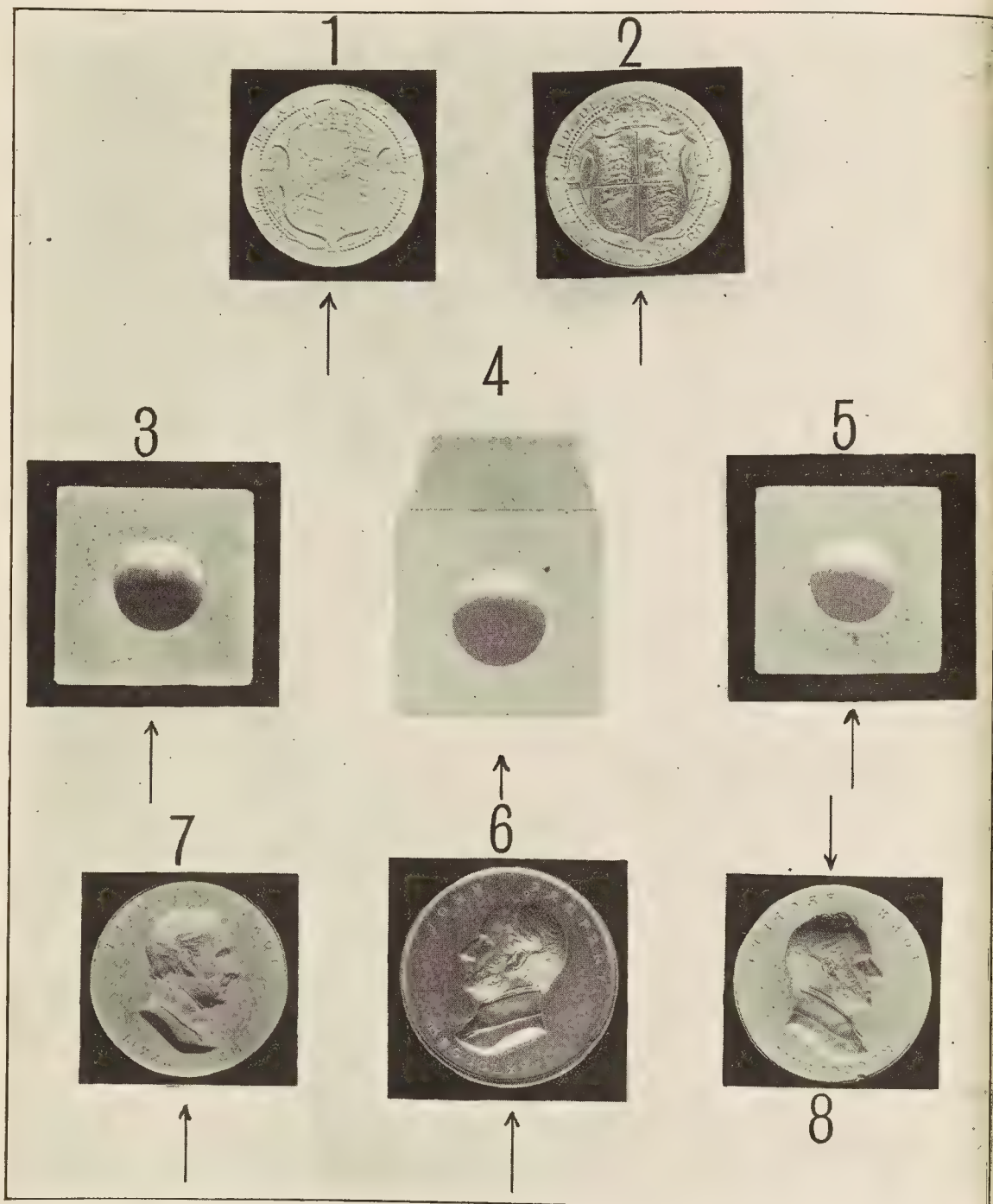
Brewster states that if an intaglio cast of a medal or coin be observed subjectively through a lens or lens-system so used as to form an inverted image, the cast appears to be in relief and not in intaglio. The only explanation he offers of the illusion is as follows:—An intaglio must, of course, have its shaded portions towards the source of illumination, while in the case of a relief the shaded portions must be turned away from the source of illumination. In the inverted image of the intaglio cast formed by the lens the shaded portions are turned away from the source of illumination whose position, it is assumed, has been duly noted by the observer. Hence the illusion of relief.

But though the inversion of light and shade with respect to the known fixed position of the illuminant may be one factor in producing the illusion, it seems to me that it does not embrace the *ne plus ultra* of explanation. For I find that if an intaglio plaster cast of a medal is viewed through a large lens used as a magnifier (i.e., under such conditions that the image seen is not inverted but erect) the cast nevertheless appears to be in relief provided the observation is conducted with only one eye. When both eyes are used the cast appears in exaggerated intaglio. Indeed, the most striking method for observing the illusion is first to look with both eyes through the lens and then close one eye.

Similarly the virtual image of a hemispherical depression in a plaster slab when viewed monocularly through a magnifier appears as a hemispherical pimple rising up from the plane of the slab. Viewed binocularly through a magnifier it appears as a depression of considerably more than hemispherical magnitude. This exaggeration of intaglio observed when the virtual image is viewed binocularly can be simply explained as a result of the unusual position of the perspective point when the virtual image of an object is viewed. In such a case the perspective centre is located on the side of the object remote from the eye, with the result that nearer parts

of the object appear smaller than equal sized more distant parts (Von Rohr's "hypercentric" perspective.)

sion of relief if it were itself looked at directly with one eye. This is the case. Holding the cast of the medal some 10 inches



Since in these experiments the images formed by the magnifier did not differ from the objects in any respects save curvature and dimensions, it appeared as if the intaglio cast should suffer inver-

from the single observing eye, the deeper intaglio of the head and bust loomed up instantly in strong relief. The less deeply chased lettering of the inscription might for a moment or two appear in



its true character of intaglio, but even this suggestion of intaglio very soon changed into one of relief. When the cast was viewed binocularly under precisely the same conditions, both lettering and bust appeared instantaneously and permanently in their true character of intaglio. Since, for great distances from the observer, the difference in the characteristics of bi- and monocular vision vanishes, it follows that even if the cast is viewed with both eyes it should present the illusion of relief provided its distance from the observer is made great enough. This is the case.

Though I have sought it diligently, I have been quite unable to perceive inversion of relief in the case either of virtual erect or of real inverted images of cameos (as opposed to intaglios) whether the cameo took the form of a bronze medal, its plaster replica, or a silver coin. According to Brewster's explanation, founded solely on our appreciation of shadow effects, such an inversion should certainly take place with the real inverted images of cameos as readily as in the case of intaglios. According to the excerpt from Brewster's letter this inversion did take place with one observer when viewing a guinea through a microscope; but later on in the letter Brewster confesses "that the raised impression of a seal on wax still seemed raised to the three youngest of six persons, while the three eldest were subject to the deception." Why the inversion of intaglios should come about so readily, while cameos under like conditions of observation persistently refuse to illude some observers (myself included) is a matter which I cannot further explain than by saying that the human mind has apparently a predilection for cameo, and this, after all, is no triumph in the way of elucidation.

Attention was now directed to the appearances of cameos and intaglios when imaged objectively on the focussing screen of a camera. The objects laid on a horizontal surface of black velvet were illuminated by light from a window falling obliquely on them from above. The camera was placed with its axis vertically over the objects.

The screen image of a deep intaglio appears as a relief if the eye looks straight down upon it, but if the observer takes his stand on the side of the camera remote from the window and views the screen obliquely the image, at any rate in its less deeply incised parts (*e.g.*, the lettering of the inscription), will appear in its true character of intaglio; but the more deeply chased portions still present the illusion of relief. If, on the contrary, the image is viewed obliquely from the window side of the screen, the illusion of relief is complete in all parts of the image. Perhaps these observations regarding the direction and obliquity of the line of sight may have some share in explaining the difficulty some people apparently have in realising illusions of relief.

In these camera trials—as in the case of the previously described subjective observations—I failed to obtain any instance of complete illusion of intaglio in the case of cameo objects, with the exception sometimes of portions of the lighter relief of the inscriptions which perplexingly defied classification into relief or intaglio. The screen image taken as a whole appeared to be in its true character of cameo, whether it was viewed directly from above or obliquely with or against the direction of the light.

Photographs of the objects experimented with were taken and are here reproduced.\* In all cases the arrow-heads show the direction of the light illuminating the object. Fig. 1 is the photograph of an intaglio cast of a half-crown. If the picture be held in a horizontal plane and the observer faces the source of illumination (say, a Welsbach burner)—*i.e.*, if the conditions of illumination are just the opposite to those observed during the taking of the photograph—the illusion of relief is very strong. But if the observer turns the picture round top for bottom, the photograph of the cast appears in its true character of intaglio. If one could be assured that the photograph would always be illuminated in a definite prescribed fashion it might be advisable to photograph plaster casts of highly polished medals or coins instead of directly photographing the coins or medals themselves; this with a view to obtaining pictures free from the unpleasing variations of reflection or "glance" that usually characterise direct photographs of highly burnished metallic surfaces (see Fig. 2). In such a case the negatives would be taken on films, and the positives printed through the thickness of the film.

Fig. 2 (a photograph of a new half-crown) never presents to me the illusion of intaglio in the shield and emblazoning; however it is viewed; the print alone appears in parts to be in temporary intaglio when the picture is viewed under conditions of illumination opposite to those observed during the taking of the photograph. By temporary intaglio I mean that the appearance of intaglio is not stable and constant, but periodically vacillates backwards and forwards from intaglio to relief in an irresponsible kind of way. I should state, however, that there is evidence of personal idiosyncrasy in this case. One or two observers to whom I have submitted the photograph state that to them practically the whole of the lettering and emblazoning appears in intaglio when the picture is illuminated from a direction opposed to that of the arrow-head.

Figs. 3, 4, and 5 are photographs of a cup-shaped depression in a plaster of Paris slab; in the case of Fig. 4 the plaster was blackened and the slab placed on a white ground. If these pictures are held in a horizontal plane, with the source of illumination in front of the observer, the central depression will appear in the character of a hemispherical mound rising up out of the plane of the slab. If the sheet is now turned top for bottom or if the observer turns his back to the light the pictures give a true suggestion of hemispherical dimples in the slabs. If the pictures are held in a vertical plane and illuminated by a back light, or if the pictures in the form of lantern slides are projected on the screen, I find the great majority of people subject to the illusion that the photographs represent hemispherical reliefs.

Fig. 6 is the photograph of a bronze medal in high relief. As in the case of the half-crown picture, I cannot under any conditions of viewing obtain the slightest suggestion of illusory intaglio of the head and bust. The printed inscription (which is in much lower relief than the head) does, however, give the impression of intaglio in parts when the incident light comes from a direction opposite to that indicated by the arrow. The major portion of the inscription under these conditions of illumination presents its true character of relief.

Figs. 7 and 8 are photographs of intaglio plaster casts of the medal of Fig. 6. If either of these pictures held in horizontal plane is illuminated from directions opposite to those of the arrow-heads, the illusion of relief is very strong. If, on the other hand, light falls on the pictures in the directions of the arrow-heads, signs of intaglio appear in portions of the less deeply chased print, but the bust itself always suggests pronounced relief. This invariable illusion of relief in the bust is strange when we recall the fact mentioned above that the intaglio of the cup can be made to assume its proper appearance of intaglio under appropriate conditions of illumination.

To sum up these observations:—

1. I have never succeeded in obtaining a complete illusory inversion of the whole of a cameo of medal, cast, or coin, either by subjective (visual) or objective (photographic) means.

2. Illusory inversion of intaglio always results either in the case of monocular vision or in the case of an inverted image formed by a lens, or in the case of photographic reproductions, provided the intaglio represents such an object as a head or bust, and not merely lettering or some simple geometrical pattern.

3. In the case of lettering or geometrical design in intaglio, illusory inversion is produced by monocular vision and by photography, provided the photograph is viewed under conditions of illumination different from those which obtained during the photographic process.

DOUGLAS CARNEGIE.

**SLOW COMBUSTION FLASH POWDERS.**—A German patent has been taken out by J. Benk for preparations made up in powder or briquette form, and consisting of two constituents of different light-producing powder. A faintly actinic weak red light is first produced and gradually develops into an intense bright light. The following three mixtures are prepared:—(1) Potass permanganate, 30 per cent.; zinc, 10 per cent.; magnesium, 10 per cent.; iron, 50 per cent. (2) Nitre, 30 per cent.; iron, 30 per cent.; magnesium, 20 per cent.; and aluminium, 20 per cent. (3) Barium peroxide, 33½ per cent.; magnesium, 33½ per cent.; aluminium, 33½ per cent. The mixtures are placed in compact form in the whole composition, and provide the course of combustion above mentioned.

\* Allowance must be made for the inevitable sacrifice of delicate tones in reproductions by halftone from the original negatives.

## Photo-Mechanical Notes.

### Intaglio Printing Plates on Metal Rollers.

According to the description in a recent patent specification (No. 3,365, 1907), a process has been worked out by J. W. Ippers, of 101, Beekman Street, New York, for the production of intaglio printing surfaces having non-intersecting ridges on metal rollers. The object of the intaglio surface is to carry colour for deposition on continuous lengths of paper or cloth, the parallel ridges being to prevent the ductor (which removes the colour from the non-printing surface of the roller) from descending to the bottoms of the printing surfaces and removing a considerable portion of the colour therefrom. Reference is made by the patentee to the prior specification of Reckard (No. 23,990, 1905), which does not, it is pointed out, provide a method of preparing printing rollers with non-intersecting ridges. In carrying out the process the lithographic methods of bichromatic printing are employed, and the following is the series of operations by which the finished result is obtained:—

Fig. 1 represents a translucent glass sheet, bearing a design consisting of a flat area of opaque surface in the form of a rectangle.

Fig. 2 is a view of a lithographic stone which has photographically received an acid-resisting film upon the surface which is represented in the figure by a hollow black rectangle. The naked surface of the stone has then been etched down to a lower level, to constitute the depressed surface which is indicated by the numeral 2.

Fig. 3 is a central vertical cross section of the stone of Fig. 2.

Fig. 4 is a view of a translucent glass sheet, which has been pro-

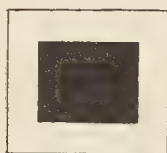


Fig. 1.

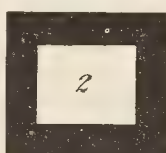


Fig. 2.



Fig. 4.

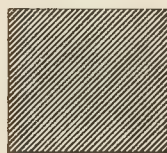


Fig. 5.

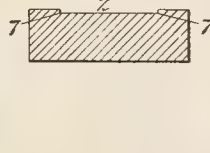


Fig. 3.



Fig. 6.

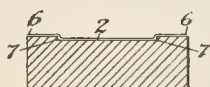


Fig. 7.

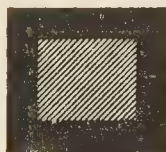


Fig. 8.

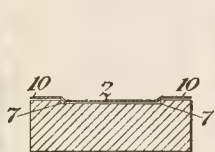


Fig. 9.

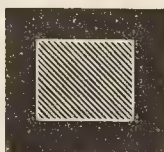


Fig. 10.

vided with parallel black lines separated by parallel transparent lines of the same width upon one of its sides. The black lines upon the sheet of Fig. 4 are permanent, and may be produced in any of the ways in which permanent black lines are made across glass plates, to be used as screens of light in photo-mechanical printing.

Fig. 5 is a view of another lithographic stone, which has been provided photographically, through the translucent screen of Fig. 4, with narrow parallel printing surfaces, represented by the black parallel diagonal lines of that figure, and separated by narrow non-

printing surfaces represented by the white diagonal lines of that figure.

Fig. 6 is a view of a sheet of lithographic transfer paper, which has received deposits of lithographic transfer ink on its black diagonal lines, from the black diagonal printing lines upon the stone of Fig. 5. Fig. 7 is a vertical cross section of the stone of Figs. 2 and 3, with the sheet of transfer paper 6 pressed down upon the upper surface of the stone, including its black border and its depressed area 2, within that border.

Fig. 8 is a view of the stone of Figs. 2, 3, and 7 after the sheet of transfer paper 6 has been removed therefrom.

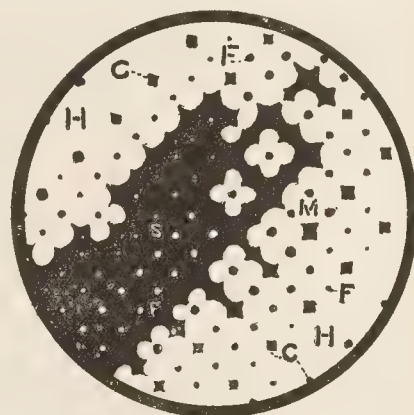
Fig. 9 is a vertical cross section of the stone of Fig. 8 with a sheet of elastic white cardboard 10, pressed down thereon, so as to receive an impression of ink therefrom.

Fig. 10 is a view of the sheet of fine white cardboard, after it has received the impression of ink, and has been removed from the stone.

### Screens for Newspaper Half-tones.

According to an abstract from the "Zentral platt für Photochemie," which has been made by Mr. S. H. Horgan, of the "Inland Printer," the Carl Richter process for producing newspaper half-tones employs two screens successively in making a single-screen negative. The one real difficulty in the production of newspaper half-tones on the present basis is the holding of detail in the shadows. So in order to overcome this fundamental difficulty when using a single screen, the Richter process utilises a single screen for the detail of the subject, and another screen effect superposed over the first, which will give the contrast, and a purity of high-lights that is unattainable when a single screen only is used. With this system it is, of course, necessary to make preliminary tests as between the two screens, so that the series of dots formed through the screen openings of the coarse screen will register exactly with the effects of the finer screen.

In carrying out the details of the process it is necessary to use two screens, the coarse one having half the number of lines that are



found on the fine screen. The effect is quite startling, for the shadows are very soft, being composed of white dots in harmony with the fine screen, and the high-lights are formed with very open dots that harmonise with the lines of the coarse screen. In the middle tones there are formed large black dots due to the coarse screen, and small black dots lying between the large ones formed by the fine screen, thus producing to the unaided eye a series of definite black cross lines in the middle tones, which are more open than the usual dots. These conditions have much to do with the printing quality of the plates, for the contrast is held up without sacrificing the detail in the shadows. The increase in interpreting power is quite marked when illustrations made with the old and the new process are placed side by side. A number of results in portraiture and commercial illustration are shown in 75-line combined with 150-line screens in contrast with the usual 75-line effects; also in 90-line ordinary and 90 and 180 combined, and 65 ordinary in contrast with combined 65 and 130 lines per inch screens. In addition, it is desirable to point out that where the two screen effects are combined—in the grays—the coarse dots coincide in position with the same number of fine dots,



and, in addition, have between them a second set of fine dots. It is, of course, understood that the first set of fine dots is lost through occupying the same space as the dots held by the coarse screen. The accompanying figure shows the relation of dots, H representing the high-lights, S the shadows, and M the middle tones. The dots of the fine screen are identified by the letter F, and those of the coarse screen by C.

### Two Pocket-Books for Photo-Engravers.

The annual pocket-book and diary issued by two of the leading houses in the process trade—Messrs. Penrose and Co. and Messrs. Hunters, Ltd.—reach our table simultaneously. Both are obtainable gratis from their respective producers. The Penrose diary includes a large number of facts and tables connected with the technical side of photo-engraving, with others on money profits and other items, which perhaps come the way of the process block maker with lesser frequency. The Hunter booklet confines itself more particularly to the chemical solutions of the engraver, but both contain formulae and hints, which are bound to be of service to the craft, as well as to photographers engaging in three-colour work.

### PHOTO-MECHANICAL PATENTS.

The following patent has been applied for:—  
**HALF-TONE SCREENS.**—No. 27,791. Improvements in screens for use in photo-mechanical engraving. Max Levy, 111, Hatton Garden, London.

**PHOTO-ENGRAVED SURFACES.**—No. 28,415. Improvements in the method, means, and process of obtaining photo-engraved surfaces. Arthur Payne, 31, Bedford Street, Strand, London.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents have been received between December 23 and 31.

**PENDANTS.**—No. 28,233. Improvements in photographic pendants. Clarence Flint, Imperial Chambers, Colmore Row, Birmingham.

**PHOTO-TELEGRAPHY.**—No. 28,277. Improvements in or pertaining to the transmission and reproduction of images by photo-telegraphy. Thomas Thorne Baker and The Pictorial Newspaper Co., Ltd., 46, Lincoln's Inn Fields, London.

**COLOUR-PHOTOGRAPHY.**—No. 28,397. Improvements in or relating to the production of photographs in colours. Herbert Sefton-Jones, 322, High Holborn, London, for Harold Nolan, Egypt.

**COLOUR-PHOTOGRAPHY.**—No. 28,398. Improvements for processes for the production of photographs in natural colours. Herbert Sefton-Jones, 322, High Holborn, London, for Harold Nolan, Egypt.

**COLOUR SCREEN-PLATES.**—No. 28,406. Improvements in or relating to plates or screens for direct colour-photography. Charles Edward Kenneth Mees and Wratten and Wainwright, Ltd., 111, Hatton Garden, London.

**CAMERAS.**—No. 28,464. Improvements in folding cameras. Magnus Niell, 88, High Holborn, London.

**TRIPDS.**—No. 28,578. Improvements in portable tripod stands. Charles John Robinson, 4, Clayton Square, Liverpool.

**CAMERAS.**—No. 28,593. Improvements in triple extension cameras. Herbert Holmes and Houghtons Ltd., 88, High Holborn, London.

**COLOUR-PHOTOGRAPHY.**—No. 28,614. Improvements in or relating to colour-photography. Arthur Schwarz, 111, Hatton Garden, London.

**STEREOSCOPIC COLOUR APPARATUS.**—No. 28,764. Apparatus for taking photographs in colours and causing them to appear stereoscopically. Louis Geisler, 40, Chancery Lane, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

**COLOUR PRINTS DIRECT FROM NEGATIVES.**—No. 13,874, 1907. The invention has for its object the making of photographs in any colours, by rendering the negative unsaturatable by dyes in the dark parts, and in varying degrees of saturation over the half-tones.

After development and fixing in the usual way, the negative is immersed in a bath which renders that part which has been affected by the light in the camera unsaturatable by dyes and saturatable proportionately according to the amount of light that has fallen upon the different parts.

This bath may consist of various solutions, many chemicals having the effect in different degrees. The following are some which have the effect in varying degrees:—

(A) Uranium nitrate, 100 grs.; potassium ferricyanide, 100 grs.; water, 10 oz. (B) A 2 per cent. solution of ferric chloride with a few drops of glycerine. Immerse in A for ten minutes and follow with B for the same period.

Another bath is:—Stock solution A,  $\frac{1}{2}$  oz.; stock solution D,  $\frac{1}{2}$  oz. of Leto toning for bromides,  $\frac{1}{2}$  oz. of glycerine, 5 oz. of water. Mix A and D together and add the rest.

Another bath is:—(A) Lead nitrate, 200 grs.; potassium ferricyanide, 300 grs.; acetic acid,  $\frac{1}{2}$  drachms; glycerine a few drops. (B) Sodium sulphide,  $\frac{1}{2}$  oz.; water, 20 oz.; immerse in A first and follow with B.

Another bath is vanadium chloride, 20 gr.; potassium ferricyanide, 20 grs.; ferric oxalate, 10 grs.; ferric chloride, 10 grs.; oxalic acid,  $2\frac{1}{2}$  oz.; water, 20 oz.; glycerine, a few drops.

The negative is placed in any of the above baths until the action has fully taken place. In the case of most baths leaving the negative in them for prolonged periods does no harm, but in most cases the action should be complete in something over ten minutes. The negative is removed and washed in cold water for a few minutes, and thence transferred straight into the dye bath, or may be dried and dyed up any period later.

It should be kept in the dye bath for about ten minutes, when it is brought out and rinsed for about a minute in cold water, and then brought into contact with gelatine-coated paper, which has been previously soaked in cold water for about a minute. They may be brought into contact under water or immediately they have been taken out, when they are squeezed together and left in contact for about ten minutes, covered with a damp cloth with a piece of glass over it, to keep them moist, at the end of which time the gelatinised paper is stripped from the negative and brings the dye with it in the form of a positive in dye. The negative may then be re-dyed and used over and over again, the re-dyeing only taking about three minutes.

The latter part of the process, from the time the negative has been removed from the dye, is exactly the same as that for the impressions taken from the positive transparencies in the pinatype process.

The chief use of the invention will be for three-colour work, which will be done by bringing the gelatinised paper into contact with the three stained negatives in turn, the whole making the complete colour picture, just as the effect is obtained by the pinatype process from three positive bichromated gelatine plates.

By another method for making three-colour transparencies the negative is made and dyed as described, but instead of printing on to gelatinised paper, is placed in any reducing solution, bleaching it right away, leaving the dye in the form of a positive.

To make a three-colour transparency by this method, one of the negatives should be taken reversed in the camera through the back of the plate; another on film, so that when finished the two pictures taken on the plates may be placed face to face, and the one on film placed between them. Frank Wordsworth Donisthorpe, Hohenfels, Combe Down, Bath.

**COMBINED BATH FOR BLACK TONES.**—Professor Namias, in "Eder's Jahrbuch," recommends the following:—

1. Hypo .....	4 oz.
Water .....	10 oz.
2. Lead nitrate .....	1 oz.
Distilled water .....	10 oz.
Glacial acetic acid .....	48 minims.

Add to No. 1 enough of No. 2 to give a distinct cloudiness after well shaking, then filter.

For use take	10 oz.
Lead and hypo solution .....	10 oz.
Gold chloride .....	1 gr.

This bath tones gelatino-chloride prints very quickly, but as the solution cannot penetrate collodion so rapidly, collodion prints tone more slowly.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Cleaning Glasses of Enclosed-Arc Lamps.

The following hint for cleaning glasses of enclosed-arc lamps is given in the "Penrose Pocket Book and Diary" for 1908. Remove the white deposit with a piece of flannel charged with whiting and water, made into a paste. Then sponge off with one ounce of nitric acid, diluted with two ounces of water. Swill under the tap and polish dry with tissue paper or clean rag. The glasses should be cleaned every morning. Another way is to soak them every other night in strong potash.

### Finishing and Mounting P.O.P. Prints.

An important point to observe in drying prints on a plate (writes Mr. H. W. Bennett, in "The Photographic News") is that there should be plenty of water between the print and the plate when squeegeeing, or the print is almost certain to refuse to leave the plate when dry. The plate should be placed on the squeegeeing board, flooded with water, the print laid in position, and squeegeed into contact. If too much surface moisture be left on the back of the print after squeegeeing, it should be removed with blotting-paper or a soft towel. If a print is drained when taken from the washing water and then squeegeed to a dry ferrotype plate, sticking is almost inevitable.

### After-Treatment of "Carbograph."

The image of the finished carbograph print (says "Photo Notes") contains silver as well as pigment, and the colour is more or less effected by the presence of the black silver image. This black image can be removed, intensified or toned, hence the final result can be modified.

Farmer's reducer removes the black silver image, lightens the colour, and materially diminishes the contrast.

Intensification of the silver image darkens the colour and increases the contrast slightly.

Sulphide-toning warms the colour without very materially affecting contrast.

Iodising the silver image gives a still warmer colour and diminishes contrast slightly.

### Sulphide Toning of Bromide Prints.

It is absolutely essential (writes Mr. H. W. Bennett, in the first of a series of two articles in "The Amateur Photographer") that identical methods should be adopted in the production of all prints intended for sulphide toning, otherwise it is quite impossible to secure any desired tone with certainty. The developer that it is intended to employ must be decided upon, and its composition and degree of concentration determined, and this developer must be used invariably. In bromide work the exposures must be made to suit the developer employed; modifying the developer to compensate for irregularities in exposure is never satisfactory. It is fatal to success in toning. When the character of the negative is such that a successful print can only be obtained by modification of the developer, the tones resulting from any formula must always vary from those obtained on prints produced under normal conditions. But there should be very few negatives that require any serious departure from the standard developer. By careful adjustment of the exposure prints of uniform quality can be produced by means of the normal developer from negatives that differ widely in their degree of strength. Of course, negatives that have been very incorrectly exposed or developed will always be a source of trouble in any printing process, and bromide is no exception to this rule.

### A Suggested R.P.S. Book Club.

We would suggest (says a writer in "Focus") that the Society might considerably extend the usefulness of the library by arranging for the loan of books through the post to provincial readers. Many of these would possibly be glad to have an opportunity of studying some of the rarer photographic books included in the library. It should not be a difficult matter to devise some workable scheme, which would not only be advantageous to members not resident in London, but might prove a source of revenue to the Society.

## New Books.

"Amstutz's Handbook of Photo-Engraving." Chicago: Inland Printer Company. \$3.

We have long regarded the second edition of "Jenkins' Manual of Photo-Engraving" as the best text-book for the beginner or the man of average intelligence in photo-engraving, since it was concise, practical, and reliable. We are afraid that the third edition, which is a revision and enlargement of this manual by Mr. Amstutz and is now rightly called "Amstutz's Handbook," cannot be regarded other than as a text-book for the most advanced worker, its very comprehensiveness making it more or less dangerous to put into the hands of the beginner.

It is the first attempt at writing a text-book which shall place the processes of photo-engraving on a scientific basis with some elaboration of the principles underlying all the operations. The stages of the work are admirably classified, and the exhaustive list of materials required in every department should prove useful.

For his careful work included in the volume, and published under the "Inland Printer" under the title "Physical Characteristics of Photo-Engraving," too much praise cannot be accorded Mr. Amstutz. The measurements are most painstaking and valuable to all who can appreciate them. On the other hand, we think the book is marred by the endeavour to include almost everything that Mr. Amstutz has ever heard of in relation to new ideas in photo-engraving; the practical worker is constantly reminded that all that is new is not necessarily good, and the apparent acceptance of all sorts of claims in this volume without test is liable to mislead an inexperienced reader.

The section by Mr. Ives on the theory of half-tone and three-colour is again included, as is also the section by Mr. S. H. Horgan on practical work in three-colour, from which current English practice in many cases would differ somewhat.

An entirely new section is that relating to the office, and the advice given therein is very much needed by the employing engraver on this side at all events, though we fancy it will be a considerable time before they adopt all the mechanical time-saving devices at the end of the business recommended by Mr. Amstutz.

The L.C.C. School of Photo-Engraving in London comes in for considerable commendation, though we notice, in quoting an article by the principal from the "Process Year Book," the word "not" inserted in error when speaking of the necessity to use white paper flashing during the exposure on a severely contrasted original when employing a mezzograph screen.

There are also one or two unfortunate misprints to be recorded. For example it is stated that "benzole" and "benzine" are the same thing. "Benzine" should be "benzene."

There are a number of illustrations, which are not too well printed. Those of them which appeared in the former edition are not so good in the later impression.

The book consists of 440 pages, in closely printed type, and possesses a good index.

## New Apparatus, &c.

ZEISS AUTOCHROME ACCESSORIES.—A "Universal Palms" camera has been submitted to us by the firm of Carl Zeiss, of Margarete Street, London, W., on account of its embodying three accessories designed to facilitate the employment of the Lumière Autochrome plates in the camera. The frame of the focussing screen is provided with two grooves, one registering as usual with the sensitive surface of the plate when the latter is loaded into the slide in the usual way, and the other affording register with the emulsion film when the plate is placed glass-side to the lens, as is necessary with the Autochrome plate. The user of the camera is thus spared the trouble of removing the focussing screen each time he wishes to make a colour exposure; he can, in fact, alternate ordinary and colour exposures at no inconvenience whatever.

A carrier for the Autochrome light filter forms the second of the accessories. It is made in light metal, allows the Lumière screen to fit light-tight into it, and holds itself in the hood of the lens. With just the perfection of fit which is the result of the mechanical accuracy of the Zeiss works. In addition, a separate focussing scale is provided with red figures applying to the use of the Autochrome



date with the focussing screen reversed. This does not detract from the employment of the usual white figures for ordinary scale focussing. Particulars and prices of the above fittings may be obtained from the London branch of the Zeiss Works, Margaret Street, W.

## New Materials.

Jacoby "Mercury" Sepia Platinum Papers. Sold by Otto Scholzig, 37, Binfield Road, Clapham, London, S.W.

Samples of the platinum paper manufactured by Dr. Jacoby for the production of sepia prints by cold development, have been submitted to us by Mr. Scholzig, from whom the papers are obtainable in this country. It is explained in a memorandum that the method adopted for the paper is the incorporation of a certain proportion of a mercury salt in the sensitiser, coupled with the use of a developer to which addition of more or less of a special sepia solution can be made. Such a procedure allows of the production of a range of colours from a warm black to a very warm sepia by the ordinary direct method of development. A similar method was advocated to some considerable extent some ten years ago, when it was recommended to dose the developer with a solution of mercuric chloride, and thus obtain on ordinary "black" platinum paper prints of more or less warm colour. However, the employment of a special paper gives more elasticity to the process, as it allows the printer to graduate the warmth of his print as seems most expedient to him. It is, we suppose, common knowledge that prints which thus owe their warmth of colour to the use of mercury can be reduced and, at the same time, rendered colder in tone, by reagents such as Farmer's reducer of ferricyanide and hypo, potassium cyanide and chlorine, a difference from other sepia platinum prints in which the warmth of tone is obtained by alternative means. Yet we hold that this is not to impute impermanence to prints of the first-named order, any more than it would be in the case of bromide prints, which totally disappear in the same circumstances. While granting the greater chemical stability of the latter class of platinum print, it is nevertheless fair to accord the quality of permanence to a mercury sepia print under the ordinary conditions to which a photograph is exposed.

This, however, is a digression from our immediate object, which is to record the method followed in using the Jacoby paper and our experience of it.

The normal developer consists of potassium oxalate solution of one to seven strength, although a stronger solution may be used for softer prints. One to two parts of the sepia solution are added to four parts of the oxalate bath, and the mixture given twenty-four hours to ripen for use; or the two may be mixed at 200 deg. Fahr., and used when cold. The proportion of sepia solution is increased in order to obtain warmer tones, but the above may be taken as an average mixture, giving rich colour of moderate warmth. It is allowed to act (cold) for four or five minutes, and the prints then cleared and fixed in three successive baths of hydrochloric acid, one part in one hundred parts of water.

The papers are obtainable in eleven different grades, depending on the raw paper employed. Our experience has been with the C (medium thick, with sharp grain), and the H (white thick, smooth), which are about the average as regards surface, but a little over the mark, for small work, in substance.

"Antilumin" Dark-room Safe-Light. Sold by A. G. Clarkson, Colchester.

Mr. Clarkson, of Colchester, purveyor of many useful specialties for the profession and the amateur, sends us a sample of this flexible substitute for red glass, which is obtainable, wholesale only, from him. The material is a thin paper rendered translucent, and, at the same time, damp-resistant, by an application with varnish. It is to be attached to glass by painting one of its surfaces, and also that of the glass, with a weak (1 in 80) solution of gelatine, and squeegeeing into even contact. It can be applied in this manner to existing windows, or mounted on glass for use in dark-room lamps. In the latter case its semi-transparent substance diffuses the light and provides a comfortable illumination for "dark-room" work. As regards its safety, we have tested the material in front of an 8-candle power lamp, and found it a safe light for the develop-

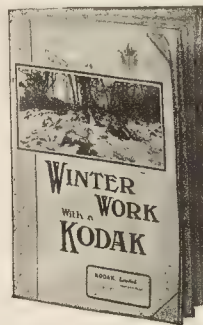
ment of orthochromatic plates—that is to say, with the usual precautions. No safe-light, as the recent measurements of Mees and Baker ("B.J. Almanac," 1908, page 587) have shown, is perfectly safe, but filters differ very greatly in their illumination for a sufficient degree of safety, and in this respect Antilumin stands well amongst available materials. Moreover, so far as our experience of it has gone, it is not liable to crack and buckle, and may be employed in lamps where the filter is apt to get uncomfortably warm. It is certainly a preparation which may be recommended for its specific purpose.

"ENSIGN" ROYAL ART MOUNTING BOARDS.—A year or two ago it was difficult to get beautiful mounting boards such as these of Messrs. Houghtons Ltd., now issued in sheets 25 x 20 inches, at 2s. 6d. per dozen in a light substance, and 6s. per dozen thick. There are nine tints to select from, and among the lot not one which is a useless colour. Such a well-selected stock of boards ought to be most useful to any photographer in producing something out of the ordinary, whilst the mounter of portraits in folders and the like will not need our recommendation to take advantage of Messrs. Houghtons' offer to send specimen books of the boards to bona-fide readers of the "B.J." It is not much good our attempting descriptions of the boards; they should be seen.

"CIRCROID" CHROMIUM INTENSIFIER. Messrs. Houghtons Ltd. have issued this reliable intensifier in the convenient compressed tablet form designated "Circroid" by them. The shilling packet contains one tube of the bleaching compound and two of the constituents of the re-developer. We found it to act quite satisfactorily on a number of negatives, whilst as an intensifier of lantern slides the chromium preparation is about the only one which is clean, and, at the same time, permanent in its results. Another useful property of the intensifier, which we found possessed by the "Circroid" preparation, is the fine rich black given to bromides which are not all they should be.

## CATALOGUES AND TRADE NOTICES.

"WINTER WORK WITH A KODAK."—A 32-page illustrated booklet of the branches of photography which may be followed during the winter months, has been issued by the Kodak Company, and is obtainable, post free, on application to Clerkenwell Road, E.C.; whence, also, we believe we are right in saying, dealers may obtain supplies for their counters. The booklet emphasises, with many excel-



lent reproductions, the facilities of photography, indoors and out, with a Kodak, despite the inclemency of the season. It deals with landscape and figure work, portraiture, flashlight, enlarging, and lantern slide making, and specifies suitable apparatus for these purposes. Decidedly a publication to maintain interest in the camera in the winter.

THE CLASSES AT THE CRIPPLEGATE INSTITUTE, Golden Lane, City, under instruction of Mr. John H. Gear, will commence a new session on Wednesday next, January 15. There will be a Practical Class specially for oil-pigment printing, Autochrome lantern-slides and enlarged negatives, each Wednesday at 6.30 p.m.; also a general lecture course at eight o'clock. These classes are arranged to be beneficial to those engaged professionally, as well as to the amateur, and special assistance will be given to those desirous of sitting for the diplomas awarded by the London Chamber of Commerce and The City and Guilds of London Institute.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

FRIDAY, JANUARY 10.

Sutton Photographic Club. "Failures and Remedies"  
Aberdeen Photo Art Club. Annual At Home.

MONDAY, JANUARY 13.

Southampton Camera Club. "Westminster Abbey." S. G. Kimber, F.R.P.S.  
Cleveland Camera Club. Rotary Carbohydrate Paper.  
Lancaster Photographic Society. "Dartmoor." T. Cann Hughes.  
Scarborough and District Photographic Society. Prints and Slides. Hull  
Photographic Society.  
Bradford Photographic Society. "Coast Studies." C. E. and H. Wanless.  
Derby Photographic Society. "Figure Study." E. H. Holding.

TUESDAY, JANUARY 14.

Royal Photographic Society. "The Modes of Action of Ruled and Analogous  
Screens and their Application to Photo-Engraving." Howard Farmer.  
Hackney Photographic Society. Photographic News Slides.  
Leeds Photographic Society. General Meeting and New Lantern Slides.  
Godfrey Bingley.  
Marylebone Presbyterian Church Y.M. Institute. Photographic Chemicals.  
Heaton and District Camera Club. Rotary Carbohydrate Paper.  
Manchester Amateur Photographic Society. Monthly Meeting.

WEDNESDAY, JANUARY 15.

Leeds Camera Club. "Ozobrome, What Can be Done with it." W. H.  
Womersley.  
Coventry Photographic Club. "Home Portraiture." D. G. Urquhart.  
Derby Polytechnic Photographic Society. "Experiences in Architectural  
Photography." E. R. Bull.  
Mill Camera Club. Photographic News Prize Slides.  
Society of Arts. "Screen-Plate Processes of Colour Photography." Dr. C. E. K.  
Mees.  
Hartlepool Photographic and Sketching Society. Enlarged Negative  
Making, &c.

THURSDAY, JANUARY 16.

Liverpool Amateur Photographic Association. Annual Meeting.  
L.C.C. School of Photo-Engraving and Lithography. "Plant Form for Students  
of Drawing and Design." E. F. Strange.  
Richmond Camera Club. "Yorkshire Dales and Northumberland Coast  
Scenery."  
Hull Photographic Society. "Marine Photography." F. J. Mortimer.  
Bath Photographic Society. "Scenes in Southern Ireland." Rev. Jas.  
Dunn, M.A.  
Optical Society. "The Relative Value of Parts in Spectacle-Frame Manufac-  
ture." H. L. Taylor.  
Lancaster Wells Amateur Photographic Association. Affiliation Slides of the  
R.P.S.  
Rodley, Farsley and Calverley District Photographic Society. "Bromide Print-  
ing." S. B. Hollings.  
Handsworth Photographic Society. Debate on the General Working of the  
Society in View of the Removal to New Rooms.  
London and Provincial Photographic Association. "The Three Zs." Illing-  
worth & Co.  
Armsley and Wortley Photographic Society. Photographic Chemicals.  
Borough of Tynemouth Photographic Society. Rotary Carbohydrate Paper.  
Blenheim Club. "Playing Cards; Historical and Curious." Alfred Whitman.

### ROYAL PHOTOGRAPHIC SOCIETY.

MEETING held Tuesday, January 7, the President, Mr. J. C. S. Mummery in the chair

A demonstration of the "bromoil" process of oil printing was given by Mr. C. Welborne Piper, to whom the origination of the process was due. Mr. Piper explained the operations to which the bromide print was submitted in preparing its surface to take an image in pigment. The print was first bleached in a solution composed as follows:—

Ozobrome stock solution .....	4 parts.
10 per cent. potash alum solution .....	4 parts.
10 per cent. citric acid solution .....	1 part.
Water, to make .....	20 parts.

This was half the strength of the bleaching bath originally recommended by Mr. Piper, as it was found that the stronger solution was liable to blister some brands of bromide paper. The bleached print was rinsed for a moment under the tap and then immersed in 5 per cent. sulphuric acid until the bichromate stain disappeared and only a faint, whitish image remained. It was then fixed for one or two minutes, washed, blotted off, and laid on damp blotting paper for pigmentation.

The various stages of this process were demonstrated in a number of instances by Mr. Piper.

In reply to a number of questions, the lecturer said that he preferred to use a palette of Bristol board for the pigment, as the card surface caused the pigment to dry rapidly and to quickly reach a more tacky stage, in which it was of service in obtaining greater contrasts in the pigment prints.

Asked as to the respective merits of ordinary, platino-matt, and

glossy bromide paper, Mr. Piper said that usually platino-matt and the ordinary surface were equally suitable, but that depended to some extent on the make of the paper. Glossy paper was not so suitable, and rough papers were difficult to work. As regards light papers, some of them might be used whilst others he found unworkable.

One necessary precaution was to avoid over-working the acid bath. It might be taken as a safe rule that a half-dishful of acid bath should not be used for more than six prints of its own size, otherwise the prints were liable to take the pigment all over.

He found the black brushes sold for the Rawlins oil process to be the most suitable, hog-hair brushes he found too stiff. To a certain extent the pigmented print could be de-pigmented with dry brush.

In reply to Mr. Manly, the lecturer said he had tried other acid baths, such as hydrochloric and acetic, but he found the sulphuric acid the best.

A short discussion in which Messrs. E. T. Holding, W. Thomas, John H. Gear, C. H. Hewitt, E. C. Morgan, and others took part followed the demonstration.

It was announced that the next monthly demonstration at the Society will be that of oil printing by Mr. John H. Gear.

**SOUTH LONDON PHOTOGRAPHIC SOCIETY.**—Mr. E. Seymour gave his lecture, entitled "Humble Beauties of the Flower World," on Monday, January 6. He drew attention to the fact that there is great natural beauty of a modest kind revealed in the despoiled weed of the fields and hedgerows, and flower photographers would do well to leave for a time their gorgeous roses and overgrow "Paderewski" chrysanthemums, and give a little attention to the humbler products of the wayside. Mr. Seymour's own exquisite studies of such amply prove the truth of his assertion. Most of his photographs are taken full-size, and he prefers a side lighting giving more relief. Mr. Seymour uses orthochromatic plates without a screen for his own work, and only uses a screen when requested to do so for professional work. He slightly over-exposed his plate, using pyro soda developer, and fixes the plate immediately the higher lights reach correct density, and, if necessary intensifying with mercuric iodide.

At the conclusion of his lecture, which was illustrated by some 180 studies, Mr. Seymour was accorded a hearty vote of thanks.

**SOUTHAMPTON CAMERA CLUB.**—The twelfth annual meeting of the above Society was held on Monday evening last. Mr. G. T. Vivian presided in the unavoidable absence of the President. The report and balance-sheet are most satisfactory, and proved that the club still maintains a strong and flourishing condition, which gives great credit to the management of this society. The officers were then elected for the ensuing year, and a vote of thanks to the retiring officials terminated the proceedings.

## Commercial & Legal Intelligence.

**A CINEMATOGRAPH BANKRUPTCY.**—A meeting of the creditors of Henry Chapman Whiteley, 17, Quay Street, Huddersfield, and Ernest Crossley, 127, Leeds Road North, Huddersfield, carrying on business as the Novelty Animated Picture Company, cinematograph and lantern entertainers, was held at the offices of the Huddersfield Law Society on January 3. The Official Receiver submitted a statement of affairs, showing liabilities £118 10s. 1d., and assets £43 17s. 6d., all of which was absorbed by preferential claims. The debtors commenced business on September 2, 1907, with capital amounting to £240, each partner obtaining £20 from his parents. Whiteley subsequently received £112 and Crossley £80, and both sums have been lost in trading. Amongst the creditors were the New Bioscope Trading Company, £28 10s. 3d.

**LEGAL NOTICES.**—Notice is given in the "London Gazette" that the partnership between John Thomas Roach, Harry Raymond Nathan, and Charles Warren Lovesey, practical cinematographists carrying on business at 12, Little Newport Street, Soho, as Ruffell's Imperial Bioscope Syndicate, has been dissolved.

In the cases of Carl Stackemann, photographer, of 4, Heathfield Terrace, Chiswick, who was adjudicated bankrupt early in 1907, and



lived Richard Maytum, photographer, of 27, Abbey Road, Torquay, who was adjudicated bankrupt in 1906, the trustees have just been released from their obligations.

**PARTNERSHIP DISSOLVED.**—Notice is given in the "London Gazette" of the dissolution of the partnership between Jas. Darman, Jm. Stocks, Jas. Dixon, and John Dixon, photographers, at Chester-Street, and Stanley (Durham). The business is to be carried on by Messrs. Jas. Dixon and John Dixon.

**THE CANVASSING FRAUD AT READING.**—Julian Michaelson, alias James Alexander, of Cardiff, was charged at Reading Police Court last week with obtaining money by false pretences.

Sarah Jordan, of 14, Mundesley Street, said prisoner told her he was travelling for Mr. Green, photographer, of Caversham, and asked witness if she would have one of her photographs enlarged free of charge as an advertisement for Mr. Green. She paid the prisoner 6d. for carriage. Witness did not have the photograph returned.

Emma Barlow, of 17, Sackville Street, and other witnesses, told a similar story.

Mr. Green, photographer, of Caversham, said he had never seen the prisoner before.

Detective-Inspector Anderson said that prisoner left his home at Cardiff four months ago, as he had stolen some watches there. He collected money on his brother's behalf but kept it, and at Oxford he had committed similar frauds to that with which he was charged that day, besides other frauds at Reading.

Prisoner was sent to gaol for a month with hard labour in each case, the sentences to be consecutive.

#### NEW COMPANIES.

**J. CHARLTON AND CO.**—This company has just been registered, with capital of £2,000 in £1 shares, to acquire the business carried on by J. Charlton, at 160, Edmund Street, Birmingham, as "J. Charlton and Co.," and to carry on the business of designers, illustrators, wood and photograph engravers, line etchers, copper-plate and steel engravers, etc. The subscribers are: J. Charlton, Mrs. S. A. Charlton, C. A. Mason, Mrs. N. L. Mason, W. Wincott, J. W. Pearce, and J. H. Charlton.

## News and Notes.

**PROFESSIONAL PHOTOGRAPHERS' ASSOCIATION.**—Mr. Louis Langflier has been elected on the committee.

**TRADE CLASSES FOR GIRLS.**—The London County Council propose to commence classes for instruction in the various branches of photography as an extension of the training in tailoring, corset-making, and other trades, which they have provided for girls.

**A GOLDEN WEDDING.**—Congratulations may be extended to Mr. and Mrs. John Davis, of Meadowside, Lancaster, on the celebration of their golden wedding this week. They were married at Lancaster Parish Church on January 4, 1858. For thirty years Mr. Davis has been known in the photographic world, and for fifteen years was a Fellow of the Royal Photographic Society, only retiring from business in favour of his son, Mr. T. S. Davis, two years ago. Mr. Davis's photographs have been accepted by Royalty. There are five children (two sons and three daughters), and fourteen grandchildren by the marriage. Mrs. Holmes, photographer, Lytham, one of the daughters, is a member of the Royal Photographic Society. Mr. and Mrs. Davis have received many beautiful presents. Although septuagenarians, they are in good health.

**LUTKE AND ARNDT.**—We are advised by Messrs. Lütke and Arndt, of Wandsbek, that from January 1 their firm will be continued as before, under the title of Arndt and Löwengard, whilst the Berlin branch of the business will be conducted under the management of Herr Richard Beifang, under the title Arndt and Löwengard, Filiale.

**COLOUR PHOTOGRAPHY AT THE P.P.A.**—This evening (Friday), January 10, a lecture will be given before the Professional Photographers' Association by Mr. Henry J. Comley, F.R.P.S., on "Colour Photography from a Professional Point of View." The lecture, which is open only to members of the

P.P.A., will be given at the house of the Royal Photographic Society, 66, Russell Square, at 8 o'clock. Members of the Professional Photographers' Association have already been notified of the fixture, but we may again draw the attention of London members to the lecture.

**EDINBURGH PHOTOGRAPHIC SOCIETY.**—The annual exhibition will be held from February 22 to March 7 in the Society's hall, 38, Castle Street, Edinburgh. There will be several open classes as well as some for members only, and in all the Society's medals will be placed at the disposal of the judges, Messrs. C. Martin Hardie, R.S.A., W. Crooke, and J. Craig Annan, to be awarded at their discretion. Entries close on February 8, and entry forms, which are now ready, may be obtained on application to the hon. sec., Mr. H. Stewart Wallace, W.S., 122, George Street, Edinburgh.

**VELOX COMPETITIONS.**—The prize winners in the current monthly competition organised by Messrs. John J. Griffin and Sons are as follows:—T. C. Howells, Widnes; Lawrence V. T. Grose, Bensham, Gateshead; Rev. F. Otley, Torquay; J. R. Grimshaw, Nelson; Walter Scott, London; John Chas. Bramley, Wibsey, Bradford; G. H. A. Currier, Alford, Lincs.; Ernest Pringle, Newcastle-on-Tyne; A. D. Collier, Whitby; D. G. Howell, Kensington; A. J. Shorter, Clapham; G. Nesfield, Wood Green, N.; John R. William, Burton-on-Trent; Miss Newham, Cheltenham.

**THE "RAJAH" CAMERA** offered monthly by Messrs. Rajar, Ltd., of Mobberley, Cheshire, for the best print on "Rajar" P.O.P., has been awarded to Geo. W. Hitchcock, St. John's Church Road, Bangalore, India, his print having been judged the best received during December. The paper on which the print was made was purchased from Messrs. Hitchcock and Son, Chemists, Bangalore.

**UNITED STEREOSCOPIC SOCIETY.**—The result of the Natural History Competition of this Society is to hand. The judge, Mr. Oliver G. Pike, F.R.P.S., made the following awards:—1st, Jasper Atkinson, Leeds; 2nd, A. T. Mole, Hampstead; 3rd, A. L. Fenton, Braintree. The following received hon. mention: Messrs. P. Dennis, B. Shalson, A. T. Mole, and Victor Selb.

**MYSTERIOUS DEATH OF A PHOTOGRAPHER.**—At Westminster last week an inquest was held on Herbert Holden, a photographer's printer, of Paddington, who was found dead in Hyde Park. It was stated by one of the park-keepers that he saw a man lying on his back with his arms outstretched on the grass late at night. It was extremely cold weather, and the man looked so ghastly that he called a policeman. The man was found to be dead. Holden's brother told the coroner that he had no doubt deceased had neglected himself. A short time ago witness sent him a box of eatables, and since the death of his brother he had found more than half of them at his house. The post-mortem showed that the deceased had had no food for some time. Death was due to poisoning from cyanide of potassium. The bottle contained a solution of that poison, which was used especially in the photographer's business. The coroner commented on the lack of motive which had induced deceased to take his life, and the jury returned a verdict of suicide, adding that there was no evidence to show the state of his mind.

**PHOTOGRAPHERS BY APPOINTMENT TO ROYALTY.**—The "London Gazette" gives lists, corrected and revised up to January 1, 1908, of the "tradesmen" who hold warrants of appointment to His Majesty and Queen Alexandra; also those permitted to style themselves, "By Appointment to the late Queen Victoria." In each case the firm is permitted to use the Royal Arms, but it is emphasised that in no instance may the Royal Standard be flown. The following are the photographers holding warrants:—To His Majesty from the Keeper of the Privy Purse: Chancellor and Son (Dublin), J. B. Ciolina (Frankfurt), W. and D. Downey (London), J. F. Langhans, photographer at Marienbad (Prague), Arthur Marx (Frankfurt), Mowl and Morrison (Liverpool), Carl Pietzner (Vienna), F. Ralph (Dersingham), Russell and Sons (London), T. H. Voigt (Hamburg), H. J. Whitlock (Birmingham). From the Lord Chamberlain:—Wm. E. Gray, fine art photographer (London), Hills and Saunders (Eton), Alex. A. Inglis (Edinburgh), Lafayette Ltd. (London), Wm. Oldham (to supply photographic chemicals), (Eton), Thomson and Son (London). Permitted to style themselves "By Appointment to the late Queen Victoria":—W. Abernethy (Belfast), T. and R. Annan and Sons (Glasgow), Brown, Barnes and Bell (Liverpool), W. H. Grove (London), Hughes and Mullins (Ryde, Isle of Wight), H. N. King (London), Lettsome and Sons (Llangollen), London Stereoscopic and Photographic

Co., Ltd. (London), Maull and Fox (London), A. and G. Taylor (London), R. Welch (Belfast), G. W. Wilson and Co. (Aberdeen). To the Queen, from the Lord Chamberlain:—W. and D. Downey (London), Kodak, Ltd. (London), Lafayette, Ltd. (London), W. S. Stuart (Richmond).

"PHOTO NOTES."—With the new year and the commencement of a new volume our miniature contemporary drops its sub-title, "The Bromide Monthly," and appears under the editorship of Mr. Welborne Piper, whose experimental work in several chemical processes related to bromide work, should ensure readers to "Photo Notes" some useful communications. The magazine is not, however, limited to bromide work, and the current issue contains notes and articles on "Bromoil," "Carbograph," "Daylight plus Flashlight," "Stand Development," "The Autochrome Process," "The Use of Negative Paper," "Black Tones and P.O.P." and "The Thiocarbamide Toning Bath," in all a goodly budget of practical information, which is surely not dear at 2d., for which sum "Photo-Notes" can be purchased from photographic dealers. It may be obtained, post free, 2s. 6d. per annum, from the publishers, The Rotary Photographic Company, Ltd., Moorfields, London, E.C.

CELLULOID IN JAPAN.—According to recent information (says the "Times") a factory is being equipped in Japan to produce five tons of celluloid and half a ton of artificial silk daily. Celluloid, as is well known, is made by treating nitro-cellulose with camphor, and Japan, including Formosa, furnishes about four-fifths of the world's supply of camphor, which is, moreover, a Japanese State monopoly for export purposes, and is constantly rising in price. It will be possible for the new company to employ its raw material either for the preparation of celluloid or for artificial silk in accordance with the state of the market.

"A VERITABLE FEAST OF COLOUR" is a time-honoured Daily-Telegraphese description of the stage-craft in costume and scenery which one is accustomed to find at the Alhambra Theatre, Leicester Square, but it is, nevertheless, an epithet justly applied to the ballets at this world-renowned house of entertainment. Probably many a user of Autochrome plates for portraiture or figure studies will pick up a hint from the almost endless variety of colour schemes in harmony and contrast to be seen on the Alhambra stage in a brief three-quarters of an hour. Apart from these educative features, the current programme includes a number of new performances, which make up an ideal evening's light entertainment for the jaded Londoner; they have the art at the Alhambra of putting on a show which is never dull nor yet a tax on tired brains.

DAYLIGHT DEVELOPMENT OF AUTOCHROMES.—M. Gravier, whose description of the dish for the daylight development of Autochromes appeared in the last issue of the "Colour Photography" Supplement, informs us that the dish is made in Paris by M. Mathieu, of 62, Rue des Marais, by whom it is sold at a total price of 10 fr. 75 c.

## Correspondence.

\*.\* We do not undertake responsibility for the opinions expressed by our correspondents.

\*.\* Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

### MAGIC MIRROR EFFECTS.

To the Editors.

Gentlemen,—In THE BRITISH JOURNAL of November 29 last appears a paragraph by Mr. Douglas Carnegie, in which it is suggested that suction by the pneumatic holder caused deformation in a glass plate. I beg to differ. I had the same trouble some thirty years ago when coating glass with collodion emulsion, and easily got over it without looking so far for the cause. It was due to nothing more nor less than a difference of temperature between the unprotected glass and the glass when protected by the pneumatic holder caused by the rapid evaporation of the collodion or similar substance while evaporating irregularly. In order to get over it I dipped the pneumatic holder occasionally in cold water before pressing it against the glass, and never again met with the trouble.—Yours very truly,  
4, Avenue Pinel, Asnières, Seine.

A. LEVY.

## Answers to Correspondents.

\*.\* All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.

\*.\* Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.

\*.\* Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & CO., 24, Wellington Street, Strand, London, W.C.

\*.\* For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C. undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.

### PHOTOGRAPHS REGISTERED:—

O. C. V. Aldis, 14, Victoria Pathway, Queen's Park, Chester. Photograph Marble Bas Relief, "The Head of Christ," by Donatello, Sculptor.  
W. H. Hewitt, Stubby Road, Dronfield, Derbyshire. Photograph of Dr. Rooth. Three Photographs, Interior Views of Dronfield Parish Church.  
A. Basil, 100, Tottenham Court Road, W. Three Photographs of the Rev. J. Akeley.

S.—None that we know of

BLACK TONES ON C.C.—Will you kindly give me the formulae for obtaining the rich black tones on aristo, platino, and other similar makes, and resembling the engraving black carbon? I am working the combined gold and plat. baths, but am not able to get the result I speak of, it either being a blue-black with toning to a chocolate in gold bath, or a greenish olive, with keeping print red in gold bath. I see in "Almanac" a formula where phosphoric acid is given in platinum bath. Would this give me the desired result?—R. D.

See the paper by Mr. Foster Brigham on another page. The phosphoric acid will not influence the tone.

REPRODUCTION.—Has a newspaper a legal right to reproduce photographs (if not copyright) without permission of the photographer? If so, must the name of the photographer appear underneath?—DOUBTFUL.

It has not, but under the Copyright Act no proprietor of copyright is entitled to any of the benefits of the Act unless the copyright has been registered. Legally speaking, we suppose newspaper has such right in the case of unregistered copyrights. We refer you to the article on "Copyright" in the "Almanac" for 1906.

ASTHENES.—We should judge the A outfit as most suitable. You cannot do better at a moderate price than write Messrs. Spiers and Pond, Water Lane, Ludgate Hill, E.C.

HONESTY.—Without being able to compliment you on your selection of a subject, we must say that the coloured card is obviously "colourable infringement" of your photograph, but as you have not registered the copyright you cannot proceed in respect of anything done up to now. After registration you can restrain both the actual makers of the card and those who sell it from making copies or exposing it for sale respectively. You had better be guided by a solicitor as to the best course to pursue.

OLD LENS.—Could you inform me, through your valuable paper, the value of lens marked "Lerebours, 4,453, et Secretan à Paris," sold by J. Atkinson, 33, Manchester Street, Liverpool? It covers  $\frac{1}{2}$  plate at full aperture. By so doing you would greatly oblige.—W. F.

It is without our province to value apparatus. The owner of it is always the best judge of the value it is to him. This lens must be a very old one, though it may be a very useful one. Its market value is probably not more than a few shillings.

GLAZING PRINTS.—Can you give me a good formula for preparing glass for glazing glossy bromide prints? I have been using for the past year pulp glazing boards, and they have got very scratchy. They cost me £10. I do not wish to buy new, as I should only have the same trouble again.—R. W. BROWN.

Make a solution up as follows:—Beeswax, 100 grains; benzole 1 pint. Pour a little of this on the glass, rub on with a piece of old flannel, and then polish off with another piece; or the glass



may be rubbed over with French chalk and the superfluous dusted off. If the latter method be adopted the prints should be alumed before they are squeezed on the plate, otherwise they may be liable to stick.

**TRADE MARKS.**—Would you kindly give me information how to register our names as photographic dealers, etc.?—T. CANN AND SON.

Write to the Comptroller of the Patent Office, Trade Marks Branch, Southampton Buildings, Chancery Lane, W.C., enclosing a penny stamp, and he will send you full instructions for the registration of your trade names. The matter is very simple.

**RESIDUES.**—(1) I have a large stock of very old plates (now practically unuseable), and I should be very glad if you will kindly inform me the best way to treat them for abstracting the silver. (2) Also, I have a large quantity of unmounted photographs (out of date) which I was thinking of burning down to ash, etc. Is it worth while?—F. B. REWOLF.

(1) The bromide of silver may be dissolved out of the films with a solution of hyposulphite of soda, the ordinary fixing bath, then the silver can be precipitated from that as a sulphide by sulphide of potassium (liver of sulphur). The sulphide of silver can be sent to a refiner. Unless you have a very large number of plates to deal with we doubt very much if the silver, when recovered, will repay you for the trouble and cost. (2) Not worth the trouble.

**P.O.P.**—(1) The lens you name is excellent, and will cover a plate well at a considerable angle—that is, a six-inch lens would cover half-plate. At the same time, we would dissuade you from using such short focus for cabinet portraits. (2) It would seem as though the defect is caused by occasional dewing on the lens. (3) We should say that, in the absence of any other arrangement, a quarter's notice is all that can be enforced.

**COMBINED BATH.**—Can you kindly give a cheap combined toning and fixing solution, suitable for toning postcards, cheaply?—POSTCARD. We can do no more than recommend you one or other of the baths on page 818 of the "Almanac."

**COPYRIGHT.**—I was photographed in Glasgow during the holidays, and am anxious to get a number of copies, as the photograph is a good one. The firm do not, however, use the sort of paper I prefer. I would like to have them done in carbon, and could get them copied and printed where I am employed. I do not know if this is permissible. I was told it was not, as the man who took the photograph could object. I have ordered and paid for half a dozen, and, of course, they are all merely for private distribution. I would be much favoured if you could tell me if I am laying myself open to any penalty in connection with copyright law by doing what I suggest. The photographer would require to send to a trade printer to get carbons done, and the price he named is quite out of reason.—COPYRIGHT.

Certainly, you are at perfect liberty to have the photograph copied, and neither you nor the printer who carries out the work is guilty of any infringement. As you paid for the photographs the copyright is yours.

**BENNETT CLARK.**—You had better apply to Newton and Co., Fleet Street. If they do not undertake the work themselves they will probably be able to tell you of someone prepared to make photomicrographs.

**ACETYLENE.**—1. As a user of acetylene gas, I should be greatly obliged if you can supply or advise me where to apply for particulars of what was reported as an explosion of an acetylene apparatus at a lantern show at Cardiff recently. 2. I get a good 9-ft. picture on the sheet with my lantern, and 6-in. focus lens. If I use a 10-in. lens, and get further away from screen so that my picture is 9 ft. diameter as before, lens being same diameter and light same in lantern, will last-named picture be as brilliant as the first, and if not, why not? With thanks in anticipation.—C. MASON.

1. We do not know any particulars beyond those already published. 2. If the same condenser is used with either lens there may be a difference due to the fact that the condenser works better with the one lens than with the other. Also with the 10-in. lens the light will have to be nearer the condenser, and,

provided the objective passes all the light that reaches it, the picture will be slightly more brilliant. If a longer focus condenser is used with the 10-inch lens, so that the distance from light to condenser is the same, then the pictures should be equally brilliant.

**J. J.**—We must refer you to our advertisement pages, where you will find the announcements of several such firms.

**H. W. H. P.**—We shall report and also reprint the lecture.

**DEVELOPING P.O.P.**—I should be glad to know if it is possible to develop P.O.P. after faintly printing, and then tone and get the usual tone at finish. Is Rodinal a good developer for above?—GEO. F. FRAMJEE.

Certainly it is; but after-toning, best in a combined bath, is necessary. Suitable developing formulæ are given in the "Almanac," page 819. Rodinal as purchased is not suitable. No doubt it could be used if acidified, but we have not experience.

**WAGES.**—You published some weeks ago a very useful summary of the Factories and Workshops Acts as applicable to photographic businesses, and I should be glad of your further valuable advice on the matter of payment or non-payment of assistants for extra holidays, such as summer holidays and absence in the event of sickness. That you may the better be able to give your opinion, it would perhaps assist you if I state my case more fully. I am running my business on high-class lines in highly rented and rated premises, and am assisted by two competent male assistants, in addition to considerable help from my wife. By reason of the quality of work produced and the fashionableness of clients, the margin of profit remaining after paying expenses and wages is barely a living one, and when making payment to assistants for a fortnight's holiday in the summer (in addition to all usual holidays) and absence in sickness, the duties usually performed by them devolve on myself, and necessitate prolonged and unreasonable working hours, often amounting to twelve, and sometimes more, hours a day, and I find that for the actual amount of hours worked my assistants are better paid than myself. What I wish to know—and it is an important consideration in a business such as mine—is, (1) Is it usual to give a fortnight's summer holiday, and necessary to give payment for such holiday? And (2) is it usual, and am I legally liable for payment to assistants when absence is due to sickness?

(1) It is. (2) It is usual, but we believe there is no legal liability in the case of sickness not occasioned by an employee's daily work.

**ACID AMIDOL.**—In the "B.J. Almanac" you refer to an acid amidol developer recommended by M. Balagny. I am told in his original work he writes of acid diamidophenol. Can you tell me if the same quantity of the latter, as the amount of amidol you quote, applies to the formulæ you give?—E. W.

We have not tried it, but amidol is practically the same substance as diamidophenol, and one can no doubt be replaced by the other in the formula.

**AUTOCHROME.**—Will you kindly give me your opinion as to cause of failure of enclosed Autochrome plate? I exposed it on a young lady, exposure two minutes,  $f/8$ , studio poor light. It looks as if it had not been exposed; but I was very particular to draw my slide, etc., as I had a failure something similar before. This is not my first attempt at Autochrome work, as I have three very good landscapes; but it is my first attempt at portraiture.—J. S. RICHMOND.

We should say the exposure was enough to give some sort of image, although it is none too much in poor light; but the appearance of the lightest parts only of the subject point to under-exposure. We could say more if you gave an actinometer value of the time. As it is, we advise you to test the light by Wynne or Watkins, and use  $f/8$  or P 1 as the speed of the plates.

**ARTIST.**—The "No. 3 B" lens of the maker named has an aperture of  $f/3$  and a focal length of  $11\frac{1}{2}$  in, and requires a distance of about 18 ft. between sitter and camera. Therefore it can be used in a studio 24 ft. long, though a little longer would be more convenient for working with it. No lens of that focal

length and aperture can be expected to cover perfectly to the edges. With regard to the second lens named, we have had no experience with it, and you do not say its focal length, so that we can say nothing as to what it should cover. However, by referring to its maker's catalogue we see that its aperture is but  $f/6$ , consequently it will require something like four times the exposure of the other, supposing both to be used with their full openings. With reference to your studio queries, we must refer you to the articles on the subject that appeared on pp. 635 and 659 of our volume for last year (issues August 25 and August 30).

**A BUSINESS QUERY.**—A lady came with a photograph and asked us to do her six copies for 11s. She paid 2s. on account, and said she would call the next week for them. She called and said they would do, but she had not the remainder of the money, but would call for them next week. We have not seen her since. Are we bound to deliver them to her before we can put her in the County Court for the balance? Or what would you do in such a case?—J. AND S.

We should say that you had better withhold the pictures till you get the money. If you deliver them to the customer you can then sue for payment in the County Court. The former would be least trouble.

**BLACK BACKGROUND.**—I should be much obliged if you can tell me if it is possible to make a perfectly black background out of a dark cloud one; and if so, what process of colouring would have to be gone through?—READER.

Yes, it can be done, and the easiest way would be to do it in distemper colour. In our issue of February 1 of last year will be found practical instructions for making distemper backgrounds, to which we must refer you, as space will not permit them to be repeated again in this column. In your case, it goes without saying, the whitening must be omitted, in order to obtain a quite black background, and lamp black, or drop black, used alone.

**A WAGES QUESTION.**—I should be much obliged if you will enlighten me on the following point. I am engaged in a business with some others, and a few weeks before Christmas we were informed by our employer that as the business was in a bad way he would have to deduct some money off our wages, at the same time telling us he would pay us our former salary, together with our deducted money, at Christmas. We have been on these short wages for some time now, and all applications for the deducted money are practically ignored. One of the assistants has now received notice. Will you inform me how he and the others can obtain their money?—PERPLEXED.

The only thing you can do is to sue for the arrears in the county court, if you cannot obtain them otherwise.

**H. AND D.**—I should be much obliged if you would inform me where I can obtain the necessary apparatus for "dry-plate" testing by the Hurter-Driffield system; also any literature bearing on the subject. I should be pleased to hear of anyone willing to give practical demonstrations of this system. Would an advertisement in the "Journal" to that effect be of any use? With regard to the literature, I have already the "Photo-Miniature" on the subject.—THOMAS ROUTE.

Apparatus from Sanger-Shepherd and Co., Grays Inn Passage, Holborn, W.C. There is no further literature in English except the book by Mees and Sheppard, "Investigations on the Theory of Photographic Processes" (Longmans, 6s. 6d.). A small announcement in our pages might certainly put you in touch with some one willing to give instruction.

**H. P. R.**—We will try them and report next week.

**E. R. Y.**—Houghtons Ltd., see under "New Materials" on another page; also Barton's, 114, Golden Hillock Road, Birmingham.

**JOHN DALTON.**—Fallowfield, 146, Charing Cross Road, London, W.C., and Billcliff's Camera Works, Manchester, S.W. For one exposure for all portraits you will require a camera with a number of lenses, but the most practical arrangement is a repeating back which can be adjusted to the various sizes.

**GREASE ON FINISHED PHOTOGRAPH.**—I have just had a 24 x 18 bromide enlargement made and worked up, first-class, in black and white for a specimen. While waiting to be put into its frame my boy upset, and broke, a bottle of sweet oil, some of which got on to the picture, and, worse luck, on the face. Can you tell me if there is any way of getting the grease off without injuring the working-up, which was done with water-colour, or is the picture entirely ruined?—R. J. W.

We do not think the picture is actually spoilt, as the oil can, probably, be removed by the following means:—Take some pure clean benzole, and pour a little on those parts where the grease is, let it rest for a minute or so and then blot off with clean white blotting-paper. By repeating this treatment several times the grease may be got out, and probably no stain will be left behind, and the water-colouring will not be disturbed. Even if it is, it will only be to such a slight extent that it can easily be repaired by the one who worked up the picture in the first instance.

**MASTER AND APPRENTICE.**—I have an apprentice bound to me for five years. He was a little over seventeen when he was bound by his father, since dead. I had a very small premium with him. Last week he told me he would not serve after another month, unless I paid him nearly three times what he is now receiving, as he would then be twenty-one. I told him that I should make him serve his full time, and he defied me. As he has now learnt the business, and is a very useful man to me, I want to make him serve his time. Can I take him before a magistrate for an order, or what steps must I take? I may mention that the indentures were made out by a solicitor, and properly stamped.—COUNTY PHOTOGRAPHER.

When the young fellow arrives at the age of twenty-one he can leave you if he chooses, as he is not bound to serve you longer. It would be of no use your attempting to keep him, unless you pay him what he demands. No apprentice can be compelled to serve after he attains his majority.

**COPYRIGHT QUERY.**—In the summer I arranged with a stationer in an adjoining town to take twenty views here and supply a print of each, to be reproduced by him (process blocks) and published by him as postcards. That he has done, and has sold many thousands of them. But I cannot get the money for my work; he keeps putting me off, though he is a well-to-do man, but has the credit of not paying anyone till he is obliged to. What I want to know is, if I were to make the pictures copyright now, as I have not been paid for them, can I prevent any further sale of them, or at least until he has paid me?—DOUBTFUL.

No, you cannot. In ordering you to take the pictures the man incurred a debt which is recoverable in the county-court. Although you have not been paid for your work the copyright is that of the stationer who gave you the order. Such a case as yours, "Boucas v. Cook," was decided a few years ago. Your only way of obtaining your money is by summoning the man in the county-court.

**J. A. WALTERS.**—Unless you can send us a specimen, we cannot say by what process it was made. From your description, however, we surmise it is a collodio-chloride print, toned first with gold, and afterwards with platinum.

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## SUMMARY.

Profitable Sides of Carbon Printing.—We draw attention to some applications of the carbon process, advantage of which might be taken by professional photographers. No 1 appears on page 40.

Some New Year's resolutions for a professional photographer include a higher standard of regular work, aims at correct exposure, novelties in styles, and more attention to book-keeping. (P. 39.)

Professional photographers are reminded that the right to use the Royal Arms is granted to a very few. (P. 37.)

We give on this page the names of those taking part in the exhibition of professional photography to be opened at the house of the "B.J." on February 6.

Some interesting experiences of Press photography were communicated by Mr. Reinhold Thiele at the Bolt Court School last week. (P. 42.)

Dr. Mees' lecture on screen-plate colour processes at the Society of Arts is reported on page 41.

A further departure in the Krayn screen-plate colour process, by which prints on paper are to be obtained, has been patented. (P. 44.)

The Progress Medal of the Royal Photographic Society has been awarded to Mr. John Sterry for his photo-chemical investigations. (P. 42.)

Mr. Martin Duncan has joined the staff of Messrs. B. J. Edwards and Co. as head of the cinematograph department. (P. 52.)

A patent has been taken out for the use of sodium thioacetate as the darkening bath in sulphide toning. (P. 44.)

What appears to be a re-invention of the ozobrome process has been patented in this country by Dr. Boerner. (Pp. 38 and 44.)

A non-spherical type of lens, for which aplanatism and great depth of field are claimed, has been patented by two French inventors. (P. 45.)

Dark-room clocks and cameras for balloon photography are among other patents of the week. (P. 43.)

Professor Michelson has published particulars of a new actinometer. (P. 38.)

A note on the cause of the dewing of lantern slides appears on page 38. Apparently the dewing is produced not simply by deposition of moisture on a cold surface.

## EX CATHEDRA.

### The "Royal" Progress Medal.

The award of the Progress Medal of the Royal Photographic Society to Mr. John Sterry should be received with satisfaction by everybody, for it provides the occasion of taking a review of the many scattered papers which its recipient has written during a period of experimental work which goes back now for a good many years. Had Mr. Sterry assumed more it is possible that the honour which the Society has to give would have been bestowed earlier upon him, but his modesty in speaking of his own work is at least as well known as the work itself, although Mr. Sterry is one of the few members of the Royal Photographic Society who is prepared to quote chapter and verse in contesting some point of the chemistry of, say, the latent image at which, very likely, he worked long enough ago for his results to have been forgotten. A portrait of Mr. Sterry appears on another page, and next week we shall supplement the brief notice which accompanies it by an article dealing more adequately with the series of experimental researches which have at length been accorded official recognition.

\* \* \*

### The Exhibition of Professional Portraiture.

As announced last week, the Exhibition of Professional Portraiture arranged by the Professional Photographers' Association, will be held at the house of the "B.J." from Thursday, February 6, to Saturday, March 7. The Exhibition will include the work of the following members of the Association or of firms under the direction of members of the P.P.A.:—Edmund G. Ballard (Chepstow), G. C. Beresford (Brompton Road, S.W.), Gordon Chase (Tunbridge Wells), Henry J. Comley (Stroud), W. and E. Downey (Pimlico, S.W.), Ellis and Walery (Baker Street, W.), Elliott and Fry (Baker Street, W.), William Gill (Colchester), Hughes and Mullins (Ryde), Martin Jacolette (South Kensington, W.), Langfrier, Ltd. (Old Bond Street, W.), Percy Lankester (Tunbridge Wells), H. S. Mendelssohn (Pembroke Crescent, W.), John Moffat (Edinburgh), H. P. Robinson and Son (Redhill), Tom Reveley (Wantage), Miss Caswall Smith (Oxford Street, W.), H. C. Spink (Brighton), Sarony and Co. (Scarborough), Turner and Drinkwater (Hull), R. Fellows Willson (Sloane Street, S.W.), Drummond Young and Watson (Edinburgh). As in the case of previous exhibitions at the "B.J.," the collection is open for inspection daily from 10.30 to 4.30 (Saturdays, 10.30 to 12.30), on signing the visitors' book.

\* \* \*

### Photographers in Reference to the list given last week to Royalty.

of photographers who hold Royal appointments, we may point out, for the benefit of many who address the query to us from time to time, that they, and

they alone among photographers, are entitled to use the Royal Arms in their businesses. This restriction applies equally to the use of the Royal Arms on show-cases, mounts, note-paper, letter headings, or anything else, and the penalty for disregarding it may be as much as twenty pounds. The letters we receive from persons who have had some photograph accepted by a Royal personage, or even by the King himself, show us that this condescension is frequently assumed to carry with it the right to use the Royal Arms. Such is, of course, an entirely unwarrantable assumption, for only those who hold the official Royal appointment have the right to signify the fact in connection with their business. We should add, too, that the use of a colourable imitation of the Royal Arms equally exposes the offender to a fine.

\* \* \*

### Ozobrome Re-Invented.

This week we publish what appears to be a new patent specification of the Ozobrome process. The special claim of the patentee, Dr. Rudolf Boerner, seems to be the discovery of the fact that the hardening of the image is accelerated by the use of catalytic agents, such as salts of cerium, iron, uranium, nickel, etc., but we are rather surprised that neither the patentee nor the Patent Office have made any reference to Mr. Manley's patent No. 17,007, 1905. The new patent forms interesting reading, but as regards the theory of the process we are inclined to think the inventor assumes a great deal. He does not give any proof that the metallic salts he adds do really act as catalysers, and he also attributes the hardening of the image solely to the formation of a chromium compound in the gelatine. There is, however, certainly some evidence to the effect that other substances are also formed in the image, and in the present state of our knowledge of this and other similar processes it is rash to attempt detailed explanations of the chemical mechanism of the actions that occur.

\* \* \*

### The Theory of Stereoscopy.

We reprinted lately an article by Dr. W. Scheffer, on a generally applicable stereoscopic correction formula, which article evidently considers the subject almost entirely from a mathematical standpoint. We feel, however, that it is very desirable to point out that stereoscopy is a subject that cannot be safely studied from this point of view alone. Numerous writers have so considered it, and owing to this fact many erroneous statements have been promulgated. Brewster himself made the same mistake, and many of his statements and conclusions are founded on purely geometrical figures and considerations, and not upon actual visual tests. Dr. Scheffer finishes his article with a law that he has "mathematically worked out," which gives a definite value to the apparent enlargement or reduction of dimensions and distances that may sometimes be detected in stereoscopic views when examined in the stereoscope. We have not tested his law to see if it is mathematically correct. We can take it for granted that it is so on paper, but we cannot for a moment admit that any such law holds good in practice. It is well known that some subjects, when taken and viewed under certain conditions, do appear different from the original as regards scale and distance, but if we test the matter practically we soon find that the alteration actually perceived bears no sort of relationship to the mathematically calculated state of affairs. Suppose, for example, we take a pair of photographs of a distant building from the extremities of a very long base line. If we mount the resulting prints in such a manner as to permit their being correctly viewed, then it can be mathematically shown that the effect should be that of viewing

a very small model of the original situated only a few inches from the eyes. But it can be practically proved in a few seconds, by actual trial, that no such effect is produced at all. The result will probably appear nearer than in nature, but its nearness and apparent small scale is limited by other most important factors that the mathematical exponents of stereoscopy unanimously ignore altogether, no doubt because such factors cannot be expressed in figures or formulæ.

\* \* \*

### Dew on Lantern Slides.

Of late we have heard a good deal concerning the appearance of moisture on lantern-slides when they are subjected to the heat of the lantern. Every lanternist has remedies for this, and knows that if the slides are warmed before use the appearance is prevented, but every one does not, perhaps, know that this dewing of the slides is a phenomenon that is not very easily explained. If a piece of glass is taken from a cold atmosphere into a warm and moister one, such as that of a room filled with people, the glass is at once clouded with dew. Any one unfortunately compelled to wear spectacles is only too familiar with this fact. These, however, are not the conditions that prevail in the case of the lantern-slide, though many seem to think that they are. The air in the lantern is that of the room heated and partially dried. It therefore contains less moisture than the outside air to which the slides are exposed before being inserted in the lantern carrier. A feature of the dewing effect is its slowness. The moisture does not appear immediately. Some little time elapses before it shows at all, and it then slowly spreads. It will eventually disappear, but not for a very considerable time. In the case of the dew formed when cold glass is introduced into a warm moist atmosphere, the formation is almost instantaneous, and the disappearance is relatively rapid. The suggestion that the moisture is derived from fresh moist air drawn into the lantern is discounted by the fact that the freer the ventilation the less moisture is deposited, as pointed out by a recent correspondent. The most feasible theory seems to be that the moisture is carried into the lantern by the slide itself, in the gelatine and in the paper binding. The slow appearance of the dew, and the slowness with which it disappears, tend to confirm this view.

\* \* \*

### A New Actinometer.

Professor W. A. Michelson, who is so well known for his researches in spectroscopy, gives in the "Physikalische Zeitschrift" a description of a new actinometer of his own design, which is apparently more sensitive than any existing instrument. The starting point of the new instrument was based on the action of the solar rays on a small sheet of mica, which is blackened on both sides and measures 60 x 12 mm. It is fastened at one end and is thus free to expand or contract as it is warmed by the sun. One end being fastened there is consequently distortion, the amount of which is read off. A still further improvement was made by substituting for the mica a sheet of platinum foil, of 0.025 mm. thickness, on which was deposited on one side only, by means of copper sulphate solution, a layer of metallic copper of 0.03 mm. thickness. To the end of this compound bimetallic plate is fastened an aluminium finger, at the end of which is a very small mirror. The whole is enclosed in a copper tube filled with water, which protects it from the action of the heat of the surrounding air. A small slit enables the instrument to be directed to the sky, and the variation of the position of the mirror can be read off by an eyepiece. Practically the new instrument may be considered as a pyrheliometer, or an instrument for measuring



the actinic variation of the light by means of the heat rays, which practically increase in a known ratio from the violet to the red end of the spectrum. The instrument is small and capable of very delicate and quick readings, thirty seconds being quite sufficient for one reading.

\* \* \*

#### the Use of Stills.

A writer in a contemporary advocates the use of home-distilled water, and while he admits that the law requires a licence for the use of retorts and stills, he suggests that no risk will be incurred, seeing that the strict enforcement of the law would seriously affect chemical education and research. We fear that this is by no means the view of the Inland Revenue authorities, and, as a matter of simple fact, many engaged in research work, and quite beyond suspicion of using stills for illicit purposes, have had serious trouble over this matter. No doubt many stills are in use for quite innocent purposes without licence or permission, but trouble on their account has only been avoided because the authorities do not happen to know anything about them. In any case the game is not worth the candle to photographers, seeing that distilled water can easily be obtained at 6d. per gallon or less. In a laboratory or factory where large quantities are used the case is different, but owing to the slowness of the process of distillation it is then generally necessary to keep the still constantly in use, and to work it in connection with a furnace or other heating appliance that is also in continual use. The photographer who only requires a few gallons occasionally will find little or no economy in distilling his own water, for the time that he will probably waste over waiting for a sufficient supply, added possibly to the cost of gas, etc., specially used, will more than counterbalance the cost of purchasing the small quantity that he requires.

#### A PROFESSIONAL PHOTOGRAPHER'S NEW YEAR'S RESOLUTIONS.

AFTER the depletion of one's pockets associated with the Christmas season, one's thoughts naturally turn with greater keenness to the question of their replenishment during the coming year.

Presumably photographers make good resolutions as the clock chimes midnight on December 31, and doubtless also they have already broken or forgotten their virtuous intentions. We venture in these notes, however, to suggest a few resolutions that may profitably have a longer lease of life than the rest of their kind.

One resolution that is being drummed into photographers in and out of season is to keep the showcases clean and bright, and frequently to change their contents. It is surprising how in the rush of business such essentials as display of one's most recent work are forgotten or pushed aside. Should any of our readers have been so negligent as to have left their Christmas shows unchanged they should immediately remedy the omission. We know at least one photographer who removed all his Christmas goods on Christmas Eve, opening with a fresh show after the holidays.

However cheap the class of work that may be done, a timely recommendation is that each sitter should be catered for as well as possible. It requires a very great amount of mental effort to treat each sitter as if a diploma depended upon the results, and too often the ordinary run of clients are treated in a mechanical fashion, reserving one's best self for sitters that are naturally pleasing, or from whom a big order is expected. Once get into the

way, however, of concentrating the whole mind upon each sitter, however plain or poor, and the work will improve with a bound. It is decidedly a strain to do this, but to do less is justice neither to the worker nor the customer.

One great thing that makes for good work is exposure; we would go further, and say no other part of the technical side of photography has so much bearing on the subsequent result. The professional photographer is popularly supposed to be infallible in this respect, but we believe that the majority of studio exposures are made with very little thought to light value or the diaphragm in use. The latitude of the modern dry plate is responsible for this state of affairs. Useful as this quality is, it is too often abused, for a greatly over-exposed negative often differs but slightly in appearance from a properly exposed one. This is the more noticeable in the case of a plate developed with pyro-ammonia, most formulæ for which are extremely kind to over-exposure. The difference in printing value, too, is not very evident, except to those who are used to perfect negatives, so naturally the man who over-exposes as a habit is unaware of his failing. To the critical eye, however, the difference between the brilliancy and withal softness of the correctly exposed negative, with its beautifully graded high-lights and rich shadows, and the flatter look of the other is at once apparent. The high-lights are the chief indications. They are blank and lacking gradation, not necessarily blank white, but without the subtle differences of tone that make the perfect print.

The general results may appear to a photographer to be good average work, whilst occasionally a really astonishing result is achieved in technique, and is put down to some kind combination of circumstances; this in all probability is that the latter is the one negative perfectly exposed. There is great latitude in exposure, but little latitude in the making of the perfect negative. Under-exposure is easily detected and shunned; over-exposure is more insidious, and therefore more dangerous.

The American fraternity appreciate the value of the larger size picture taken as an extra position. Very few Britishers speculate an extra plate and a little extra time, but it undoubtedly pays. It is advisable to use a lens for the ordered pictures that will also cover the larger size, so that the latter can be taken with little fuss or bother. A proof shown quite as a surprise is more telling than when the sitter is prepared to see a larger print.

The advice to study the old masters is still as necessary as ever, but the modern masters are quite or more helpful to photographers. The former advice can now be cheaply followed by purchasing reproductions of the different artists' works in certain sixpenny volumes, whilst the modern work is constantly reproduced in popular magazines, in Royal Academy annuals, and in our excellent contemporary, "The Studio."

Happy is the man who can strike upon a novel and original idea for his own exclusive high-priced line. If one cannot invent anything new one should certainly run a better-paying style than the average work, not only for the occasional wealthy sitter, but also to enhance one's reputation in the eyes of those who may be prospective clients. Paper mounts in folders, aërographed carbons, platinotypes with pencilled backgrounds, coloured Cosways are a few suggestions.

Office methods should receive more attention, and above all a set of simple books should be kept. This is all the more necessary as the income-tax gentlemen are extremely alert and pressing just now. Moreover, the contingency of ultimate sale, however remote, should constantly be remembered. The card filing system is one of the most useful aids to business and orderliness ever invented. Pirie Macdonald's or some other system should be installed immediately.

## PROFITABLE FORMS OF CARBON PRINTING. I.

WITHOUT wishing to suggest that carbon printing, pure and simple, is not a process capable of proving remunerative to those who practise it—in fact we hold a quite opposite opinion—we wish to draw attention to one or two variations of the ordinary procedure in which we think some emphasis may be laid on account of the use which can be made of them as means of profit-earning in the professional photographer's business. We are not exaggerating when we say that no printing process is so susceptible of modification, none is so readily applied (with very little actual departure from the accustomed method) to producing something distinct and novel in the way of a result, as is the carbon process. The changes which may be rung on colour of tissue and nature and texture of the final support of the print are almost endless, and are particularly appropriate to the methods of the professional photographer. It is not necessary to speak of many of these, since they call for no knowledge or experience additional to that which every carbon printer may be expected to have. But we may draw attention to one or two departures from the usual routine of the process, the practice of which, under suitable commercial conditions, may be reasonably expected to put money in the photographer's pocket.

In this first article we would draw attention to the use of the hand-made Japanese vellum papers, obtainable in this country of different substances and textures.

These papers are much used for impressions from engraved plates and photogravure plates, and the prints upon them are exceedingly fine. Some few of the higher-class photographers have for some time past employed them for mounting their best pictures upon. These are mostly platinotypes, sepia and black, and carbon, and the results are very artistic. The peculiar sheen—due to the long fibre of which the paper is made—on the Japanese paper is entirely unlike the surface of any other paper, and gives the picture upon it quite a unique appearance. In the case of engravings on these papers the impression, of course, is on the paper itself, and the effect is infinitely superior to that obtained when a print on another paper is mounted upon the vellum. Furthermore, when a print is mounted on the vellum, the latter becomes cockled, unless the mounting is done by the dry method. It goes without saying that, by the dry method of mounting, any pictures can be mounted on even the thinnest Japanese paper without the slightest cockling, but still the results are not the same as if the image itself was direct on the paper.

Yet carbon pictures in which the carbon image is direct upon the paper are easy to produce either by the single or double transfer method, as the Japanese paper is one of the hardest and toughest papers obtainable. Whichever method be used, the paper has to be coated with gelatine. If the picture is done by the single transfer process the paper has, of course, to be subjected to warm, or perhaps quite hot, water in the development of the image. These treatments entirely alter the peculiar sheeny surface which is the chief character of Japanese papers. There is, however, a method of obtaining the image direct on the naked paper without in any way interfering with its character, since the paper has neither to be wetted nor have any coating upon it. The method is, however, not very generally known, hence the present article. In a word, the picture is a double transfer one, developed on a temporary support and transferred to the Japanese paper—not in the usual manner, but in the following way: After printing the tissue is mounted on a flexible support and treated according to the usual practice,

except that it is not alumed. The ordinary commercial shellac flexible support is not suitable for our present purpose—at least, we have not been very successful with it, the reason for which will be alluded to later on. What should, and, according to our experience, must, be employed is the indiarubber temporary support that was used in the early days of the carbon process. That is simply ordinary good quality paper coated with a solution of indiarubber. This the user will have to prepare for himself, as it is not an article of commerce. A solution of indiarubber is made by solution in benzole so as to obtain a mixture about the consistence of very thick cream. The best kind of rubber to use is what is known as "masticated," which dissolves freely in benzole. Vulcanised rubber cannot be used, as it is insoluble in benzole. In making the solution it is best to make it thicker in the first instance than is required, and then to dilute it afterwards. If it is made too thin in the first instance it is more trouble to thicken it afterwards by the addition of more rubber than it is to thin down a thick solution. The most convenient way to obtain a suitable solution is to purchase, say, a pound tin of rubber solution as sold at the indiarubber shops, and thin it down to the desired consistence with benzole.

To coat the paper the solution is poured into a dish and the paper floated upon it for half a minute or so, avoiding air bubbles. Or the paper may be slowly drawn over it, when a smaller amount of the solution will suffice. When taken from the solution it is pinned up to dry, and as a considerable quantity of liquid will drain off, a second vessel should be put to catch the drainings, which, with more benzole added, can be used again, so as to economise the rubber. The paper is best coated a few days before it is required for use, so as to permit of the complete evaporation of the benzole. With regard to the paper itself, almost any hard, smooth paper will do, provided it will stand the hot water in the development of the picture. Any of the raw papers made for photographic purposes answer admirably.

This support is used in precisely the same way as the ordinary commercial flexible support, except that it has not to be waxed. It, with the exposed tissue, is immersed in cold water, the two squeezed together, and then, after resting the usual time, developed in the ordinary way, but without using an alum solution. It is finally hung up to dry. When dry, the face of the picture is coated with a solution of a soft gelatine, and again allowed to dry. The gelatine may be applied with a camel hair brush. The most suitable brands of gelatine for the purpose are such as Cox's soup gelatine, or Nelson's No. 2 soluble. Two ounces of either of these in a pint of water is a suitable strength to employ. If the ordinary flexible support be used the finer tints of the picture are liable to be disturbed when this gelatine solution is applied to the dry picture, but this does not happen when it is on the rubber support.

When the gelatine is dry the print is trimmed to size, and is ready for transferring to the Japanese paper. That is done as follows:—The gelatine coating is evenly moistened with a sponge lightly charged with water, but not made really wet. The Japanese paper, having been marked where the picture is to go, is laid on the bed of a rolling press, preferably with a roller heated, but not made very hot. The print, face downward, of course, is placed in position. It is then passed slowly two or three times through the press, when firm adhesion will be established. The whole should then be allowed to rest for an hour or two for the gelatine to get thoroughly dry, when the temporary support is removed. For this, a small piece of sponge is lightly charged with clean benzole, and the back of the support is gone over with it, just to moisten it. After resting two or three minutes the support can be lifted off,



and we then have our carbon picture direct on the Japanese paper without any intervening paper. Should any rubber be still on the picture it can be slowly rolled off with the ball of the finger, but that will rarely be the case. It was mentioned above that after the picture was developed it should not be alumed; the reason is that when alum is

used there would be sometimes a difficulty in stripping off the support, as alum seems to have a tanning effect on the rubber.

We must defer until the next article another application of the carbon process of which, we suggest, profitable use may be made.

## DR. MEES ON SCREEN-PLATE COLOUR PROCESSES AT THE SOCIETY OF ARTS.

A NUMEROUS company, in which were many well-known personages of the photographic world, assembled at the Society of Arts on Wednesday evening last, January 15, to hear a lecture by Dr. C. E. Kenneth Mees on "Processes of Screen-Plate Colour Photography." The lecturer illustrated his discourse with a number of experiments, diagrams, and specimens. His treatment of the subject differed from that of most of those who have lectured on or demonstrated the newer methods of colour photography, in that it said practically nothing on the practical manipulation of the plates, but dealt with the principles and methods of their manufacture.

Dr. Mees pointed out that the screen-plate was an additive method of colour photography, and the series of filters distributed between the glass of the plate and the film of emulsion required to have properties similar to those necessary in additive colour methods with three separate plates. The lecture demonstrated the mixture of coloured lights, which is the basis of the additive process. The mode of action of the screen-plate in recording colours was demonstrated with a screen, made by the lecturer, of the ruling of fifteen lines per inch. The lecturer next referred to the origination of the screen-plate idea by Ducos du Hauron in 1868. The next stage was reached by Professor Joly in 1895, at which time separate screens ruled on gelatine-coated glass were placed for a time upon the market. MacDonough, in America, had previously employed a similar process, coating plates with grains of coloured shellac and attaching these latter to the plate by fusion. MacDonough, however, gave up the grain method in preference for a linear screen, the manufacture of which was undertaken for some time in America. Two examples of the Joly process lent by Professor Joly were projected. Passing to the next stage in screen-plate colour photography, namely, the embodiment of screen and emulsion in one article, Dr. Mees credited Mr. Powrie with having been the first to carry out this process practically, and described the method of making the Warner-Powrie screen-plate. On projection in the lantern microscope, the divided blue line in the Warner-Powrie screen was seen, as was also the great mechanical perfection of the linear formation.

Alluding to the Lumière Autochrome plate, the lecturer gave the size of the starch grains as between 1-1,000 and 1-2,000 of an inch in diameter, and described the mechanical perfection of the plate as "astonishing."

In dealing with the Krayn screen-plate, made from sections of blocks built up with sets of red, green, and blue celluloid, it was pointed out that with a screen of very fine line the celluloid section must be very thin, probably so thin as to require mounting on glass. Moreover, if the line is to be very thin, the celluloid requires to be dyed very deeply to obtain colour filters of the necessary depth.

As regards the absorptive properties of the filters, the conditions of additive colour processes required that the taking filters should be such that the red had a sharp cut and transmitted no green or blue. The green required to overlap the red, and also the blue to some extent. The blue filter should transmit no red. In viewing filters, on the other hand, they needed

to have sharp absorptions without overlap. In screen-plate processes, where the negative obtained on exposure was converted into a positive, the taking filter became the viewing filter and a compromise had to be made between the two conditions. About the best compromise appeared to be the selection in which the regions of absorption touched, but did not appreciably overlap. Such was the case in the Autochrome plate. The effect of abrupt and overlapping absorptions in the projecting filters was shown by projecting the same transparency with the two kinds of filters: in the latter case degradation of the colours was produced. After detailing methods of testing the filters, Dr. Mees spoke of the first condition of a screen-plate, namely, its neutrality of colour. He found the Krayn plate the best in this respect, it being very slightly green. Warner-Powrie plates which he had seen were slightly violet, and the Autochrome plate faintly pink.

The thickness of the colour lines was an important point, because if the lines had any appreciable thickness in proportion to their width, parallax errors, arising from light falling on the plate at an angle, would be produced. This cause of limitation of the fineness of the lines was a far more serious one than the grain of the emulsion film. The fineness of grain of a rapid emulsion, such as could be used for panchromatic work, allowed of a screen as fine as 1,000 lines per inch.

The lecturer believed that the panchromatising of an emulsion of sufficiently fine grain would have to be done by bathing, and sensitiveness adjusted to the filters by the use of a yellow compensating light-filter. The adjustment of these conditions should be such that the screen correctly reproduced a scale of greys in neutral gradation. As regards the speed of screen plates, the lecturer estimated the sensitiveness of the Autochrome emulsion exposed through both the grain filters and correcting light-filter as about 1 Watkins. He thought that with our present knowledge of emulsions a speed of 6 Watkins could not be exceeded.

Dealing with methods of converting a negative into a positive image, it was pointed out that the sensitive film must be exposed and developed through to the back, and therefore required to be very thin. A direct method of reversing with a developer containing thiocarbamide might make it possible to use a thicker film of emulsion.

In printing a positive from a screen-plate negative, Dr. Mees explained the causes of faint or degraded colours due to overlapping of colour elements in the respective plates, and described Mr. Powrie's method of angling by which this obstacle to the making of perfect transparencies was overcome. In the case of colour negatives on Autochrome plates, the diffusion which took place in printing a positive was sufficient to give a fairly satisfactory result, but never one quite equal to a direct reversed positive.

Summing up the present position of screen-plate colour processes, the lecturer thought that their application at their present stage of development must necessarily be limited. Their opacity necessitated strong illumination

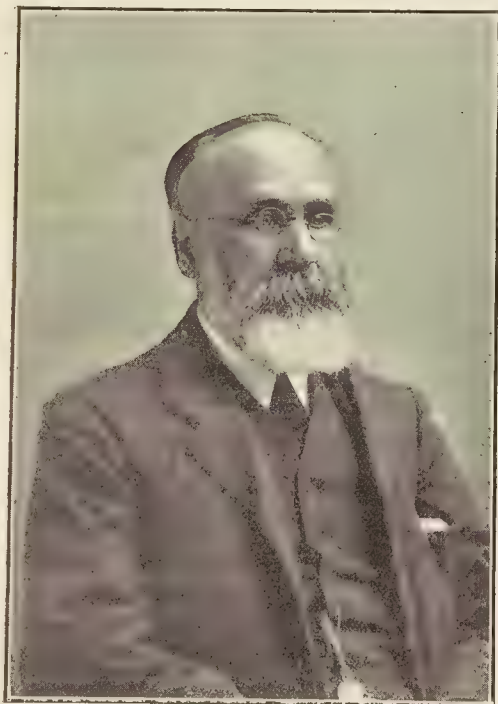
for projection, but their most immediate want was some improved method of bleach-out colour printing by which prints on paper could be obtained. As the full brilliancy of such bleach-out prints necessitated an angling movement to ensure full action over the bleach-out paper, the lecturer believed that plates with the colour filter elements in lines presented the greatest possibilities for the future.

The text of the paper will be shortly available in the Journal of the Society of Arts, when we hope to reprint it in full, together with a report of the discussion which followed it.

#### THE ROYAL PHOTOGRAPHIC SOCIETY PROGRESS MEDAL.

AWARD TO MR. J. STERRY.

It was announced at the meeting of the Royal Photographic Society on Tuesday last that the Council had conferred the award of the



John Sterry, Treasurer, Royal Photographic Society.  
Awarded "Progress Medal," January 14, 1908.

Society's "Progress Medal" upon Mr. John Sterry, "for his photo-chemical investigations, and especially for researches and writings on sensitometry, and on the action of substances on the latent image."

Mr. Sterry is one of the few workers who have repeated the experiments of Hurter and Driffeld, and others, in sensitometry, and he is one of the very few British investigators who have turned their attention to research and the latent image. At such short notice it is impossible adequately to review Mr. Sterry's photo-chemical work, but this will be done in an article by Dr. C. E. Kenneth-Mees, which we shall publish in our next issue.

**RÖNTGEN SOCIETY.**—The current issue of the "Journal of the Röntgen Society" contains a photogravure portrait of Dr. Thurstan Holland, better known, perhaps, to photographers as the president of the Liverpool Amateur Photographic Association. Dr. Holland was president of the Röntgen Society during 1904-5. The portrait portrays him in apparently almost an Instonian mood. The personality, possibly, of the unnamed photographer.

#### THE TRESS COMPANY'S PROFESSIONAL SHOWROOM

PASSING westward along Oxford Street, a few doors past Frascati Restaurant, a projecting sign is seen in white script on the right-hand side a step or two up Rathbone Place. It is an indication of the new premises of the Tress Company, known for its many special lines for professional photographers, and the new address—3, Rathbone Place, W.—will doubtless remain as common in the order book of many photographers as was that of 42, Oxford Street, where the firm's business has grown to its present dimensions within the short space of five years. In moving to Rathbone Place, the Tress Company has advantaged itself in several ways. It has installed enlarging facilities, which allow it to deal at once with urgent orders in the way of bromide and other enlargements. It has given itself space for a shop in which repairs to apparatus can be done for its customers; it is able to manufacture studio accessories and other of the professional requisites which it supplies; and, lastly, it provides on the street level a large showroom, in which the customer can see for himself the various forms of service which are at his disposal.

On the occasion of a visit paid within the last few days, we found Mr. Tress putting the finishing touches to arrangements which had been made during the upheaval of a removal from the Oxford Street premises. A few minutes' conversation with him brought to our notice a few of the inducements offered to professional photographers to visit Rathbone Place. In the first place, a portion of the showroom has been converted into an artificial light studio, and is fitted with incandescent gas, arc, and mercury-vapour installations. A camera in readiness for taking the customer's own lens is provided, as are also facilities for development by the customer of the test plates he may choose to expose. This offer to let the customer test a light before purchase should guarantee the Tress Company's *bona fides* as suppliers of all three forms of artificial light. Around the showroom may be seen examples of portraiture by mercury-vapour, etc., but the actual exposures must be more satisfactory to the prospective purchaser.

Among other features of the showroom are enlargements at the various and very moderate prices for the different styles, the print in each case being placed in the appropriate frame, also priced, thus: enlargement, 12 by 10, 3s. 6d.; frame, 2s. 9d. The firm also displays a great variety of mounts which it stocks, and can block to customer's order on the day of receipt of order for despatch the same evening. Studio chairs, settees, and accessories are also shown in a number of patterns and at very moderate prices. We were astonished to see what twenty or thirty shillings would purchase in the way of an oval table, carved settee, or terrace accessory. It is invidious to select any particular items from the many specialties of the Tress Company for professional photographers, but two may be singled out—namely (1) an order book (foolscap size), which provides spaces for the details of a sitter's order, and will accommodate 6,000 entries (price 2s. 6d.), and (2) a series of border prints for attachment to any mount, and sold as the "Rathbone." Each print has a central blank space, square or oval (where the photographic portrait is subsequently mounted), and is attached to almost any mount, giving, in the final result, a very effective Cosway style of picture. The above are but two of many novelties to be seen at Rathbone Place, but we have said enough to prove that photographers will not be disappointed in giving the Tress Company a call, or in applying for the new catalogue, almost ready.

#### A VETERAN ON PRESS PHOTOGRAPHY.

ON Thursday in last week the weekly lecture at the L.C.C. School of Photo-Engraving, Bolt Court, was on "Press Photography," and the lecturer Mr. Reinhold Thiele, one of the pioneers in photography for the Press, and still represented by his work in many newspapers and magazines. Mr. Thiele dislikes talking of himself, and though his discourse on the use of the camera in illustrated journalism was necessarily an account of incidents in his own career, he was silent as to his early training in Hanover and Hamburg, and his work as water-colorist and operator to the London Stereoscopic Company in Cheapside. But it was about twenty years ago, when Mr. Thiele established himself in business at his present studio in Chancery Lane, that he commenced to evidence the resource which has later made him the hero of many a photographic achievement.



Mr. Thiele's Press work commenced with a series of prominent sportsmen photographed on the scenes of their own records, among which was a number of portraits of cycling pace-makers apparently riding round the course, but nevertheless showing all the detail and definition not usually associated with rapid exposures—the ingenious Thiele had supported his mounted cyclist by a fine piano-wire secured to a fence in the background: the cycle could then be placed at the proper angle indicative of the rounding of the curve at high speed.

Mr. Thiele was one of the photographers to make early and effective use of flashlight, which, in the form of the Weiss lamp he employed very largely as an accessory to daylight in the photography of interiors or workshops and factories where a brief exposure had to be given in order to secure work-people in the act of carrying on their occupation.

Yet, as Mr. Thiele told his audience at Bolt Court last week, technical skill has sometimes to play second fiddle to mere human ingenuity, and he instanced a case in point in which he had to photograph a procession of the judges moving up a transept of Westminster Abbey. No flashlight there, yet a photograph had to be secured of a moving procession under conditions which the photographer knew meant an exposure of at least twelve seconds. The solution of the problem proved that when fast plates and rapid lenses have failed there is still the sangfroid of the photographer to be reckoned with. Having focussed upon a part of the route which the judges were bound to traverse, Mr. Thiele confessed to having inserted the dark-slide, drawn the shutter, and left the camera all ready for an exposure. Then he advanced to meet the procession as it entered the Abbey, led by half-a-dozen vergers, who, in turn, were headed by their senior. Meeting the procession while it was yet some way from the spot focussed upon, Mr. Thiele quickly explained the position to the leader. "I want you," he said, "when you reach that pillar simply to stop dead and count twenty slowly. Nobody will ask you why you stopped, and I can get the photograph." And he hastened to the camera in time to give an exposure to a number of his Majesty's judges, all of whom had pulled up in the field of the lens simply because the leader of the procession had obeyed orders.

Mr. Thiele's advice to the tyro in Press photography is: Conduct yourself in a seemly manner, but do not ask for permission if you see that you can get on without it. Usually if you ask you will be refused or restricted, but if you go about your work quietly, as a rule nobody will meddle with you. Good temper is equally a necessary part of the equipment of the Press photographer, and is particularly needed when, as is often the case, he has to obtain a portrait of some prominent person in the act of addressing a meeting or taking part in some public celebration. Mr. Thiele related the persuasion which he had had to exert in inducing a politician to rise for the purpose of a flashlight photograph. He was evidently speaking of the making of a photograph very different from many of those which appear now in the illustrated daily and weekly Press when no collaboration with the subject is sought by the photographer, and when, as a consequence, the portrait is often unrecognisable.

Asked by a member of the audience what aperture of lens was used on a certain occasion, Mr. Thiele confessed that he never knew at what opening the lens was employed when he took his picture. He was accustomed to stop down until he secured the desired definition of the subject, and he then judged the exposure by the brightness of the image on the focussing screen. For hand-camera work he had used a twin-lens camera very largely, although he had seen operators of Underwood and Underwood in South Africa make very effective use of a reflex camera. The latter was held upside down at arm's length above the head of the user as he sat on horseback. He had seen most satisfactory stereoscopic pictures produced in this way. As regards the choice of focal-length of lens in his own work, he tried whenever possible to use an angle of 45 deg., since it gave a more pleasing perspective than others, or, rather, permitted a point of view which gave good perspective.

Concluding with a brief reflection on the Press photography of the present day, Mr. Thiele assured his hearers that the comfortable times of a year or two ago were gone. Nowadays the Press-photography firm was kept informed every few minutes during day and night of any event to which it might be worth while to despatch

an operator. The Press photographer had to chase a lost airship across the three kingdoms and be finished with his work before the War Office officials appeared on the scene to restrict his further operations, not, perhaps, the happiest certificate of his smartness. With such resources as these behind the firms specially devoting themselves to the business, the individual photographer stood little chance. Mr. Thiele declared that the next inevitable step was the development of the plates and the making of bromide prints on the way back to London, but Mr. Newton, Principal of the Bolt Court School, gloomily reminded him that journalistic "hustle" would not have reached its limit until the half-tone printing block was made during the return journey of the Press photographer.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents have been received between January 1 and 4:—

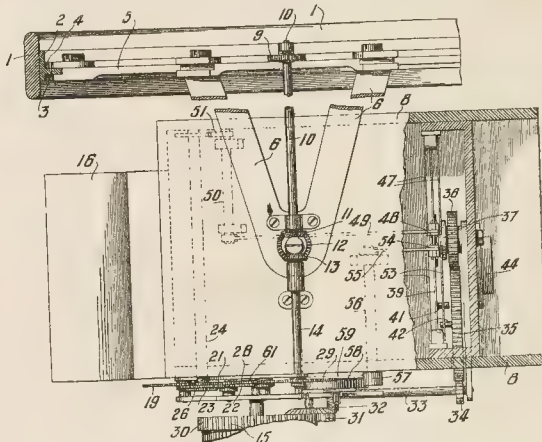
DEVELOPMENT.—No. 31. Improved photographic developing machine. Magnus Niell, 88, High Holborn, London.

CAMERAS.—No. 32. Improvements in pocket cameras. Magnus Niell, 88, High Holborn, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

BALLOON OR KITE CAMERA.—No. 9,445, 1907. The invention consists of an apparatus by means of which the operator may be able to attach the camera to the balloon in such a manner that its angle of direction may be accurately set before the balloon is allowed to ascend, so as to control the angle at which the view is to be taken, or to compensate for the inclination given to the balloon by the force of the wind; also when using a focal-plane shutter, in such a camera, to employ a metal auxiliary shutter for protecting the fabric covering the plate from the direct action of light coming through the lens, except for a minute fraction of time, prior to and subsequent to the exposure of the plate.



It is also desirable that the camera attached to the balloon may be capable of taking several photographs without necessitating the hauling down of the balloon to the ground between each exposure, and also that some adjustment should be effected to enable the several exposures made during one ascent to comprise different directions and thus take several views instead of repetitions of the same view.

The figure is a cross sectional view of the camera.

1, is the hoop which is attached to the leading lines of a bal-

loon and forms the base of support for the camera, and also the point of support for a cross-tree carrying a bridle for taking the strain from the ground. 2 is a collar having a flange 3 thereon, situated within the hoop, and an interior rack 4 is carried on the flange 3 to which it is attached; the said flange 3 also supports a turn-table 5, which carries pending side frames 6, and on the lower ends of these side frames trunnions 7 are provided on which the camera proper 8 is carried and can be adjusted angularly.

9 is a pinion carried on a shaft 10 mounted in bearings connected to the turn-table and to one of the pending frames 6, and the lower end of this shaft carries a bevel wheel 11, which in its turn gears with an idle bevel wheel 12, and communicates therethrough with a further bevel wheel 13, carried on a spindle 14 mounted in bearings on the camera.

In this manner the camera is capable of being adjusted on its trunnions to any desired angle from the horizontal, at which angle it may be clamped by suitable means (not shown in the drawings) and by the rotation of the spindle 14 motion is communicated through the bevel gearing irrespective of the angle at which the camera has been set, in such a manner as to cause the turn-table to rotate within the hoop in accordance with the number of turns given to the spindle 14.

Clockwork mechanism is provided for storing sufficient power to enable the various movements required to be performed while the camera is in the air in order to take a series of photographs, and in the example shown in the drawing the mechanism has been arranged to take six photographs extended over an angle of 180 deg., so that each photograph will be taken about 30 deg. different in direction to the photograph preceding it.

John Edward Capper, Balloon Factory, Farnborough, and Griffith Brewer, 33, Chancery Lane, London, E.C.

**SCREEN-PLATE COLOUR PRINTS.**—No. 495, 1907. The invention relates to improvements in the method of producing three-colour screens for colour-photography as described in the British specification No. 1,938 of 1906 ("B.J.," July 6, 1906).

In the specification mentioned the production of lined screens for colour-photography is described. It has, however, been found that it is possible to produce from these line screens others which are composed of a number of colour points. These screens are obtained by uniting line screens (of a thickness equal to the thickness of their lines and produced in accordance with the previously mentioned methods) so as to form a homogeneous block, which is then cut into sections transversely to the lines of the layers of which it is composed.

The invention makes it possible to produce positives, which appear as coloured photographs, when seen from above, so that they make the impression of naturally coloured pictures on paper.

In order to produce such positive-screens the block from which the screens or veneers are cut is made not of transparent but of semi-transparent thin layers of the three primary colours. The abandonment of the transparency, however, must be carried out in such a manner that the colours possess the necessary brightness when seen from above. This, however, can only be attained if a white substance similar to china is the bearer of the pigment. If layers of nitro-cellulose are employed the transparent celluloid is made semi-transparent by adding a finely distributed white pigment such as zinc-white or the like, whereupon the celluloid becomes dulled in a suitable manner. The layers or bands in the three ground colours thus produced are piled up one upon another alternately so as to form a block which is cut into shavings transversely.

The shavings or screens thus produced are then covered with the panchromatic sensitive plate. The colour screen-plate negative is printed on the above-mentioned three-colour screen in such a manner that the panchromatic plate receives the light through the positive screen.

When developing the positive, the colour elements not required in the picture are covered by reduced silver, and after the fixing a picture is obtained which shows the natural colours of the object.

Instead of slicing the block in a planing machine into single shavings, long bands can be shaven from the former in a machine: for which purpose the block is made with rounded edges with a base parallel to the layers of which it is composed.

For the production of the block for the negative process as well

as for the positive process, the following method has been found to be the most suitable. Plates of about 1 mm. thickness are produced in the first instance by pouring or cementing the single celluloid layers one upon another in the three colours alternately. These plates, which are coated with the cement on both the surfaces, are assembled to the required thickness and are then united to a homogeneous block by means of hydraulic pressure.

This method represents a technical as well as an economic improvement of the methods proposed or used before as follows:

If the block is produced as proposed in the Specification 1,938 of 1906, many thousand single layers are necessary. If the block, for instance, is required to be 60 cm. broad and to possess 20 lines per millimeter, 12,000 layers are necessary. For piling up the layers one workman only can be employed at the time. But plates are produced in the first instance and are then united as to form a block, any number of workmen can be employed.

Further, if the single layers are piled up over each other until the required thickness is obtained it is not possible to obtain the lines absolutely straight. As soon as the block has obtained certain thickness it becomes more or less soft or a plastic mass which by its own weight as well as by the pressure caused by handling it necessarily undergoes deformations. These deformations cause slightly waved lines in the ultimate screens. This drawback is avoided if the plates produced in the first instance have so small a thickness that the single layers of which they are composed are necessarily parallel to the base on which they are piled up. Perfectly straight lines are thus obtained. This straightness of lines is maintained in the block, as the equal and even hydraulic pressure does not disturb it in any way. In case the block is not intended to be sliced into single layers but to be peeled off into long bands, discs are cut or stamped out of the plates manufactured as above, and are then assembled so as to form a block, with rounder edges. Robert Krayn, 24A, Marien Strasse, Berlin.

**"SULPHIDE" TONING WITH THIOSTANNATE.**—No. 12,364, 1907. The invention relates to the toning of photographic pictures by means of the thioannates of the alkali-metals and metals of the alkaline earths. Sodium sulphide, used for sepia tones, has the disadvantage of keeping badly, and even in the solid state it readily deliquesces and becomes oxidised. Sodium sulphide enters into combination with stannic sulphide forming well-defined crystalline compounds such as  $\text{Na}_2\text{SnS}_3 + 3\text{H}_2\text{O}$  (Ditte, *Comptes Rendus*, 95, 641) and  $\text{Na}_2\text{SnS}_4 + 12\text{H}_2\text{O}$  (Kühn, *Liebigs Annalen*, 84, 110), containing one or more molecules of  $\text{Na}_2\text{S}$  to each molecule of  $\text{SnS}_2$ , besides a varying number of molecules of water of crystallisation; and similar compounds of stannic sulphide with the sulphides of the other alkali-metals and metals of the alkaline earths are also well-known.

The inventors have now found that the thioannates of the alkali-metals or metals of the alkaline earths can be used instead of or together with sodium sulphide for obtaining sepia tones on silver prints. They possess the important advantages of being stable, non-deliquescent substances.

The following is an example of use:—

Prints, silver images of which have been converted into a silver-haloid by any suitable method, are washed, and toned in a solution of 1 part of sodium thioannate in 100 parts of water till the action is complete and then washed again; good permanent sepia tones are thus obtained.

The above preparations may be varied, or thioannates of the other alkali-metals or metals of the alkaline earths may be substituted for sodium thioannate.

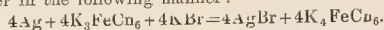
This process may also be used for intensifying photographic negatives, as the image obtained is considerably more opaque to actinic light than the original silver image. Henry Solomon Wellcome, Snow Hill Buildings, London, E.C.; Arthur Gerald Bates, Dartford, Kent, and Frank Clement Starnes, Dartford, Kent.

**CARBON PRINTS FROM SILVER IMAGES.**—No. 19,889, 1907. The invention relates to a process of producing pictures, photographic printing plates, etc., hitherto made by the action of light on chromates.

Use is made of a reaction which metallic silver undergoes in contact with a solution of bichromates, ferricyanides and haloid or like (sulphocyanide) compounds, containing catalytic agents such as salts of cerium, iron, uranium, nickel, cobalt, vanadium,



titanium, manganese, mercury, copper, etc. Such solutions react with silver in the following manner:—



The potassium ferrocyanide which is formed is converted by the bichromate which is present into potassium ferricyanide, forming reduction-products of chromic acid, which are able to harden colloidal substances. Although the conversion of the silver into bromide of silver takes place almost instantaneously, it has been found essential to accelerate as much as possible the second phase of the reaction, i.e., the oxidation of the ferrocyanide into ferricyanide. This is done by adding catalysers.

According to the process, pigment pictures can be made from photographic prints, made on print-out or developed papers. For this purpose the non-fixed or preferably fixed and well-washed pictures are soaked in water, and a pigmented paper is pressed on to the damp copy, the paper being impregnated with the mixture of the previously mentioned substances. It has been found suitable to add glycerine to the liquid used for soaking. "Celloidin" (i.e., collodio-chloride paper) pictures, particularly where the paper is old, are advantageously soaked in alcohol, preferably with an addition of glycerine. If strong solutions are employed for impregnating the pigmented paper, it is preferable to remove the excess of the sensitising solution by weak pressure.

The pigmented paper can be developed whilst it is squeezed on to the silver print, or the pigmented paper can be separated from the print under water after sufficient contact, transferred in the usual manner on to paper, glass, wood, metal, etc., and developed thereon. The bleached print which remains behind can be re-developed and used again. If development is proceeded with whilst pigmented paper is in contact with the copy, it is preferable to free the finished picture from the silver compounds which have formed, as well as from silver which has possibly remained unchanged (say, by thiosulphate, or such together with ferricyanides), for the purpose of avoiding darkening. For gelatine prints a preliminary tanning with alum, formaldehyde, and the like is preferable before the pictures are employed for this pigment process.

For an original on printing-out paper a solution for sensitising the pigmented paper of about the following composition can be employed:—

Potass. ferricyanide .....	2 gr.
Potass. bichromate .....	3 gr.
Potass. bromide .....	1 gr.
Cerium sesquisulphate .....	0.17 gr.
Water .....	100 gr.

The quantity of the sesquisulphate of cerium can be increased two-fold; further, 0.1 gr. alum and 0.05 gr. citrate of potassium can be added to such a solution as the above. Also iron-alum or other iron salts can be employed together with cerium salts by adding about 0.085 sesquisulphate of cerium, 0.047 gr. ammonium-iron alum, and 0.05 gr. citric acid to the above solution. For employing two catalysers simultaneously it is preferable in many cases to use a weaker bath, such as is given for originals on developing paper, and to add to it in addition about 0.29 gr. sesquisulphate of cerium and 0.05 gr. citrate of potassium per 100 c.cms.

It is well to add to these sensitising solutions small quantities of substances such as alum, tungstate of sodium, which exercise a tanning action on gelatine, and to modify their tanning action by an addition of weak acids having no reducing action on chromic acid, acid salts or alkaline compounds of organic acids which are suited to convert the metals which have a tanning action into a complex compound. Likewise suitable quantities of easily volatile substances as alcohol, acetone, and the like may be added to the sensitising baths.

For developing-paper originals the following solution, amongst others, has been found suitable:—

Potass. ferricyanide .....	1.0 gr.	} in 100 gr. water.
Potass. bichromate .....	0.5 gr.	
Potass. bromide .....	0.5 gr.	
Sesquisulphate of cerium ...	0.085 gr.	
Ferric ammonium sulphate.....	0.095 gr.	
Citric acid .....	0.05 gr.	

Generally speaking, both for print-out papers as well as for developing-papers, a contact with the pigmented paper of three

to five minutes suffices with weak pressure, in order to obtain pigment copies capable of development.

The patentee claims to have recognised that the reduction of the bichromate when the above baths act on the silver print (i.e., the formation of substances, such as chromate of chromic oxide, which have a tanning action, and which produce the pigment picture) is accelerated by adding substances which act catalytically, such as the above-named salts of cerium, iron, uranium, nickel, etc., or mixtures of such compounds, to the sensitising bath which consists, as is known, of potassium ferricyanide, bromide of potassium and potassium bichromate. Dr. Rudolf Boerner, 125, Chaussee Strasse, Berlin.

**CINEMATOGRAPH MECHANISM.**—No. 15,459, 1907. The claim is for a cinematograph projecting lantern having a spur gear with a stationary axis, a handle for revolving this gear, a movable carriage, a pinion carried by the carriage and engaged by the gear, a spur gear fixed to the pinion, a second pinion carried by the carriage and engaged by the last-named spur gear, a shutter carried by the carriage, and mechanism through which the last-named pinion revolves the shutter. Siegmund Lubin, No. 21, South 8th Street, Philadelphia, Pa., United States of America.

**DARK ROOM CLOCKS.**—No. 10,538, 1907. The invention consists of mechanism of a clock which can be set to give a signal at the end of a predetermined time. The first claim specifies the means for determining the duration of the development in such a manner that the setting scale consists of arcs of circles of different lengths and provided with divisions, these arcs being designated to correspond with the markings on the scale of the seconds' index, their divisions being numbered in correspondence with the numbers given to the plates, so that by setting the index on one of the lines of the scale a double lever carrying a bell hammer is adjusted on a screw-threaded spindle, actuated by the clock-work in such a manner that this lever occupies exactly so much time in reaching its signalling position as is required for the complete development of the plate in question. George Lindsay Johnson, 55, Queen Anne Street, Cavendish Square, London, W.

**DIAPHRAGM SHUTTERS.**—No. 4,024, 1907. The invention consists in the mechanism of a shutter comprising time or bulb exposure parts and instantaneous exposure parts independent of one another, having an operating lever for setting the instantaneous exposure parts which, together with the spring actuating the latter, is unemployed during the manipulation of the time or bulb exposure parts, the entire operation of these parts being ensured by the disengaging lever or by bulb pressure. Wilhelm Kennigott, 64, Rue de Saintonge, Paris, France.

**CONCHOID LENSES.**—No. 4,527, 1907. The invention consists in an optical lens and the process of manufacturing it. This optical lens, which is applicable to all purposes, is characterised by its aplanatism, which is practically perfect, and its large field. A further advantage of the invention consists in the fact that this lens can in practice be employed alone without the employment of a second lens of different material as is usually done to render a lens achromatic. Finally the lens is characterised by the fact that it gives a sharp image of objects situated very close to the lens, say 16 inches away and up to infinity.

The considerations upon which the formation of a lens of this kind are based are as follows:—

Assuming a plane convex spherical lens, the intersection of which by the plane of the paper is  $bac$  (Fig. 1) and that  $da$  is the radius of the arc of a circle  $bac$ . Assuming also luminous point  $e$ , and  $ea$  as the ray emanating from the point  $e$  passing through the optical centre. The image of the point  $e$  should be formed at  $e^1$  on the prolongation of the ray  $ea$  encountering all the other luminous rays issuing from the point  $e$  and refracted by the lens. It is known, however, that this point of encounter is not a single point, the rays falling near the edge  $c$  of the lens intersecting the prolongation of the ray  $ea$  much nearer the lens than those falling near the centre. It is therefore necessary to cause the position of the point  $e^1$  to vary, or by causing it to vary very slightly to make the points such as  $f$  and  $g$  to coincide with the point  $e^1$ .

In accordance with the invention, this result is obtained by modifying the form of the discharge surface of the lens, in such a manner that the meridian of this surface, which from the summit  $a$  to the point  $h$  almost coincides with the circular arc  $a c$ , separates

from it progressively, whilst being external to it from  $h$  to  $i$ . In these conditions the rays emanating from the point  $e$  after their refraction in the lens meet at one and the same point  $e^1$ .

If in place of a plano-convex lens a convergent bi-convex lens be considered, it will be understood that the modification of the luminous rays on leaving the lens may be obtained in two ways; either as just stated, by modifying the admission surface in order to modify, by this very fact, the direction in the interior of the

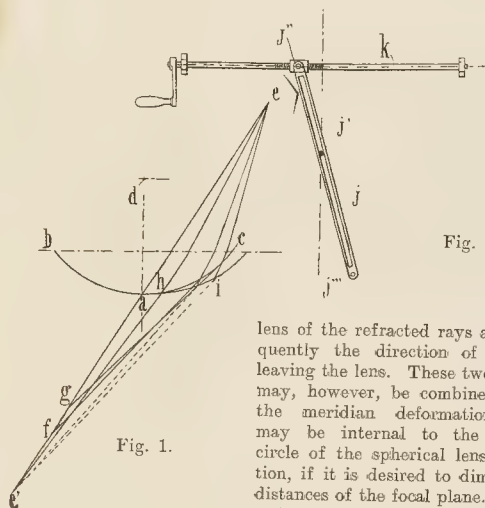


Fig. 1.

lens of the refracted rays and consequently the direction of the rays leaving the lens. These two methods may, however, be combined; finally the meridian deformation curves may be internal to the meridian circle of the spherical lens in question, if it is desired to diminish the distances of the focal plane.

Starting from these considerations, it was first of all necessary to provide an apparatus permitting of tracing in a continuous manner in a plane, the deformation curves for replacing the meridian circle of a spherical lens. This apparatus as shown in Fig. 2 consists broadly of a bar  $j$  capable of sliding and turning around a fixed pivot  $j^1$ , one extremity  $j^{11}$  provided with a nut being traversed by a screw  $k$ . At the other extremity of the bar  $j$  there is fixed a pencil  $j^{111}$ . When the screw  $k$  is turned, the bar  $j$  slides over the pivot  $j^1$  and at the same time turns about it, and the pencil describes a right conchoid such as the curve I represented in Fig. 3.

By modifying the position of the pivot  $j^1$  relatively to the extremity  $j^{11}$  of the bar, curves are obtained like the curve II (Fig. 3) either internal or external to the circle taken as base.

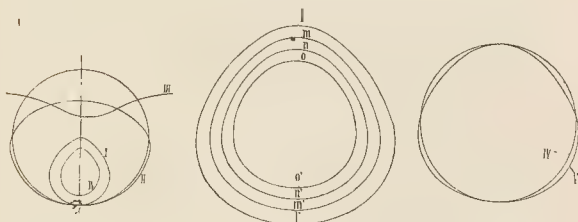


Fig. 3.

Fig. 5.

Fig. 4.

Concentric curves may be obtained by displacing the pencil  $j^{111}$  and the position of the fixed pivot  $j^1$  simultaneously by the same amount; the curve IV concentric with the curve I is obtained in this manner. In the same way the pencil may be placed between the extremity  $j^{111}$  of the bar and the fixed pivot  $j^1$ ; the curve described is then analogous to that indicated at III, Fig. 3. The pencil may also be placed at the prolonged extremity  $j^{11}$  of the bar.

Instead of the extremity  $j^{11}$  of the bar describing a straight line, it may be compelled to describe a circle. In this case the screw is replaced by a disc. The circular conchoids obtained are analogous to the preceding curves. Fig. 4 shows the curve V described by starting from the circle VI as base. Concentric curves are obtained, Fig. 5, by moving the pencil up by a certain amount and

by decreasing the radius of the circle described by the extremity of the bar opposite to the pencil, by the same amount.

If without changing the radius of this circle the fixed pivot moved towards the pencil increasingly pointed curves are drawn by displacing the pivot in the opposite direction increasing elongated curves are obtained. It is therefore possible to draw deformation curves having the same summit and different curvatures, but in as close proximity as desired.

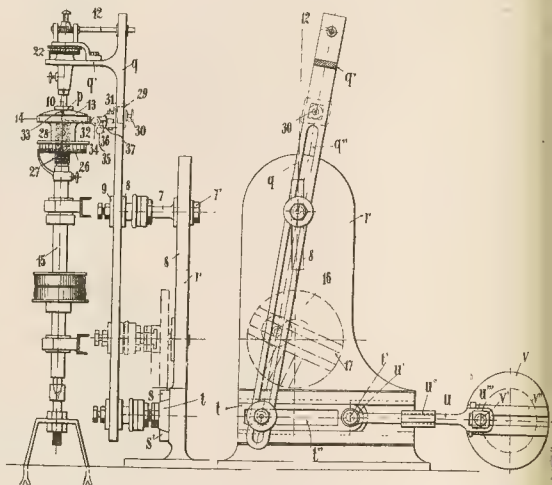


Fig. 6.

Fig. 7.

In order to form a lens, the summits of the curves such as those shown in Fig. 5 are combined.

For example, if it is desired to form a convergent lens, the summits  $l m n o \dots$  which form the interior curves internal on the side of the image are combined with the summits  $l^1 m^1 n^1 o^1 \dots$  which will form the exterior curves turned towards the object. It is also possible to combine the curves  $l m n o$  or to combine the curves  $l^1 m^1 n^1 o^1$ . The choice of these combinations will be determined by the important fact that in order to obtain

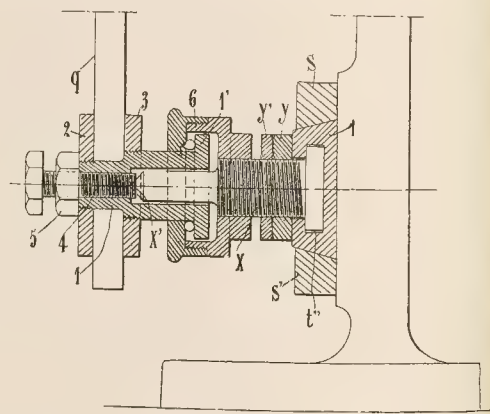


Fig. 8.

a good combination it is essential that the lens tested as a magnifying glass should give a magnification equal from the centre to the edge.

It is possible to employ the apparatus described above not only for tracing curves but also for cutting, from sheets of metal, templates which may be utilised for checking the lenses formed by the machine hereinafter described. To this end the pencil is replaced by a cutting point or knife, or by a milling cutter which is given an appropriate movement of rotation upon itself.

It is upon the general method which has been described that the



machine enabling optical lenses giving the results indicated to be formed mechanically, is based.

The machine is illustrated by way of example in the accompanying drawing Fig. 6 is a side elevation of the machine. Fig. 7 is a front elevation of the machine.

Broadly speaking the machine consists of a tool *p*, which will be described in detail, and which is mounted by the intermediary of a movable shaft 10 at the extremity of a rod or bar *q* which is capable of sliding on and turning around a fixed point, whilst the extremity of the bar opposite to the tool describes either a straight line or a curve of any kind.

The essential parts of the machine are a rod, one extremity of which describes a straight line, a circle, or any other curve, whilst turning and sliding on a fixed point. The other extremity carries a tool for shaping and polishing which turns upon its axis whilst describing in space the curve determined by the relative distances of the surface of the tool from the points of oscillation and attachment of the rod. The lens, to be worked, rotates around its axis in the opposite direction to that of the rotation of the tool.

In these conditions, the tool describes a curve, the nature of which depends upon the position of the fixed point and upon the nature of the displacement (straight line or curve) of the extremity of the rod opposite to the fixed point; the movement of the tool takes place whilst the piece of glass to be shaped rotates around an axis which is located and remains during the entire treatment of the lens in line with the symmetrical axis of the curve described by the tool.

The machine comprises a vertical stand *r*, fitted by any appropriate means to a bracket or to a foundation plate. On this stand *r* there is mounted a horizontal slideaway which is either cut in the stand itself or constituted by two bevelled bars *s* <sup>s1</sup>. A bar *t*, the sides of which are likewise bevelled, is capable of displacement in this slideaway. The bar *t* is provided with a stud *t*<sup>1</sup> on which the head *u*<sup>1</sup> of a connecting rod *u* may be mounted; this rod is variable in length by means of a sleeve *u*<sup>11</sup>, provided with a right and left-handed screw-thread. This rod terminates in a head *u*<sup>111</sup>, which is engaged upon a stud mounted on a disc *v*, which may be given a movement of continuous rotation. By means of the arrangement described, the continuous movement of rotation of the disc *v* is converted into reciprocating movement of the bar *t*. The amplitude of the reciprocating movement of the bar *t* depends upon the position occupied by the stud *v*<sup>1</sup> on the disc *v*. In order to facilitate the displacement of this stud, it is engaged in a slot *v*<sup>11</sup> arranged along a diameter of the disc *v*, and the stud may be fixed at any suitable part of this slot.

The bar *t* is formed with a slot *t*<sup>11</sup> (Figs. 7 and 8) in which a pivot *x* terminating in a tapered point *x*<sup>1</sup> is able to move (Fig. 8); this pivot may be fixed at any suitable part of the slot formed in the bar *t* by means of a nut *y* and counter nut *y*<sup>1</sup>; the enlarged part of the pivot *x* is screw-threaded for this purpose. The bar *q*, which, as above stated, carries the tool *p* at its upper part, is arranged parallel with the stud *r*. This bar is formed with a slot *q*<sup>11</sup> for the greater portion of its length. Through this slot there passes (Fig. 8) a socket 1 upon which there are fixed two cheeks 2 and 3 which are arranged on either side of the bar. A rod 4 in one of the extremities of which a cup is formed for the reception of the tapered point *x*<sup>1</sup> of the pivot *x*, is screwed into the socket 1.

The plate 14 being furnished with a lens to be worked, the respective positions of the tool and of the lens having been regulated in the manner described below, and the lower extremity of the bar *q* having been mounted upon the pivot *x* fixed at an appropriate point on the bar *t*, the lens is worked by starting the machine, that is to say, by giving a continuous movement of rotation to the disc *v*, likewise by transmitting a movement of continuous rotation to the shaft 10 of the tool *p*, but in the opposite direction, and finally by giving a movement of continuous rotation to the lens holder 14 also. In these conditions, the tool *p* will describe, in a plane parallel with the stand *r* and with the bar *q*, a curve, the form of which will depend upon the amplitude of the displacements of the lower extremity of the bar *q*, upon the position of the oscillation shaft or pivot 7 of the said bar *q* and upon the distance of the tool from the pivot 7. This curve will be a meridian curve, which will generate the surface of the lens to be

worked owing to the movement of rotation of the lens around a vertical axis situated exactly in line with the tool holder, located in a plane parallel with the bar *q* and coinciding with the symmetrical axis of the curve described by the tool.

In order to regulate the treatment of the lens, the following method is adopted.

The pivot of oscillation of the bar *q* having been fixed at the appropriate place, and the attachment of the bar to the plate 16 or to the bar *t*, as the case may be, having likewise been adjusted, the testing device 29 is slid along the bar *q* until the guide mark on the slide 29, which indicates the exact height of the point 33, comes opposite the previously selected division of the bar *q*; it will of course be understood that at this moment the lens 13 is depressed, that is to say the cup 14 has been lowered by means of the screw-threaded nut 26. The screw-threaded nut 22 is then acted upon in such a manner as to lower the tool *p* until it rests upon the point 33, and the exact position of the tool *p* is regulated in such a manner that the index 36 of the rod 32 is exactly opposite the zero of the scale marked upon the graduated sector 37. At this moment it is certain that the plane face of the tool is situated precisely at the desired distance from the centre of the fixed pivot 7. The index 39, which is movable over the graduation of the nut 22, is displaced until it comes opposite the zero of this graduation. When this has been done, the point 33 is separated from the tool by causing the testing or gauging device to rock around the hinge 31 and the lens 13 is raised by acting upon the screw-threaded nut 26 until the summit of the lens comes into contact with the tool. The tool is raised by an indefinite amount by turning the nut 22; then the bar *q* is displaced by hand, being caused to rock around the pivot 7 in such a manner as to bring the tool *p* to the right or left extremity of the meridian curve that it describes. When the tool has thus reached the left hand extremity, for example, of the meridian curve that it is describing, the bar *q* is stopped, and by acting upon the screw-threaded nut 22, the tool *p* is lowered until it comes into contact with the edge of the lens to be worked. The machine is then ready for action.

The disc *v*, the shaft 12 and the shaft 15 are started; the tool *p* continues to describe the same curve successively whilst it is turning on itself, as does also the lens 13, and this lens is worn down gradually. In proportion as the lens is worn down, the height of the tool *p* is adjusted by acting upon the nut 22 in such a manner as to lower this tool *p* constantly, and notification is afforded when the operation is terminated when by the successive actions upon the nut 22 the index 39 comes opposite the zero of the scale marked on the periphery of this nut. It will be understood that during the operation the grinding materials, such as emery and the like generally employed in grinding lenses, are caused to fall on to the face of the lens under treatment by any appropriate means.

The polishing and finishing of the lenses is effected on the same machine merely by changing the tools for tools of a different character. Georges Arsene Ossart, 4, Avenue Ossart, Seine et Oise, and Alphonse Emile Verge, of 8, Rue de l'Eglise, Vincennes, Seine, France.

AMERICAN PORTRAITURE.—Messrs. J. H. Dallmeyer, Ltd., inform us that they have had the collection of twenty-eight examples of portraiture by leading American photographers mounted on three panels, each measuring 44 x 33 in. They will be pleased to lend these to any societies which may wish to include them in their exhibitions, carriage being paid one way. The frames are fitted in a grooved box, which saves trouble in packing.

THE "ABELY" EDITED.—"Abel's Photographic Weekly" is brutally frank. It accuses its contemporaries in the States with filling 90 per cent. of their space with British matter, and in the next breath admits the same practice on its own part, with the extenuation that it is first with the lifting. Editorial motto of J. C. Abel:—"If that it is first with the lifting, 'twere better it were swiped quickly." "Just the same," proceeds the censor of his own people, "we all owe a mighty debt of gratitude to Messrs. Brown, Bagley, Hunter, et al., who have the welfare of our British contemporaries in charge." Bagley and Hunter? Who can these be?

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Stripping Films.

The cracked plate (writes Mr. L. Hodgson in "Photography") is placed, wet or dry, in a saturated solution of sodium carbonate (crystals) and left there for ten minutes. It is then taken out and left to dry. When dry, it is again placed in the same bath, and in a minute or two the film may be rolled off easily with the ball of the finger. It is then placed in clean water, where it swells to about double its previous size, but methylated spirit will reduce it again. But the film must not be put straight into the spirit from the soda, or the soda will crystallise out on the film. This process uses no acid, costs nothing, and has always given me complete satisfaction.

### Sulphide Toning of Bromide Prints.

In the second of his series of two articles in "The Amateur Photographer" on the above subject Mr. H. W. Bennett gives the following table of instructions for obtaining a range of tones from black to red.

Colour.	Bleaching Solution.	Darkening Solution.
Black .....	Ferricyanide, 1 part; mercury, 1 part	Sulphide.
Brown black .....	Ferricyanide, 2 parts; mercury, 1 part	Sulphide.
Very deep brown ..	Ferricyanide, 3 parts; mercury, 1 part	Sulphide.
Dark brown .....	Ferricyanide, 5 to 7 parts; mercury, 1 part	Sulphide.
Rich warm brown..	Ferricyanide.....	Sulphide.
Warm brown.....	Ferricyanide.....	Sulphide, 1 part; sulphantimoniate, 2 parts.
Very warm brown..	Ferricyanide.....	Sulphide, 1 part; sulphantimoniate, 4 parts.
Red brown .....	Ferricyanide.....	Sulphide, 1 part; sulphantimoniate, 7 parts.
Red chalk .....	Ferricyanide.....	Sulphantimoniate.

The ferricyanide, mercury, sulphide, and sulphantimoniate solutions alluded to above are as follows:—

A. Potassium ferricyanide .....	4 gr.
Potassium bromide .....	6 gr.
Water .....	1 oz.
B. Mercuric bromide .....	4 gr.
Water .....	1 oz.
C. Sodium sulphide .....	4 gr.
Water .....	1 oz.
D. Sodium sulphantimoniate .....	4 gr.
Water .....	1 oz.

## New Books.

"The American Annual of Photography, 1908." Edited by John A. Tennant. London: Dawbarn and Ward, Ltd.; New York: Tennant and Ward, and George Murphy. Price 2s. (in America 75 cents).

An annual of articles and contributions is this rejuvenated—we might almost say revived—issue of the "American Annual." Editor Tennant has called on the photographic writers of the States, and nobly have they responded. The result is an assemblage of articles, few among which can be disparaged as empty words. True, the theme of many a contributor is no new one, but none the less the total sum of the volume is a collection of hints and items which provide good reading and advice for the amateur worker and for many of his professional brethren. We may cite a few articles and their authors to show the variety of topics which is offered, and the much-desired "practical" character of the subject matter:—The possibilities of Kallitype, focal-plane cameras, the Kallitype process, mounting prints in albums, a universal developer, the pinhole for wide angles, the construction and use of a lens chart, a lens hood and its attachments, pyro and its preservation, notes on red-sensitive plates, paramidophenol as a tank developer, quick drying of

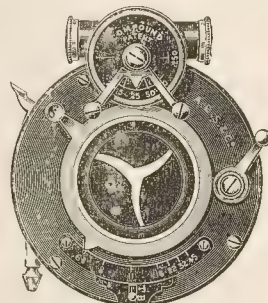
negatives, a simple portrait lamp, Ozobrome, Zeiss diaphragm markings, photography at night. For the rest, there are particulars of photographic schools of instruction, which might certainly be revised so far as those in Europe are concerned. There is no mention of the Bolt Court School, the Manchester Technical School, or the Regent Street Polytechnic, and it is a good many years since the late Dr. Vogel was at the Technische Hochschule at Charlottenburg. However, the volume does not pose as a compilation of standard information, although it has compiled a revised list of American photographic societies. The total number is only fifty-two out of one hundred asked to send particulars for publication. Society life in America must be in a more stagnant condition than here.

The annual contains a large number of illustrations, a good many of which are from the camera of Herr Dührkoop. Some others have been seen here at exhibitions, but the majority give us, presumably, an idea of the pictorial attainments of American workers outside Mr. Stieglitz's "Photo-Secession."

## New Apparatus, &c.

The "Compound" Diaphragm Shutter. Sold by A. E. Staley and Co., 19, Thavies Inn, Holborn Circus, London, E.C.

In this very convenient type of diaphragm or between-lens shutter, Messrs. Staley have certainly reached a very high degree of efficiency. The shutter is very light, the working parts are enclosed, and the adjustments are most accessible. It provides time and bulb exposures, and a series of instantaneous exposures, which, as Messrs. Staley are prepared to prove, cover a range of from 1 second to 1-170.



which latter speed is to be increased to 1-250th in later deliveries of the instruments. Messrs. Staley are writing of the first small consignment of six shutters from which they have tested during the recent cold weather, with the following results:—

	1	1/2	1/5	1/10	1/25	1/50	1/75	1/100	1/250
No. 1.....	1	1/2	1/5	1/10	1/22	1/46	1/68	1/90	1/170
No. 2.....	1	1/2	1/4	1/10	1/22	1/50	1/75	1/98	1/175
No. 3.....	1	1/2	1/5	1/11	1/23	1/46	1/73	1/92	1/180
No. 4.....	1	1/2	1/5	1/10	1/26	1/48	1/75	1/93	1/180
No. 5.....	1	1/2	1/5	1/10	1/24	1/47	1/70	1/95	1/175
No. 6.....	1	1/2	1/5	1/11	1/27	1/46	1/72	1/88	1/165

The first line gives the marked speed; succeeding lines those actually found by test.

The shutter is actuated either by lever, bulb, or "Antinous" release.

The sizes in which the shutter is made and the prices thereof are as follows:—

	Shutter largest diameter aperture.	Inside tube diameter for lenses.	
No. 0 .....	1 1/8 in.	1 1/8 in.	55/-
" 1 .....	1 1/8 in.	1 1/8 in.	40/-
" 1a .....	1 1/8 in.	1 1/8 in.	42/-
" 2 .....	1 3/8 in.	1 3/8 in.	48/-
" 2a .....	1 3/8 in.	1 3/8 in.	54/-
" 3 .....	1 1/2 in.	2 1/8 in.	60/-
" 4 .....	2 in.	2 1/8 in.	65/-

The shutter is also obtainable in stereoscopic form, price 60s. and 75s.



## New Materials.

Wratten "Process" and "Process Panchromatic" Plates. Made by Wratten and Wainwright, Croydon. Sole Selling Agents: Hunters, Ltd., Poppins Court, Fleet Street, London, E.C.

Not only process workers and three-colour block makers will welcome two additions to the plates manufactured by Messrs. Wratten and Wainwright but photographers who have difficult work entrusted to them at times will be grateful for the assistance in certain special circumstances which the new introductions afford them. In these new plates, the makers have produced an emulsion which in certain important respects is certainly a distinct improvement on the materials hitherto available; that is to say, the qualities of general rapidity and freedom from interlaminar halation are highly developed, whilst the ability of the plates to give very great density by development alone is retained. In making negatives of line subjects it is thus easy to obtain the necessary opacity of the ground at the same time as the equally necessary transparency of the lines; in other words, one obtains the quality of negative which has been looked upon as the prerogative of the wet collodion method of working, in which the first developed image is strengthened with the acid silver or copper intensifier. But it is the photo-engraver, and particularly the three-colour process man, who will discover the advantages of the plate in the sharpness of the dot which can be obtained on them by quite uncomplicated methods. The plates are issued in both the ordinary and panchromatic brands, the latter a bathed edition of the former. The "Panchromatic process" is a very valuable material in making three-colour screen negatives by the direct process, as the emulsion gives clean dots and is rapid enough to allow of exposures as short as those with sensitised collodion emulsion.

We write as we do only after giving the plates a thorough practical trial, in the course of which they were seen fully to bear out all the claims made for them. They are certainly superior to any other unbatched process plates we have ever tried, and, of course, for making direct screen-negatives, the "Panchromatic Process" plate is superior to the ordinary Panchromatic plate, which we have formerly used with success. We have made both line and half-tone negatives, which have given us good prints on metal, without either reduction or intensification: there was ample density, and the spaces were quite transparent without any treatment whatever beyond development. On the other hand, in order to see the capacity of the plates for density, we may say that on merely intensifying a line negative with mercury and blackening with ammonia, the density has been so great that it was impossible to see a bright incandescent gaslight through the negative.

These plates certainly place a new power in the hands of the engraver, as, apart from three-colour, for certain black and white work they will prove invaluable, not only in saving time formerly consumed in photographing and re-photographing difficult originals (e.g., dark red silver prints and red carbon prints), but in making for a considerable improvement in quality in the reproduction of such originals.

The plates are sold at prices which are based on 1s. 6d. per dozen, in quarter-plate size for the "Process," and 2s. for the same size of "Process Panchromatic." As already stated the sole selling agents are Messrs. Hunters, Ltd., Poppins Court, Fleet Street, London, E.C.

A booklet dealing with the use of the new plates and also with other practical points in screen-negative making has been issued by Messrs. Wratten, and is obtainable both from them and from Messrs. Hunters, Ltd. The booklet discusses the properties of the ideal process panchromatic plate, and illustrates the difference in dot formation by a series of telling reproductions from screen negatives. It advises as to flash exposures on subjects of strong contrasts, and it also gives factors for the conversion of the daylight ratios of the plates, when used in three-colour work, into those which must be adopted when working by enclosed or open arcs, in short a good deal of practical information which, unless we are much mistaken, the photo-engraver will find it greatly to his profit to peruse. Formulae for the development of the plates and solutions advised for cutting and intensification, are also given in the booklet, which altogether deals very thoroughly with its specific subject.

## CATALOGUES AND TRADE NOTICES.

**LANTERN SLIDES.**—Messrs. Newton and Co., 3, Fleet Street, E.C., have issued a supplementary list of slides which runs to seventy-six pages, and includes particulars of many new sets of religious, literary, imperial and scientific interest, as well as of a large number of travel subjects. It is evident that Messrs. Newton still maintain their pre-eminence in the lantern-slide trade. A further pamphlet of the same firm describes the "Vitascope," a kind of long focus microscope designed for the examination of living objects under natural conditions.

**"FALLOWFIELD'S COURIER."** (Jonathan Fallowfield, 146, Charing Cross Road, London, W.) contains some comments on trade policy which makes its January issue worth reading. It also gives latest particulars of the Multisecto repeating back, whilst on another page we find Fallowfield pronouncing:—"That 'colour photography' is the future of the trade I have not the slightest doubt, and knowing the conservative nature of most traders, I have not been surprised to find dealers have not yet sold or bought supplies. This is a line which every energetic dealer should have cultivated, and there are many side lines of profit besides the discount on the plates."

**LETO PRINTING PAPERS.**—A new edition of the catalogue of the Leto Photo-Materials Co., 3, Rangoon Street, London, E.C., has been issued, and will be sent free to any photographer sending his name and address to the Leto Co. The list gives the brands, stock sizes, and prices of the P.O.P., C.C., bromide and gaslight papers manufactured by this well known firm.

A list of bargains in cameras, lenses, and other apparatus is obtainable from Messrs. Spiers and Pond, Queen Victoria Street, London, E.C.

**MESSRS. NEWMAN AND GUARDIA, LTD.,** have just issued their new catalogue and price list for 1908-9, the arrangement and general character of which are fully in accord with the high quality of the goods associated with the name of "N. and G." One of the special features is an art supplement, consisting of reproductions of work done with the various types of "N. and G." cameras, the originals being by well known photographers. An article on "The Importance of Shutter Speeds," by Mr. Arthur S. Newman, and also one on the "Autochrome Process," contains much useful information, and should prove of considerable interest to all classes of workers. In addition to their own well-known specialties Messrs. Newman and Guardia have now made arrangements to supply practically everything required for use in photography, and this latest list includes particulars of the most up-to-date apparatus and accessories on the market. Those desirous of possessing a copy of this comprehensive and artistic catalogue should make early application for same to the above firm, at 90 and 92, Shaftesbury Avenue, London, W., as only a limited number have been issued.

**"THE BRITISH JOURNAL ALMANAC."**—A testimony to the up-to-dateness of the "Epitome of Progress," the classified review of the year's doings which is a leading feature of the "B.J. Almanac," is wrung from a Continental writer, who, on other matters, has not been able to see eye to eye with Wellington Street. Reviewing a German year-book just issued, he deplores the late appearance of technical information published in the 1907 "B.J. Almanac," that is, a year in advance of the Continental abstract of progress. In further reference to the 1908 "Almanac," we may say on behalf of our publishers that their own supply of copies has long since been exhausted, and they can only refer those, who still send orders, to the wholesale and retail trade houses. We learn that one or two of the former have not a single copy on their hands, and therefore it behoves anyone who is still without his "Almanac" to lose no time in securing one from his most accessible source of supply.

**CELLULOID EXHIBITION.**—The German Celluloid Manufacturers' Association have decided to exhibit at the Exhibition Hall of the Berlin "Zoo" from February 12 to 24 next. The association desires to show the remarkable development of the celluloid industry and the multifarious uses to which the material is now successfully applied. They propose to exhibit not merely celluloid and celluloid goods, but the numerous articles of all descriptions into the manufacture of which celluloid enters. Information regarding the undertaking may be obtained from the association (Verband der deutschen Zelluloidindustriellen), 18 Neue Jakobstrasse, Berlin.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

FRIDAY, JANUARY 17.

West London Photographic Society. "Time Development." W. F. Slater F.R.P.S.  
Sutton Photographic Club. *Photographic News*, 1907, Prize Slides.  
Hackney Photographic Society. Whist Drive.  
Nottingham Camera Club. "Bromide Toning." W. Murray.

SATURDAY, JANUARY 18.

Aberdeen Photo Art Club. "Rawlins Oil Process." G. L. Smith.

MONDAY, JANUARY 20.

Catford and Forest Hill Photographic Society. Monthly Competition. Criticism by A. H. Lisett.  
Harrow District Photographic and Scientific Society. "Scaloid." Demonstrated. Johnson & Sons.  
Kidderminster and District Photographic Society. "Tour in Ireland." G. F. Griffin.  
Stafford Photographic Society. "Warm Tones by Development on Gaslight Papers." A. L. Yapp.  
Scarborough and District Photographic Society. "Elementary Hints on Enlarging, introducing Home-made Apparatus." G. F. Bristow, Jun.  
Lancaster Photographic Society. "Weather and Weather Lore." G. W. Barrow, B.Sc.  
Southampton Camera Club. *Photographic News* Prize Slides.  
Bradford Photographic Society. Annual Meeting.

TUESDAY, JANUARY 21.

Royal Photographic Society. "Westminster Abbey." S. G. Kimber, F.R.P.S.  
Blairgowrie and District Photographic Association. "Trees and their Characteristics." W. D. M. Falconer.  
Epsom and District Literary and Scientific Society. "Gaslight and Bromide Paper."  
Rotherham Photographic Society. "Switzerland: Glimpses of its Mountains and Architecture." J. R. Wigtall, A.R.P.S.  
Worthing Camera Club. R.P.S. Affiliation Competition Slides.  
Sheffield Photographic Society. *Amateur Photographer* Prize Slides.  
Manchester Amateur Photographic Society. "The Evolution of an Amateur Photographer." Mr. Willis Brunt.  
Hanley Photographic Society. "Working up Negatives and Prints, including Use of Aerograph." B. J. Allen.  
Hackney Photographic Society. "Plea for the Negative and good Printing Technique." A. H. Blake, M.A.

WEDNESDAY, JANUARY 22.

Bristol Photographic Club. "The Autochrome Plate." M. B. Fowler.  
Central Technical College Photographic Society. Rotary Carbograph Paper.  
Borough Polytechnic Photographic Society. Lantern Slide Competition.  
Coventry Photographic Club. "The Theory and Practice of Time Development." W. F. Slater, F.R.P.S.  
Acton Photographic Society. Photographic Chemicals.  
South Suburban Photographic Society. "Carbon Printing." A. C. Braham.  
Woodford Photographic Society. "Systems of Enlarging and Reducing." W. L. F. Wastell, F.R.P.S.

THURSDAY, JANUARY 23.

Queen's Park Amateur Photographic Association. "Ozobrome and Carbon." David Horn.  
Chelsea and District Photographic Society. "Scenes in the Mediterranean." R. C. Gibbs.  
Rugby Photographic Society. "The Theory and Practice of Time Development." W. F. Slater.  
Middleham Photographic Association. "After Treatment of Negatives." Douglas H. Watson.  
L.C.C. School of Photo-Engraving and Lithography. "The Interpretation or Rendering of Subject and its Treatment." Will Rothenstein.  
Bath Photographic Society. Competition: Trimming and Mounting.  
Hull Photographic Society. Y.P.U. Portfolio.  
Richmond Camera Club. Rotary Carbograph Paper.  
London and Provincial Photographic Association. "The Lighting of the Optical Lantern." T. E. Freshwater.  
Blenheim Club. "A Recent Visit to South Africa." Rev. D. G. Cowan, M.A.  
Handsworth Photographic Society. "A Tour in Holland."  
Liverpool Amateur Photographic Association. "The Snow and Ice Scenery of Switzerland." C. Thurstan Holland, M.R.C.S., F.R.P.S.

### ROYAL PHOTOGRAPHIC SOCIETY.

MEETING held Tuesday, January 14, the President, Mr. J. C. S. Mummery, in the chair.

Mr. E. Howard Farmer read a paper entitled "The Modes of Action of Ruled and Analogous Screens and their Application to Photo-Engraving." Mr. Farmer reviewed the published papers for many years past in which the action of the half-tone screen had been dealt with. The conclusion was that both authorities and operators on the Continent and in America worked on the theory that the formation of the dot in the half-tone screen negative took place as though the aperture in the screen formed a pinhole image of the lens aperture. Operators based their work on that theory, and tables also based upon it were drawn up for their guidance. While it was true that the shape of the dot did agree in many cases with the shape of the diaphragm aperture, yet such was not the case in other circumstances, and he, the lecturer, could not agree that the pinhole theory was a sufficient explanation of the facts,

widely acknowledged as the pinhole theory was. The lecturer described a number of experiments in which the conditions prevailing in the use of the half-tone screen were magnified on such a scale that the phenomena could be easily observed, and he exhibited drawings and photographs showing that the shape of the dot was not necessarily that of the diaphragm of the lens. He then referred to other factors affecting the screen dot, such as diffraction, penumbra and irradiation, and he went on to point out that departing from the pinhole theory, it was possible to draw up formulae which greatly simplified the making of half-tone negatives and provided the operator with the means of making two or more adjustments simultaneously. Illustrations of the mechanism were shown and actual examples of the lens and fittings which have been placed on the market by Messrs. J. J. Griffin and Sons under the name of the "Ratiometric" lens were also shown. Some brief discussion followed the reading of the paper, Messrs. A. J. Newton, O. S. Dawson, and E. P. Butler taking part.

**SOUTHAMPTON CAMERA CLUB.**—Mr. S. G. Kimber, F.R.P.S., lectured at the Philharmonic (small) Hall, Southampton, on Monday evening, on "Westminster Abbey," before a large audience. Mr. Kimber, during the past year, has made a photographic survey of the famous Abbey, and is to be congratulated on the excellent collection of slides he has obtained, and which illustrated his lecture. He briefly referred to the architectural features of the exterior, but confined his attentions chiefly to the monuments in the interior, and gave a short biography of many of the celebrities whose memory is highly cherished. At the close Mr. F. G. Ryder proposed a vote of thanks to the lecturer.

**SOUTH LONDON PHOTOGRAPHIC SOCIETY.**—Lecturing on "Architectural Photography for Beginners," Mr. Edgar R. Bull, the well-known specialist in architectural photography, said that the best preventive of halation in interior work is to give a fuller exposure, and develop quickly with a developer containing a full quantity of accelerator, but only half the normal quantity of pyro, or other reducer. Backed plates are, of course, a *sine quâ non*.

**LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.**—Ordinary meeting, January 9, 1908, Mr. T. E. Freshwater in the chair. The hon. sec. announced that arrangements for moving to the new meeting room had been completed, and that the first meeting in February would take the form of a smoking concert, to celebrate the occasion of moving. The smoking concert would be held in the new room at "Ye Olde Napier Tavern," 25, High Holborn, and it was hoped that a large party of members and friends would on that occasion make a special effort to be present. Mr. W. Thomas then lectured upon "Newspaper Illustrations by Means of a Hand Camera." Such work, he said, was daily becoming more important to those who desired to turn the use of the camera to a profit or to a means of making a livelihood. So far as the illustrated press went to-day, it could be roughly divided into two parts—the daily, and the weekly and monthly. With the first everything must be "right on top." One must first have the opportunity and avail oneself of it. It was of no use to send to the daily press pictures of something that had happened two or three days before, hence one must be wide awake and active; in fact, the essence of success with the daily press was speed. Yet one could use "intelligent anticipation" for one never knew when negatives of certain classes of subjects might be money-makers, as, for instance, some weeks before the wreck of the boat some time ago whose passengers were nearly all Britanny onion boys, he had secured a negative of one of these boys with his onions, proof of which, when the wreck occurred, was sent round to the press, and—well, now he had spent the money. With the weekly and monthly papers a more leisurely course could be taken, at the same time the work must be better, both technically and artistically. The first essential was perfect technique, next the ability to treat the most commonplace subject in an artistic manner. The press editors were becoming daily more and more critical, and when it was a case of choosing between a series of photographs, all perfect photographically, the one that was treated artistically was accepted. Slides were here shown, showing the advantages of using orthochromatic plates and light filters for the improvement of the work. Yet, said Mr. Thomas, do not over-correct your colour values. The lecturer also pointed out that it was better to treat subjects in series,



so as to fully illustrate a story or incident. If one was not a writer the editor could easily provide "the accompanying text." For his own work the lecturer used lens of 5½ in. and 8½ in. focus on a 4-plate, and also the "Adon" telephoto lens. The lenses should be of large aperture, to allow of quick work.

Mr. Teape, in moving a vote of thanks, said Mr. Thomas had been interesting and practical, and one had only to compare the illustrated press of to-day with, say, two years ago to see that the editors were becoming, as Mr. Thomas had said, more and more critical.

Mr. Rapson seconded, and Mr. Thomas suitably replied.

**EDINBURGH PHOTOGRAPHIC SOCIETY.**—At the meeting on January 8 a lecture was delivered by Mr. Robert F. Sherar, architect, on "Taste, Style, and Fashion in Art." Mr. Sherar said that, while inherent taste was the psychic force which produced art, what we understood by taste was constantly being affected by environment, experience, and education. The adoption of fashions in art showed a want of taste. He said it was almost impossible to judge of art work of a novel character, as the only sure test was that of time and continued admiration. The lecture was profusely illustrated by limelight views of architectural styles, showing how these had been affected by social, physical, and geographical considerations.

**SOUTH SUBURBAN PHOTOGRAPHIC SOCIETY.**—"Why Should London Wait?"—Lecturing last week, at Plough Hall, Lewisham, Mr. A. H. Blake, the well-known pictorialist, expressed surprise that London was so much neglected by photographers in search of subjects. Though the picturesque relics of the past were fast disappearing, he said, there were still many objects of interest left, and not a few subjects for pictorial treatment. Amongst the slides that illustrated his lecture was quite a number of both; but perhaps the most successful were the sunlight effects obtained in the leafy squares of London and the reflections secured upon London's river. The lecture itself was like a little history, which had fallen into its anecdotal, and was garnished with apt quotations, which gave actuality to the street names with a story.

**WOOLWICH PHOTOGRAPHIC SOCIETY.**—Mr. E. Seymour gave his lantern lecture on "Flower and Fruit Studies" last week. He stated that he worked with ordinary plates and simple apparatus, and without a yellow screen. Most of his studies were the common flowers and grasses of the fields, which were supported upon a small table covered with brown paper. He wired the leaves and stems, or pinned on additional ones here and there to alter the position and obtain the required effect. A long exposure was given in a small room with a side light, the window being covered with cambric and no reflector or screen used, but by means of oil to touch up the leaves a reflection was readily obtained. The slides shown were excellent, and, with the lecturer's humorous remarks, contributed to a most pleasant evening.

## Commercial & Legal Intelligence.

**ANDRE AND SLEIGH, LTD.** (Photo-Engravers, Bushey).—Issue on January 1 of £7,700 5 per cent. debentures, part of series created December 19, 1907, to secure £8,000, charged on the company's undertaking and property, present and future, including uncalled capital. No trustees. No previous issue of same series. (Out of the above-mentioned £7,700 the whole previous issue of £7,000 has been satisfied.)

**LEGAL NOTICES.**—Notice is given in the "London Gazette" of the release of the trustees in the bankrupt estates of John Grange, photographer, of 25, High Street, Loughborough, Leicestershire, who was adjudicated bankrupt early in 1907, and of John Easden, photographer, of 21, Union Street, East Stonehouse, and 6, Tavistock Road, Crownhill, both in the county of Devon.

**CANVASSING FRAUDS IN ESSEX.**—At the East Suffolk Quarter Sessions last week, George Havard, canvasser, and John Havard, photographer, were charged with obtaining 5s. by false pretences from Frederick Alexander, at Capel St. Mary.

Matilda Scarf, wife of a coachman at East Bergholt, spoke to a visit from the defendants, who wanted to take a photograph of her house with witness and Miss Howlett standing on the step of the door. Afterwards they photographed the two of them with the

cook of the house. Later on the elder prisoner called with a proof, and asked for the money. The postcards bearing the photograph were 2s. a dozen, and orders for three dozen were given by witness and two servants, the printed receipt bearing the address of 46, Station Road, Sudbury. The postcards were promised in a fortnight's time, but they never arrived. In consequence Miss Howlett sent a postcard, but got no reply, nor had they received their money back.

Emily Cooper, of Higham, who received a visit from the prisoners in September, said they took a photograph of her little daughter. The elder called next day with a proof, and she ordered half-a-dozen for a shilling. She parted with the money on the understanding that the photographs would be delivered in a fortnight. She had neither received her photographs nor her money.

Minnie Eleanor Reeve, wife of the postmaster of Capel, spoke to the prisoners photographing her and her children outside the house, but added she never received the portrait, though a proof was produced.

Charles Carter, blacksmith, of 46, Station Road, Sudbury, said the prisoners came to him in June, and left on October 15. They had a sitting-room, a bedroom, a cellar for developing, and the scullery for washing. The prisoners received a great number of letters, and they discussed these with him, and witness read many of the postcards, which asked for photographs, and also threatened proceedings.

John Havard, who was then called, said his name was Andrew Gale; he traded under the name of John Havard and Co. After setting up in business at Sudbury he wrote to his brother, and induced him to canvas for £1 a week. After taking photographs, he generally went round the next day with the proofs. He got orders upon them, and gave receipts. His mode of business was to have the cash in advance, and that was what most travelling photographers did. The prisoner added that he used the best kind of camera and other expensive photographic apparatus. He had every intention of executing his orders, and got so busy that he ultimately took into his employ the daughter of the witness Carter. He paid her 5s. a week, and paid the father 1s. a week for allowing her to work for him. The season was a bad one for photography. The girl was engaged in finishing postcards and views, and he sent out large bundles of finished prints. Unfortunately his work fell into arrears, and it was the absence of bright weather that prevented him from completing his orders. He was greatly surprised when the police arrested him, because he was then printing and sending a lot of stuff off to the customers.

Prisoner would not deny that he took money from 140 people in West Suffolk, and only sent photographs to twenty of them. He could not tell without his records whether he took money from 134 people in Essex, and sent photographs to only sixteen.

George Havard, who was also called, said his name was George Gale. He always acted under his brother's orders, and after he was taught he did some of the printing. When it was fine, over 100 postcards were printed a day. He had taken out hundreds of photographs, sometimes as many as twenty and thirty a day. He had nothing to do with the business more than he employed by his brother.

The jury found the prisoners guilty.

Supt. Taylor said the elder prisoner had received six months' hard labour for embezzlement in the North of England in 1905. He held a warrant against him from the Gateshead police, as well as one from the Essex police in connection with the present case.

The Magistrates sentenced the elder prisoner to ten months' hard labour, and the younger one was bound over in the sum of £10 to come up for judgment if called upon.

### NEW COMPANIES.

**CHARLES MURRAY, LTD.**—£500 in £1 shares. To take over the business of a chemist, druggist, and optical and photographic manufacturers' agent and dealer carried on by C. Murray at 1, City Road, Winchester. 1, City Road, Winchester.

**PHOTOGRAPHS OF HOLLAND.**—Messrs. A. E. Staley and Co. remind us that the collection of photographs made by Mr. Stanley Fincham of subjects in Holland, and with the Enryplan and other lenses, is still open for inspection at 19, Thavies Inn, Holborn Circus, E.C.

## News and Notes.

**THE COTSWOLD PUBLISHING COMPANY**, Collotype printers and plate-makers, inform us that their address after the 30th inst. will be Britannia Mills, Wotton-under-Edge, Glos., where all communications should be addressed.

**WINNER OF EAU DES CARMES COMPETITION.**—A large number of very striking photographs have been submitted in this competition, and the proprietors of Eau des Carmes have finally decided to award the prize of £10 to Mrs. Whitten, 21, Coventry Road, Ilford. Cheque for that amount has been posted her.

**SHEFFIELD PHOTOGRAPHIC SOCIETY.**—The annual exhibition will be held from March 31 to April 4. There will be six open classes, including one for colour photography, in all of which bronze plaques and certificates will be placed at the disposal of the judges for award. The society, working in conjunction with the executive of the Nottingham exhibition, have made arrangements for the free collection and carriage of exhibits from the Birmingham and Ilkeston exhibitions to Nottingham, and thence to Sheffield. The hon. sec. is Mr. James W. Wright, 62, Vale Road, Sheffield.

**CRIPPLEGATE PHOTOGRAPHIC SOCIETY.**—The annual exhibition will be held in the large hall of the Cripplegate Institute, Golden Lane, from March 16 to 19 inclusive, latest date for receiving entries March 2. There will be several open classes, in which bronze medals will be placed at the judges' disposal for award, with the addition of a silver plaque for the best picture in the open champion class. The society have made arrangements whereby pictures shown at the exhibition of the South London Photographic Society may be collected free of cost to exhibitors. Entry forms, which are now ready, and full particulars, may be obtained from the hon. sec., Mr. W. J. Middleton, 1, Foresters' Hall Place, Clerkenwell, London, E.C.

**MESSRS. GRIFFIN** announce that they have engaged the services of Mr. H. Holt as technical expert in process matters. Mr. Holt recently held the position of manager to the process engraving business of Messrs. Taylor, Garnett and Evans.

**FIFTH AVENUE PROFESSIONALS.**—"I see," writes J. C. Abel in his "Photographic Weekly," "Mr. E. B. Core's name down on the list of fortunates who have secured tables at the Knickerbocker Hotel for New Year's eve. He's in mighty good company, what with the Goulds and Astors and others at neighbouring tables. But then 'Pop' Core is a mighty good company in himself. I think I can guess who some of his guests will be.

"With Marceau and Core running automobiles, Hollinger with a beautiful little estate on the Palisades, Bradley, Histed and others with Newport studios, Puffer with a most enviable Palm Beach clientèle, MacDonald and Mrs. Käsebieber with frequent trips to Europe, do you wonder that photographers everywhere cast a longing eye on 5th Avenue as the Ultima Thule of the photographic profession?"

**THEFT OF A CAMERA, ETC.**—The details of a man's chequered career were given before the Clerkenwell Police Court last week, in the case of Morris Meyer Cohen, 49, dealer, who pleaded guilty to stealing a camera from the shop of the London Stereoscopic Co., Ltd., Regent Street, and a pair of binocular glasses from Sinclair and Co., Ltd., Haymarket. Detective-Sergeant Burton proved that in 1897 the prisoner was ordered six months' imprisonment, and in 1906 one month for shop robberies. Mr. Purcell, who represented the prisoner, said he was the son of a former managing clerk to a City firm, and on that gentleman's death unfortunately prisoner was left in embarrassed circumstances. This led to his first conviction. After the sentence he went to South Africa, and prospered in business until the outbreak of the war. Finding his business then ruined, he volunteered for service, and remained in the field until invalided with enteric fever. He was sent to hospital, and on recovering was appointed the captain of the Town Guard at Cape Town. There he lived creditably until 1904, when he returned to this country. Since

then he had lived by collecting rents and debts and acting as a private inquiry agent. Want, however, had brought him back into crime. His friends would after his sentence send him back to South Africa, so that he could start afresh. He was sentenced to nine months' imprisonment.

**THEFT BY A PHOTOGRAPHER.**—Charles F. Lamore, a photographer, of Portsdown Road, Maida Vale, was charged at Westminster with stealing a silver toilet box from 49, Eaton Terrace. The accused called at the last-named address, under the pretence of requiring apartments. Some rooms were shown him, from one of which, immediately after his departure, a silver box was missed. Prisoner was given into custody by the landlady of the house and the missing box found in his possession. The case was remanded.

**ART IN COLOUR PHOTOGRAPHY.**—Mr. Stieglitz, in his "Camera Work," announces that the promised reproductions of Autochromes by Mr. Steichen are not yet completed by the Munich firm of Bruckmann, which is preparing them. Meanwhile, the "Studio" for the current month, published in London on Tuesday last, contains a reproduction of an Autochrome by Mr. A. L. Coburn.

**MR. F. MARTIN DUNCAN**, who is so well known for his photographic and natural history cinematograph work, has now joined Messrs. B. J. Edwards and Co. as the head of the cinematograph film stock department.

**"COMMERCIAL PHOTOGRAPHY."**—Messrs. J. C. Mengel and G. W. Wagner inform us that, having lately acquired the Kingsbury Works at St. Albans, Herts, they have completely reorganised them, and adapted them, in the most practical and up-to-date manner, to the bromide process, and are ready to give careful and prompt attention to any orders entrusted to them.

**PHOTOGRAPHY AT A DISTANCE.**—A recent issue of the "Electrical Review" gives details as follows, and additional to those in the "B.J." of December 27 last, of the wireless method of transmitting photographs said to have been worked out by S. Sivelli. Whereas all methods so far suggested are designed for reproducing at the other end of the wire a ready-made photograph installed at the sending station, an interesting apparatus has recently been suggested by S. Sivelli, in "l'Elettricità," for the purpose of reproducing at a distance the optical image of a photographic objective.

The sending apparatus consists of an ordinary photographic camera, the sensitive plate of which is replaced by a plate made up of a network of small selenium cells, insulated from one another and communicating with a constant source of electricity, the negative terminal of which is connected to earth. From each of these selenium cells there starts an insulated wire, dipping into a small mercury vessel arranged on a horizontal plane. There are thus as many mercury vessels as there are selenium cells. These vessels are arranged round the circumference of a circle, round the centre of which rotates a metal index operated by clockwork, which, with a point attached to its end, will come into contact successively with each of the mercury vessels. This index communicates with a wire connected to the receiving apparatus, and insulated from the remainder of the outfit. The apparatus is to be worked in the following manner:—

After adjusting the focus for the image to be reproduced, the circuit is closed, and the index, having been set working, will traverse, one after another, the mercury vessels corresponding to the respective selenium cells.

The electric current from the battery will traverse the selenium cell actually in communication with the metal index, and, according to the more or less considerable action of the illumination on that cell, will undergo a more or less considerable alteration in intensity. These alterations in current intensity, corresponding to the illumination of each of the selenium cells, are thus successively transmitted to the receiving station, there to be reconverted into variable light intensities.

The receiving apparatus may be of various kinds; the one suggested by Sivelli is based on the following principle:—A cylinder performing a translation and a rotation is surrounded by a sheet of white paper, at a short distance from which a style communicating with an electro-magnet is arranged. If everything be adjusted in order to eliminate any variation of current intensity as long as the luminous intensity in all the selenium cells is the same, each current closure will



result in the production of a dash of more or less intensity, according as the selenium has been acted upon more or less strongly. The sheet of paper will thus be covered with a set of dashes, reproducing with greater or less approximation the optical image produced by the photographic objective.

The method thus outlined is obviously a purely hypothetical one. To produce an image at the receiving end that shall be coherent enough to be intelligible, the number of cells would have to be at least 1,000 to the square inch; and unless vastly more sensitive means than selenium cells can be devised for converting the variations of light intensity into variations of current strength, the idea seems impossible of realisation. Enormous difficulties would also be experienced in connection with the synchronising of the receiving and sending apparatus.

We, however, by no means despair of the invention of a device highly sensitive to the action of light, and we should not like to stigmatise the idea as beyond the region of ultimate possibility.

**KAISER'S POSTCARDS.**—Three picture postcards by the hand of the Emperor have just been published. One is a reproduction of a picture of a sea battle painted in 1895. Then there are two scenic designs for the Burggraf of Nuremberg tower, in romance style, signed "Wilhelm R.I., architect, 4-7-1893," and a couple of designs for regatta prizes. All bear autographic descriptions by his Majesty. Large orders for these cards are said to have been received from England, one firm alone having asked for 30,000 of them. Another proof of the Emperor's many-sided activity will shortly be laid before the German public in the form of photographs of Corfe Castle, taken by his Majesty during his recent residence in England. They are to be shown on a screen at a lecture by the architect Bodo Ebhardt on English and German castles.

## Correspondence.

*\*\* We do not undertake responsibility for the opinions expressed by our correspondents.*

*\*\* Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*

### MAGIC MIRROR EFFECTS.

To the Editors

Gentlemen,—Mr. Levy's letter in your issue of January 10 is, I fear, based on a misapprehension. Though I discovered the deformation of glass plates under the suction of pneumatic holders by the appearance of Newton's rings when coating the plates with collodion, yet in the later optical proofs of actual deformation no collodion at all was used. If divergent light from a lantern is reflected by an ordinary uncollodionised mirror held by a pneumatic holder, the proof of cup-shaped deformation in the region of the holder is eloquent in the reflection.

What, then, for Mr. Levy's "explanation," depending, as it does, on temperature differences causing unequal rates of evaporation of the collodion solution, an explanation based on a non-existent factor? It is not likely that the readers of "Nature" (to which journal my letter was in the first instance addressed) would have permitted my explanation to pass without comment if it had not been the correct one.—Yours faithfully,  
DOUGLAS CARNEGIE.  
Blackheath, London, S.E.

### PORTRAITURE WITH MERCURY-VAPOUR LAMPS.

To the Editors.

Gentlemen,—I am sorry I did not see Mr. Henderson's letter in time to reply to it in this week's issue of your "Journal." With regard to the eight arc lamps which Mr. Henderson's friend has in his studio, I presume these must be open type lamps which are quite out of date for photography, as the light is not of great actinic

value. I do not know of any studio at the present time using "Westminster" enclosed lamps where more than two are used, the necessary "diffusion and dispersion" being obtained by suitable screens and reflectors. Some years ago we supplied four lamps to almost the first studio fitted up with this type, but I believe never more than three of them were used at one time. For cinematograph photography, of course, a larger number are required.

With regard to the current consumption, it is quite true that Mr. Hewitt gives the figures that Mr. Henderson reproduces, and I willingly admit that Mr. Henderson cannot reasonably be blamed for copying them. If, however, he had disclosed the source of his information when first mentioning these figures I could have put the matter right. The particular lamp used for the Mansion House portraits was one of our earliest No. 114 type, and was made to take 30 amperes on 200 volt circuit, corresponding to 6 units per hour. The latter figure given by Mr. Hewitt of 10½ units per hour must, however, be a mistake; few of these big-current lamps were made, as we found it unnecessary to use a larger current than 15 amperes on 200 volts. This is our standard No. 114 type lamp, the consumption per hour being 3 units, as I before stated. We had Mr. Hewitt's article reprinted, with his permission, exactly as it appeared in the "Journal," because it gave valuable information on points which we were constantly being asked about and were not always able to answer.

I am rather surprised that Mr. Henderson still attempts to justify his instructions re "Installing Lamps." I should have thought that in the interval he would have submitted the remarks to some electrical friend who would at once have told him, as I did, that they have no meaning whatever.

Mr. Henderson says he has "confined himself to facts, which in all cases were proven," and "that he has fully justified all his original statements." Well, I am pleased to hear that he is so satisfied with himself, and am quite willing to leave it to your readers to decide these points.

I was interested to find a letter from Mr. T. E. Staggs on the same page as Mr. Henderson's letter, and this really seems to answer some of his assertions better than I can, and to clearly refute his original statements in depreciation of arc lamps. We have many similar letters from photographers, clearly showing that no special skill is required, as Mr. Henderson would have us to believe, and no one with ordinary intelligence need be afraid of investing in suitable arc lamps for their photographic work.—I am, yours faithfully,  
J. O. GIRDLESTONE.

Westminster Engineering Co.,  
Victoria Road, Willesden, N.W.

### DRYING NEGATIVES WITH SPIRIT.

To the Editors.

Gentlemen,—Some observations I made about a year ago on the phenomenon referred to in your "Ex Cathedra" notes in last week's issue (January 10, pp. 17 and 18), namely, the milky appearance often found in negatives dried with the aid of methylated spirits, led me to what I believe to be a reasonable explanation of its cause.

I found that practically pure spirit, free from any mineral oil, gave rise to the phenomenon that if the spirit be changed two or three times and the negative left in the last bath for a considerable time (quarter to half hour), the milky appearance occurs while the negative is still in the bath; indeed, it is quite easy to turn the whole film white by reflected light by prolonged soaking in spirit. As you state, the opalescence instantly disappears on wetting the film, and does not return on spontaneous drying.

The explanation I offer is that the honeycomb or sponge-like structure of the fixed gelatine film is preserved when the water is extracted from the film by means of spirit, and it is this structure which diffuses incident light, giving rise to the coalescent appearance. In normal drying, of course, the cavities formerly occupied by the haloid are obliterated by the collapse and coalescence of their walls.

I hope to find time shortly to put this idea to a proper examination by the aid of the microscope.—Yours faithfully,  
F. F. RENWICK.

P.S.—It follows directly from this explanation that it is undesirable

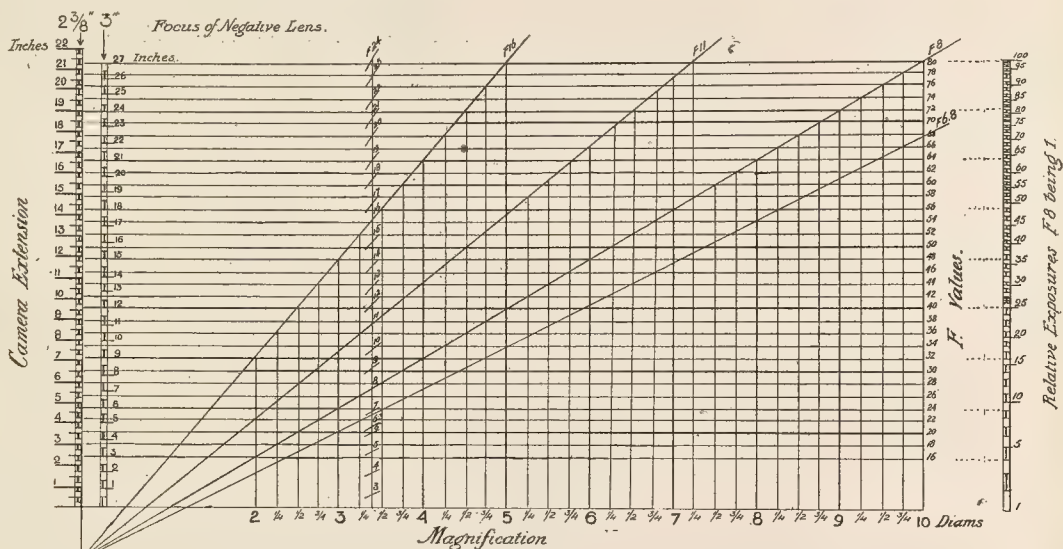
to push spirit-drying to the limit, but always to finish with a bath containing 10 or 20 per cent. of water.

Norland House,  
Avenue Road, Brentwood.

### A TELEPHOTO CALCULATOR.

To the Editors.

Gentlemen,—In reference to the recent article by Mr. A. Lockett in "The British Journal of Photography" for December 20, 1907, on "Graphic Telephoto Calculations," I am sending you a chart which I drew up some months ago and found most useful when working with a telephoto lens in the Alps last summer. By its aid



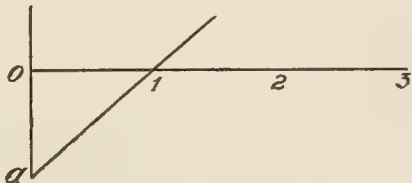
I could immediately calculate the exposure, knowing the equivalent stop in use.

The method of constructing the diagram is as follows:—

Let  $x$  be the magnification and  $a$  the constant focal length of the negative lens, then  $y$  the camera extension is given by the equation—

$$x = \frac{a}{y} + 1$$

and my diagram is nothing else but the graphic representation of this equation. As it is an equation of the first degree it is repre-



sented by a straight line, of which it is sufficient to fix two points. This is done at once by taking  $x=0$  when  $y=-a$  and  $y=0$  when  $x=1$ .

I proceed then as follows: On a horizontal line as abscissæ I set out, to any scale convenient according to the size of diagram required, the magnifications starting from zero, one of the fixed points is given at once,  $x=1$ ,  $y$  being nil. Then through the point  $x=0$  I draw a perpendicular on which I take below the line a distance  $0-a$ , equal to the focal length of the negative lens in inches

and fractions, also to any convenient scale. That being done, there remains but to produce the line  $-a1$  right through the diagram. Then  $0-a$  being, to scale, the focal length of the negative lens, there remains but to divide the vertical in inches and fractions to the same scale, starting from zero (not from  $-a$ ), to have the extension for a given magnification.

Now for the right-hand part, viz., the equivalent stops. These are equal to the stop in the positive multiplied by the magnification. I adopt the oblique line just drawn as representing  $f/8$  in the positive, so that where the vertical 2 meets this line will be  $f/16$ , where the vertical 10 meets the oblique line is  $f/80$ , while where the vertical 0 meets the oblique line (that is at  $-a$ ) the value will be  $f/0$ , so on the vertical 10 I take a distance below the abscissæ  $-a$  and divide into 80 parts the distance between that

point and the intersection of 10 with the oblique line  $f/8$ , and so construct that scale. So far we have the equivalent stops for  $f/8$  in the positive. For other stops I proceed as follows: I find a vertical (between  $3\frac{1}{2}$  and  $3\frac{3}{4}$  in my diagram) in which the distance between  $-a$  and the oblique line  $f/8$  counted along the vertical is an exact multiple of eight (in this case 2 inches = 8 times  $\frac{1}{4}$  inch), and I subdivide that vertical in  $\frac{1}{4}$  inches, which I number 3, 4, 5, etc., and which represent the stop value in the positive lens. Drawing lines across the diagram from the point  $-a$  to any of these divisions gives the corresponding lines to the given stops. In this case I have only drawn four,  $f/6/8$  (maximum aperture I can obtain),  $f/8$ ,  $f/11$ , and  $f/16$ , but any other could be put in. To find, say, the stop equivalent to  $f/11$  with four magnifications it is only necessary to follow the vertical 4 till it intersects the oblique line  $f/11$ , and follow to the right from that point where on the scale already made will be found the value  $f/44$ .

I have added further to the right a scale corresponding to the relative exposures for  $f/8$ , as that is the aperture for which many of the exposure meters are made; for instance, if  $f/40$  is the relative aperture the exposure will be twenty-five times longer than it would have been for  $f/8$ . This scale needs no further comment.

This explanation is far more complicated than the thing itself.

I hope it may prove useful to other workers with the telephoto lens. I wish some writer would make some definite statements as to correct exposure, the Watkins actinometer test near the camera being quite useless for a snow-clad peak twenty-five or even fifty miles away, as was Mont Blanc, from Leuk, and I had to climb 7,000 ft. a second time with all my tackle because my first attempts were under-exposed on following the advice given by an Ilford exposure meter. However, I was successful the second time, getting a splendid negative of the Weisshorn.—Yours faithfully,

340, Hungerford Road, Crewe.

A. THOMAS.



## Answers to Correspondents.

\**All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.*

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### PHOTOGRAPHS REGISTERED:—

J. MacMahon, 502, Union Street, Aberdeen. *Photographs of the Rev. J. P. Keith and the Rev. C. M. Huntly.*

F. J. Hatton, 28, Boroughgate, Appleby, Westmorland. *Photograph of an Old Photographic Print of Market Place, with Shambles, Old Appleby.*

W. A. Hooker, 20, Eastlake Street, Liverpool. *Photograph (Combination) of a Placed Group containing Twenty-Three Men, being the Officers and Committee of the Breckfield Conservative Club, 1907. In Commemoration of the seven-hundredth Anniversary of Liverpool's Foundation, 1207-1907.*

Miss D. Inman, 18, Lindley Road, Bradford, Yorks. *Photographs of Miss L. Holmes and Miss V. Parker.*  
T. Kirkman, 34, Top-o'-th'-Wood, Heywood, Lancashire. *Photograph entitled, "A Country Seat in Picturesque Lancashire."*

M. E. M. AND CO.—We cannot say for certain, but you might try in Leeds, Reynolds and Branson, 14, Commercial Street; in Newcastle, Godfrey Hastings, 27, Ridley Place; and in Bradford, Riley Bros., Colonnade, Westgate. A London firm which would no doubt do the work is J. Williamson and Co., 25, Cecil Court, W.C.

DEVELOPERS.—1. Could you give me a good formula of iron-citrate developer to keep in powder? Also, is "amm. cit. iron" any use in making developers or sepia toning?—F. S.

1. The Valenta pyro-caustic developer, given on p. 792 of the "Almanac," is very similar in behaviour, and is cheaper. But it is suitable only for negatives. For positives a substitute is sold by The Tress Co. 2. Potass. oxalate,  $2\frac{1}{2}$  oz.; potass. citrate,  $2\frac{1}{2}$  oz.; ferrous sulphate,  $1\frac{1}{2}$  oz. Mix and dissolve for use in 40oz. of water. The citrate of iron and ammonia of the shops is a ferric salt, and of no use as a developer.

LIQUID BACKING.—Will you kindly tell me formula of a red liquid backing to prevent halation?—N. PIKE.

Asphalt, dissolved in chloroform or pure benzole, makes a very good backing. A red mixture consists of 2 per cent. collodion, 300 parts; linseed oil, 4 parts; 50 per cent. ammonia solution in alcohol, 100 parts.

AUTOCROMES.—M. C. Gravier, in his recent letter, states that after adding sulphuric acid solution to developer the rest of the operations may be done in daylight. I thought it was essential that the plate should have at least half a minute in "C" before seeing the light. (1) Will you kindly explain why this is not necessary? (2) Has the plate to be rinsed after the bisulphite solution? He does not mention it, and I cannot understand why intensification and fixing are not necessary with his method. (3) Shall be glad for any light you can throw on it.—AUTOCHROME (Bray).

(1) Provided the developer in the plate is acidified, the plate may be exposed to weak actinic light. (2) Yes, a brief wash. (3) The silver bromide left in the film has a rather pleasing effect. Try the process, and you will see for yourself. We have an Autochrome before us made in this way.

PROF. NAMIAS' HARDENING FIXING BATH.—The formula is not quite clear to me. Is the best one as follows: Equal parts of a 1.5 per cent. solution of chrome alum and a 50 per cent. solution of hypo, to which 2.5 grammes of sodium acetate solution were

added for each 100 ccs. of the combined solution of the first two? What is the strength of the sodium acetate solution? It is not given, and I did not know that sodium acetate is itself a liquid, and if it is why is the proportion given in grammes and not in liquid measure?—AUTOCHROME.

The solid (cryst.) acetate should be dissolved—best in the hypo solution.

COPYRIGHT.—I have been given a photograph, with permission to reproduce postcards and to sell them. Can I register my reproduction? I do not know whether the photograph is copyright or not, although I got permission from a very good authority very closely connected with the actual photographer.—F. H. H.

You cannot, and you have no right to, reproduce the photograph without the permission of the proprietor unless, which is not likely, there is no copyright subsisting in it. Unless you want to incur penalties for infringement you must make it your business to discover the owner of the copyright. If the photograph is of a person who paid a photographer for taking it the copyright is the sitter's, but in any other case it is most probably the photographer's.

COMMON TINTING.—Could you inform me what methods and kind of colours required to reproduce tinted photographs as sample enclosed, whether water or oil colours are used? I understand how to put the celluloid on same, as I have tried your receipt re same out of your book.—ALFRED DEWSNAP.

Sets of colours, specially made for this kind of tinting, are sold by all the large dealers in photographic materials. They are water colours, or, rather, dyes, soluble in water.

INTENSIFIER.—(1) *re* chromium intensifier, p. 800, "Almanac." Can any other developer than amidol be used—say pyro-soda? Will it keep? (2) My studio is some distance from residence, and I find great difficulty in varnishing negatives by usual methods. Would a cold varnish, composed of part gold size and part benzole, give a little protection and not interfere with retouching, or can you give me a better? (3) Is benzine (highly rectified) the same as benzole? I asked for some of the latter at a chemist's, and they said it was the same as the former. The carriage regulations prohibit me from getting a small quantity from London.—WEEDEE.

(1) Developers without liability to stain may be used; on this account pyro should be avoided. A neutral or almost neutral developer, such as amidol, is better than one containing the usual quantities of alkali. (2) A mixture of Japanese gold size (1 part) and benzole (2 parts) forms a slow drying but excellent cold varnish, and the surface takes the pencil well. (3) Benzole and benzine are identical, a coal tar product of formula  $C_6H_8$ . "Benzine" is a light mineral naphtha, that is, a very light pure paraffin oil.

COLOURING PHOTOGRAPHS.—I should be glad if you could tell me of a good book on colouring photographs in water-colours, and where obtainable.—D. W. ROSS.

The best is "The Art of Retouching Negatives and Working-up and Colouring Photographs," by R. Johnson (Marion and Co, 2s.).

DIODES.—Dorrett and Martin, 16, Belle Vue Road, Upper Tooting, London, S.W.

GLAZING P.O.P.—The enclosed half-dozen gaslight cards, unexposed, are a sample of 1,000 cards received from the —. I have recently had 2,000 cards from them which worked very satisfactorily. These cards we cannot glaze in the ordinary way; by that I mean by hardening in about a 5 per cent. solution of formalin and squeegeeing down on glass. The difficulty we have is, after they have been put down on the glass and stood aside to dry, in a little while they begin to leave the glass in small patches, and when they are stripped the results are as per enclosed card. We have inquired of the firm the cause and sent them a card or two, and they say they had no difficulty whatever in glazing them. These were cards we had tried two and three times. They said by simply soaking in plain water and putting them down on the glass they remained perfectly in contact until stripped.

We have no difficulty with other make of cards worked side by side with them, but these we positively cannot glaze. I would say we do not consider ourselves by any means novices at this work, as during the last two years my ledger account shows we have had over 34,000 cards through our hands, all treated in

this manner. If you will kindly try these and report on same in your columns shall be obliged.—H. P. R.

We have tried the cards, using, instead of formalin, a 5 per cent. alum solution for five minutes. The results, as you will see from the cards sent you, have stripped well with a uniform glaze. We suggest that formalin over-hardens the surface.

**FORMULÆ.**—1. On page 43 of the "B.J." for January 18, 1907, is an article on "Standard Formula," but as I am not good at figures, and it is not quite clear to me, could you give me a mean formula in simple figures for, say, 10 oz. or 20 oz., or whatever quantity of water you find to suit? The mean is given over the page 44 in fractions, which I am not clear about, also amount of water not stated in that column. 2. On page 5 of "B.J." for January 3 is formula for alum-hypo by Professor Namias. No. 13 reads as follows:—

(13) Chrome alum solution .....	1.5 p.c.	...	50 ccs.
Hypo solution .....	60 p.c.	...	50 ccs.
Sodium acetate solution.....	—	...	2.5 gms.

What strength of solution is sodium acetate solution as given? But how can it be in solution when it is given in gms. as above? Kindly give me it in simple figures.—THISTLE.

1. We presume you require the formula at foot of page 43 in British measures. It will read:—

Pyro .....	60 gr.
Sulphite .....	1 oz.
Carbonate .....	400 gr.
Water .....	20 oz.

2. The word "solution" occurs in error. Solid sodium acetate ( $\frac{1}{2}$  grammes) should be used.

**FADING COLOURS.**—I should be extremely obliged if you would help me in the following matter:—I have been doing some silver prints as miniatures and tinting them with albumen colours, but find that some of them turn yellow and fade (the colours, not the prints) after a few weeks. Is this owing to their not being protected from the atmosphere by celluloid, or are the colours at fault? 2. Where can I get suitable celluloid for covering? 3. How is it made to adhere? 4. Are ordinary aniline dyes dissolved in water suitable for tinting?—MINIATURES.

1. If you find the colours mentioned to fade, we should advise you to try another make, though we have not heard of their fading before. 2. Messrs. Fallowfield supply celluloid for the purpose. 3. The print is immersed in methylated spirit, drained, and then rolled slowly over with a heated roller made for the purpose, when the two will adhere. Fallowfields also supply rollers and plates specially for the purpose, with directions for doing the work. 4. Yes, some of them. But you had better get those specially supplied for the purpose. They may be had from all the large dealers.

**STUDIO QUERY.**—Kindly inform me in your "Answers to Correspondents" whether the room described below would be a suitable studio for professional portraiture:—Length, 21 ft.; breadth, 12 ft. 6 in.; height, 8 ft. 6 in.; side light only: height 7 ft., breadth 12 ft. The fact that the light is only a side one is the main point on which I want information, as I am aware that 21 ft. is rather short.—SIDE LIGHT.

The room can be utilised as a studio, but, as you are aware, it will be short for professional purposes. The side light will answer, but we should advise you to make it a couple of feet higher if possible. We should also advise you to paper, or colour, the dark side with a light colour, so as to get a good reflected light on the shadow side of the sitter.

**PERPLEXED.**—If your commission was paid weekly we should say you were entitled to a week's notice. It certainly appears that you have been shabbily treated, and a county-court judge would, we think, take the same view of your case. It would have been better if you had had a written and stamped agreement with the firm.

**F. B.**—It is difficult to give precise rules in these cases, but one-half ounce to an ounce at least, we should say.

**COPYING.**—Will you kindly give me information on the following:—I have got a half-plate field camera, double extension, and fitted with a Beck symmetrical lens, made by Tyler, and I wish to do

some copying with it, but am unable to get more than a midget copy from a cabinet portrait. I do not want to part with the camera if I can help it, so will you advise me which is best to do? I am a cripple, and cannot afford to go to much expense. I want to be able to copy from a cabinet to the same size, if possible.—E. W. STUBBS.

If the camera racks out to double the focal length of the lens (as implied by your description of double extension), it should be possible to make a copy same size as the original. Rack out camera to full, and see what you can get; otherwise you had better make a temporary extension tube, of cardboard even, or get a so-called copying lens-attachment, a cheap form of which is sold as the Planiscope.

**F. S.**—Mr. E. W. Foxlee, 22, Goldsmith Road, Acton, W.

**TONING BROMIDES.**—1. I enclose a sulphide-toned bromide card. Could I obtain a warmer tone by this bath (page 1,059 of "B.J. Almanac," 1907)? 2. Would the following do better (I want a ruddy P.O.P. tint)?

A. Ferricyanide potash .....	77 gr.
Water .....	17 $\frac{1}{2}$ oz.
B. Uranium nitrate .....	77 gr.
Water .....	17 $\frac{1}{2}$ oz.

mixed in equal parts before use. If so, how many could I tone at one time, and would they want bleaching first, and how long might they last? 3. In a back number of the weekly "B.J." you gave a recipe for an alum hypo bath with nitrate of silver. Should I bleach prints first for this bath, and would it give a brighter warm tone?—OPERATOR.

1. Almost any sulphide toning formula should give you a warmer tone than that of the miserable specimen. 2. The uranium formula would give you a red, but not a very bright tone. The solutions A and B are mixed and the print toned in it. The results may last a year or two if properly done. A better process is that "Sulphide plus Gold Toning" on page 793 of the 1907 Almanac. 3. No, the silver is only for bringing the bath into working condition. The tones are purplish brown.

**STAINED PRINTS AND THE COLD WEATHER.**—Enclosed please find a few unmounted prints. You will notice they are all mottled with yellow stains, for which we cannot account. We use the — P.O.P., but these were made from a batch received a week ago, and we have never had any trouble with it before. At first I thought that the stains might be due to the prints being "scamped" in the washing, but my printer, who has been with me a long time, assures me she washed them as long as usual. Do you think this batch of paper is at fault?—C. H. J.

We do not. The stains are clearly due to the prints not being perfectly fixed. That is obvious by the fact that some of them show a clear mark where two have been allowed to stick together while they were in the hypo solution. In cold weather the complete fixation of prints takes a much longer time than it does in warm—a matter that is often overlooked by printers. At this time of year care should be taken that the temperature of the fixing bath is not less than 60 deg. or 65 deg., then fixation will be complete in the usual time.

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## SUMMARY.

Japanised carbon prints on ceramic ware are dealt with under the heading of "Profitable Forms of Carbon Printing." Their preparation calls for no special skill, and the results are highly effective. (P. 60.)

A lengthy paper on the properties of agar in emulsion-making by Messrs. W. F. Cooper and W. H. Nuttall occupies a considerable portion of our space. (P. 62.)

Mr. Cooper has taken out a patent for an agar P.O.P. (P. 70.)

A non-slip tripod shoe and a lantern-slide storage box are among other patents of the week. (P. 70.)

We discuss a few of the considerations which should make the photographer pause before insisting too strongly on the "professional" character of his occupation. (P. 59.)

Two cases in which verdicts were given to persons claiming the return of photographs appear under "Commercial and Legal Intelligence." (P. 73.)

Dr. C. E. K. Mees contributes a brief review of the work of Mr. J. Sterry, to whom the Royal Photographic Society has awarded its Progress Medal. (P. 61.)

A recent action with reference to daylight development in which the Kodak Company were successful is reported on page 73.

Some fallacies regarding the re-development of negatives are mentioned on page 58.

Some further notes on the dewing of lantern slides which point to the nuisance being avoidable by the proper construction of the lantern will be found on page 55.

M. Reeb gives directions for the making of stock pyro solutions for use in pyro-soda development. (P. 68.)

One or two reminders as to the drying of negatives in cold weather and the economy of properly warmed workrooms are mentioned on page 59.

## EX CATHEDRA.

### Pyro Soda.

On another page an interesting article by M. H. Reeb will be found dealing with the pyro-soda developer. It will be noticed that his formula is reminiscent in a curious fashion of two different formulæ that formed the subject of discussion in our pages some months ago. It will be remembered that we then advocated keeping the carbonate in a separate solution, and putting the sulphite after neutralisation into the pyro bottle. M. Reeb neutralises the sulphite and then adds it to the carbonate, though the object of so doing is not at all evident. It is stated that the purpose of neutralisation is to eliminate the carbonate that is always found with so-called "pure" sulphite, but the curious feature is that this neutralisation of the carbonate is immediately followed by the addition of a very much larger quantity of that alkaline salt. It should be observed, however, that the process of neutralisation described by M. Reeb does not, as a matter of fact, eliminate all the carbonate. He uses phenolphthalein as an indicator, and as this is neutral to bicarbonates the pink tinge on the paper fails to appear just when the carbonate has been converted to bicarbonate, which product will only be eliminated by the addition of a double quantity of acid. The final result of M. Reeb's method is therefore a solution containing sulphite, carbonate, and bicarbonate. He does not claim any special keeping qualities for this solution, and the advantages of the peculiar method of preparation are not very clear. It is interesting to note that a practical authority like M. Reeb still believes in adding carbonate to counteract under-exposure, and pyro solution to remedy over-exposure.

### Dr. Mees and Spook Photography.

Any one possessed of the gift of "reading between the lines" can be trusted to make startling discoveries, so we need not be so very surprised to find that Dr. Mees is unexpectedly credited with the production of a plate eminently suited to photograph spooks, and ghosts, or astral beings, as they are now styled in the most refined spiritualistic circles. According to a contemporary, Dr. Mees recently made a communication to the R.P.S. to the effect that by means of a dry plate specially sensitised with dicyanin it was possible to photograph forms floating about in the air which have hitherto never been either seen or photographed. We have no recollection of such a communication, and cannot find it in the R.P.S. Journal, but possibly it was discovered by photographing the report of what Dr. Mees did say upon a dicyanin plate. Anyway, it is now down in obvious print, and Dr. Mees has achieved a public reputation that we feel he does not deserve and fear he does not wish for. In any case, we are afraid the plate will not do all that is claimed for it, seeing that it is specially sensitised for the red, while spooks are generally supposed to be of an ultra

violet hue. We may, however, be wrong on this point, and perhaps the gifted person who heard or read Dr. Mees' communication has good reason for knowing that red is the predominant colour in the astral world.

\* \* \*

#### Exposure With Telephoto Lenses.

In a letter by Mr. A. Thomas, published in our issue of January 17, the writer expresses a wish that someone would make some definite statements as to correct exposure with the telephoto lens, as he has found ordinary tests with actinometer and exposure meters quite useless when dealing with very distant objects. As telephoto work on very distant objects generally means a high magnification and a correspondingly small effective aperture, it seems likely that the trouble is due to an effect similar to that which upsets our calculations in autochrome work. When dealing with either light of small intensity, or plates of very low speed, it is evident that ordinary rules of exposure break down to some extent, and that following those rules rigidly leads to effects of under-exposure. Mr. Thomas's statements serve to emphasise what we have suggested in another paragraph, viz., that it is very desirable to give further consideration to the matter of exposure with the view of finding some method of getting over these difficulties.

\* \* \*

#### Cautious Free-Enlargement Firms.

The report of a case tried in a Yorkshire county court last week, which appears under "Commercial and Legal Intelligence," is an indication that the free-enlargement canvassing firms are getting uneasy at the prospect of coming within reach of the law. As our readers know, sentences of terms of hard labour have been passed on canvassers who on the pretext of something for nothing have induced ignorant people to pay them small sums, alleged to be for the carriage of the promised enlargements, which, it is often represented, is being made by way of an advertisement. A case of this kind was reported in our issue of January 10, and now we find another of the "art companies" turning back from its game of bluff at the door of the county court. They had threatened in two cases to sue for payment of frames which had been delivered with "free" enlargements, but when the case came on begged for an adjournment on the ground of illness of witness. But as they declined to pay the costs of the day into court no adjournment was granted, and the judge gave a verdict for the defendants in each case with costs.

\* \* \*

#### Re-development.

The redevelopment of negatives and prints is now very frequently employed for various purposes; sometimes for intensification, and sometimes to clear stains or improve colour. A great deal has been written on the various methods, and much time has been devoted to their investigation, so it is a little surprising to note the frequent errors that various writers still make in regard to the subject. For example, we have just read that a print bleached in potassium ferricyanide and potassium bromide should be exposed to sunlight for a time before development. Yet it has been pointed out on numerous occasions that such an image requires no exposure to render it developable, and that too much exposure will often make it undevelopable. As the bleached image does not consist of normal silver bromide, but of a readily developable "photo-bromide," the exposure is a quite unnecessary risk. Again, in another article, we are told that if an image is converted into a chloride by the use of a bath rich in chlorine, redevelopment produces intensification, because silver chloride readily yields a much more opaque image than silver bromide. The last statement

has no foundation in our knowledge, and, as a matter of fact, some experimenters have expressed the opinion that bromide yields the blacker image. Generally, the difference is practically inappreciable, and in any case the condition of a bleaching bath "rich in chlorine" is one that is usually quite fatal to intensification at all. Free chlorine in the bleaching bath gives normal silver chloride that requires exposure. To produce intensification the production of the "photo-chloride" seems to be necessary, and this is not formed in the presence of chlorine only in that of various compounds of chlorine, such as chlorides, the action of which is very indefinite. Any kind of bleaching bath rich in either chlorine or bromine is to be avoided if intensification is desired.

\* \* \*

#### Screens for Newspaper Half-tones.

In our issue for January 10, p. 28, reference was made to Richter's process for making coarse half-tone cuts. Further notes on this process have recently appeared in the "Photographische Korrespondenz," illustrated by some very striking results on coarse news paper, with forty-five lines to the inch in the lights and ninety lines in the shadows. Comparative cuts are also given on finer paper, with seventy-five lines in the high-lights and 150 in the shadows, and an ordinary half-tone, with 150 lines everywhere. The better drawing in the shadows and brilliancy of the compound illustrations are most marked. No further working details are given beyond those in our previous note, but it is suggested that the new process would be of considerable advantage in three- and four-colour printing. A company has been formed in Berlin to work the process.

\* \* \*

#### Dew on Lantern Slides.

Our previous note on this subject has already drawn some interesting information. We are reminded by a friend that the better slides are bound, the more certain are they to show moisture in the lantern. Badly bound slides, or ones with the binding partially torn off, seldom show the effect at all. He has further noted that slides that are liable to become dewed very soon become badly pitted and spoilt. This confirms what we suggested before, that the moisture is derived from the slide itself; that is to say, from the gelatine and paper. To roughly test this, we took a slide from a box in which it had lain for a very long time in a cold and rather damp room, and exposed it to the dry heat of a gas stove. With the cover-glass side held away from the heat, the slide immediately dewed all over on the inside of the cover-glass, just as much moisture being apparent over the black paper mask as over the gelatine film. On reversing the slide, with the cover-glass nearest the source of heat, which is, presumably, the position of the slide in a lantern, no dewing effect was apparent. If, however, the slide had been enclosed in a lantern, and so protected from cold air on the other side, the dewing might have taken place. To test this, we enclosed a slide in a printing-frame with the cover-glass exposed, and on heating both the frame and the cover-glass the dew again appeared, though not so rapidly nor to such an extent as when the heat was applied only to the image side. This experiment is suggestive of several things. First, that a desiccated and varnished gelatine emulsion slide bound up with dry non-absorbent binders and masks should not dew at all. Second, that as the effect is evidently due to the saturation of the film between the two glasses free ventilation between them is desirable. And, third, it also suggests that to produce the effect in the lantern the glass nearest the objective—that is, the slide itself—must be, if anything, slightly hotter than the cover-glass. This is rather an unexpected conclusion, but possibly the conditions may be fulfilled if there is freer



ventilation between slide and condenser than between slide and objective. We regret to find a slip in our previous note on this subject. While it is obvious that the air in the lantern is drier than the air in the room in the sense that it is very much farther from the point of saturation, yet it does not therefore follow that it contains less moisture. This is not a matter of much importance, seeing that it is impossible for the moisture on the slide to be derived from the air in the lantern unless the slide happens to be very much colder than the air outside the lantern. This, of course, cannot be the case if the slide has been kept in the room.

\* \* \*

**Drying negatives.** During the very cold or the very damp weather which we are likely to get during the winter months difficulties arise in connection with the drying of the negatives developed and racked in the early part of the evening. Possibly the warming of the studio and work-rooms is slackened off after four o'clock, when further sittings cannot be made, and by six or seven o'clock, when the negatives are set out to dry, the temperature has fallen maybe as low as 45 deg. F. If the atmosphere is really dry—that is, as dry as warmed rooms often are—the absorption by the air of the moisture in the gelatine films may proceed satisfactorily. It is, however, more than likely in many cases that the air is fairly moisture-laden, and so drying is very slow. Should the temperature fall below freezing-point markings on the film are almost certain to occur. In order to avoid any risk in this direction, and to ensure the negatives being ready for the retoucher first thing next morning—a most essential matter if proofs are to be promptly despatched—a drying cupboard should be arranged. A large air-tight box arranged as a cupboard with well-fitting door may be fixed up so that the racks of negatives will stand on perforated shelves within it. At top and bottom a 12-in. length of sheet iron tube should be fitted, the top piece as a chimney and the bottom piece to prevent a tiny Bunsen gas jet from coming too near to the wood of the cupboard. A current of warmed air will pass through the cupboard, and any trace of fumes from the gas will have no detrimental effect on the negatives. If preferred, the gas jet may be at the top of the chimney, thus drawing the air through the cupboard; fumes in the cupboard are avoided, and any risk of over-heating also.

\* \* \*

**Temperature of Workrooms.** We recently had a short conversation with a printer employed by a firm of photographers doing a considerable business, during the course of which it was mentioned that printing was done out of doors, and that the room used for changing and the toning of silver prints and development of platinotypes was totally unwarmed. During toning it was the practice of the unfortunate printer to light a small gas ring and haw his numbed fingers over it. Quite apart from the question of common humanity, on which it might not be well to let ourselves go, we think such parsimony in the matter of warming is very short-sighted policy. No one, however willing, can work well under such conditions. It is physically impossible to change prints deftly and quickly with half-frozen fingers, and during the bitter weather of the past month no smartness of movement is sufficient to keep the extremities warm when the changing and toning room is several degrees below freezing-point. Further than this, it is most probable that the waste of gold due to carrying on toning at such a low temperature is in excess of the cost of fuel for warming, provided a suitable closed stove or hot-water system were employed. It has long been recognised by our commercial friends in

America that attention to the welfare of employees is not an expense but a profitable investment, and in England many of our progressive firms give as much attention to the warming, lighting, and ventilation of their work-places as to that of their own residences. The greatest suffering is in small and unorganised businesses, where competition is most felt and expenses are rigidly kept down; but it cannot be too often pointed out that many supposed economies are false economies, and that the "penny wise and pound foolish" policy never will pay.

## SHOULD THE PHOTOGRAPHER POSE AS A PROFESSIONAL MAN?

We often hear from some of our good friends among portrait photographers of the exalted station which the noblest and the best of the photographic fraternity—our good friends would no doubt include themselves—should regard themselves as occupying. "Let us take ourselves as professional men," we are told, "and the public will accept our valuation of ourselves. Perhaps not now, but presently." Many of those who adopt this tone cannot for a single instant be charged with snobbery in the matter. They are perfectly candid. They are convinced that there is "more in" portrait photography when it is regarded as a profession than when it is conducted on the common principle of buying and selling. Willingly we give the devil his due because we would like to discuss—and possibly the reader may wish to discuss—whether such an attitude can be taken under existing conditions, and what it involves not only in the photographer's relations with the public, but in his relations with other photographers. For most certain it is that the assumption of professional dignity must be made simultaneously and concurrently with certain radical changes in the photographer's conduct towards both the public and his fellow photographers, or it at once becomes ridiculous in the eyes of those with any sense at all of social distinctions—certainly in the eyes of the people whom the photographer hopes to catch in his newly made nets.

We would not be thought to be taking the view that this exaltation of rank is not a very desirable thing from the financial standpoint. It may or may not be; there are poor professional men just as there are poor shopkeepers, and we doubt very much whether the ability to obtain money by painting portraits, prescribing medicines, or giving legal advice is actually different in kind from the ability to sell cheeses, or potatoes, or cabinet photographs at a profit. In any of these pursuits the man of genius will make or command a fortune and will earn the huge commissions of a Sargent or make a corner in cheese. But among the mediocre types in each class the difference is not important, and what applies to one applies pretty much to another. The question is—and apparently it is not definitely asked and answered by those who prescribe professional dignity as a panacea for the ills of a portrait business—can the so-called "professional photographer's" business be profitably reconstituted on the lines of the professions proper, such as the dentist's, the doctor's, the lawyer's. There are photographers who are quite professional in their methods, who announce their habitation as formally as the brass plate of "Messrs. Silk and Stuff, Solicitors," who never resort to a solitary line of advertisement, and whose other procedure is in accordance with the canons of "professional conduct." But such men would never pay a quarter's rent if their work was not so distinctive that people, having once seen it by chance, sought them out to commission them. Our professional reader will retort—and rightly—that that is a method of drawing people to his studio upon which he relies as much

as does the highly individual worker; yet he probably ignores the fact that the difference between his work and that of his competitors is insignificant compared with that between the good photograph of the average studio and the productions of the very few men who have found it possible to make their business semi-private. Thus we are forced to the plain common-sense view that a photographer is a tradesman just as an author is a tradesman, and both get on in precise proportion as they produce a saleable article and take the best means to secure the best price for it. If there are photographers who are able to conduct their businesses on the basis that they give to the sitters what they (the photographers) think best for them, the essence of their strength will be found, at any rate, equally divided between their work and their powers of handling men and women, even if the latter does not account for the larger proportion. Ordinary conditions cannot be held to apply to such men, who, to exist at all, must breathe the air of a metropolis. In the case of photographers, who perhaps are their equals, technically and artistically, but have not "a way with them," there is no evidence but what points to the studio as essentially commercial in character, a place for selling at the best price, and with regard to the same circumstances which have to be considered by the successful shopman. If this argument were not sufficient, the obligations towards those following the same occupation as himself, which are a part of professional conduct, might be cited in further proof of the present improbability of the photographer successfully living up to the standards which have been suggested. But any remarks on a possible creation of such a thing as photographic etiquette would take us beyond the space now at our disposal, and we must defer them until an early issue.

## PROFITABLE FORMS OF CARBON PRINTING.

### II.

In our last article we referred to the employment of Japanese vellum as a support of the carbon print and to the rich effects thus obtainable; and we were able to give directions for presenting in the finished prints the surface and texture of the vellum. We may now allude to a further application of carbon printing which deserves attention.

During the past year or two the fashion for photographic portraits in jewellery has been decidedly increasing. The cheaper kind are faced with celluloid, after the manner of the photo-buttons, but most of the better class are veritable ceramic photographs, where the picture is vitrified in enamel on a copper base. The production of these vitrified enamels is not a really difficult matter, but the process is one that has to be learnt and it necessitates the possession of a suitable muffle furnace for the firing in. This latter is not a costly affair, as only a small one heated by gas will suffice for small pictures, such as are required for jewellery and the like. But if we require ceramic photographs on a larger scale—say, plaques of ten to fifteen inches—a muffle of a much larger size becomes absolutely necessary. There is, however, a method of producing photographs on ceramic ware—enamels, porcelain plaques, tiles, etc.—quite equal in appearance to—and to all intents and purposes as permanent as—veritable ceramics. The method will give pictures in any colour, and allows of colouring or working up in monochrome, operations which become somewhat expensive when we have to do with "fired-in" pictures.

We have little doubt that photographers who care to make a feature of what may be termed imitation ceramics of a fairly large size, would find them a good line in their

business. When we now explain how the pictures are produced, it will be seen that the process is really a very simple one, especially to those who are accustomed to work the carbon process. It may be mentioned here that the process has more than once in past years been described in these pages; indeed some five-and-twenty years back formed the subject of a patent, though, if our memory serves us rightly, it did not go beyond the "provisional" stage. Possibly that was because it was introduced before its time, like many other processes which have afterwards proved valuable, if not to their inventors, to others who benefited by them.

In a word, the picture is a japanned carbon print on enamel, porcelain, earthenware, or other vitreous support. The procedure is as follows:—The carbon picture may be made either by the single or the double transfer method. On the whole, we prefer the former, as it is the least trouble. The porcelain or other vitreous support is first thoroughly cleaned, and is then coated with a solution made as follows:—

Nelson's No. 1 gelatine .....	1 oz.
Water .....	20 ozs.
Chrome alum, dissolved in 2 ozs. water...	20 grs.

The support is allowed to dry after this application, and is then ready for use. It is not necessary here to go into the working details of the carbon process, as most people nowadays are quite familiar with them. It is sufficient to say that the procedure is as usual, but we may add that it is desirable to employ a tissue that contains a large amount of pigment in proportion to the gelatine, so that in the japanning the varnish will be the better bonded to the porcelain plaque. The tissue, after printing, is squeezed on to the substratum plaque just in the same way as if it were on opal glass or single transfer paper, developed and alumed in the ordinary manner, and allowed to dry. If the double transfer method is employed, the image is developed on flexible support in the usual way and then transferred to the plaque. In this case the latter is coated with a solution made as follows:—

Nelson's No. 1 gelatine .....	1 oz.
Water .....	20 ozs.
Chrome alum, dissolved in 2 ozs. water...	12 grs.

It will be seen that at this stage our picture is a simple carbon print on a porcelain support. It has now to be japanned.

Japanning, it may be explained, is the application to a surface of three or four thin coatings of a hard varnish such as amber or copal, and the subsequent exposure to a somewhat high temperature for some hours, so that the successive coatings, so to speak, are welded together by the heat. A very suitable varnish for our present purpose is that sold by all high-class varnish makers under the name of "Pale copal varnish for stoving." The varnish—the first coating of which should be mixed with an equal bulk of turpentine—is thinly applied with a brush. In the subsequent coatings the varnish is used as it is supplied by the makers. When the first coating is thoroughly dry, and not before, a second is laid on, and when that is dry, another. Three or four, or more, will be required to get a surface like that on a highly glazed vitrified enamel. Should brush-marks show, they are of little moment, as they will spread and disappear as the coating becomes somewhat softened in the stoving. If there is a professional japanner in the photographer's neighbourhood he would probably execute this part of the work for a reasonable charge, as he will have properly constructed ovens or kilns for the purpose always in use. However with a little experience equally as good results may be obtained in the



ordinary kitchen oven. It goes without saying that while the successive coatings of varnish are drying the surface must be carefully protected from dust, for if any gets embedded in it it cannot afterwards be got rid of. After the last coating is thoroughly dry the plaque is placed in the japanner's kiln, or the kitchen oven, and kept at a temperature of from 140 deg. to 180 deg. F. for six or eight hours. In that time the varnish will have become as hard as the surface we have on the best tea-trays and similar japanned articles.

The surface of the picture is now polished, first with very fine pumice powder and finally with tripoli or rouge. We have now a picture which has all the beauty of a fine enamel, while it is as permanent as if it were actually "fired" into an enamel plaque. We are all fully aware of the extremely hard surface of japanned ware, and we also know the permanency of the carbon picture.

These pictures can, of course, be highly finished in water-colour or in monochrome, and they are exceedingly effective. That, however, must be done before they are japanned; the varnish will not interfere with the colouring in any way. We may here mention that if the pictures are coloured it is not advisable to gum up the shadows, as the varnish fulfils the same end, and it is not desirable to have more of a medium non-penetrable by the varnish than is actually required.

A word as to the mounting of the pictures: Those of small size, on the usual enamel tablets, can, of course, be fitted into locket, brooches and the like. A suitable mounting for the larger sizes, say six inches and upwards, on convex porcelain plaques, would be the ornamental gilded frames, now so general. Of course, the pictures require no glass as a protection, nor would it be desirable to have it.

## THE AWARD OF THE R.P.S. PROGRESS MEDAL TO MR. J. STERRY.

[We announced last week the award, by the Council of the Royal Photographic Society, of the Progress medal to Mr. John Sterry. The following note by Dr. C. E. K. Mees may serve as a useful referendium to the earlier work of Mr. Sterry on solarisation and the latent image.—Eds. "B.J."]

THE award of the Progress Medal of the Royal Photographic Society to Mr. John Sterry will be judged by all as the just reward of much unostentatious hard work done by a real amateur, simply from love of knowledge. Without special scientific training, Mr. Sterry has devoted a very great capacity for scientific research to the elucidation of photo-chemical problems. He had for some time been experimenting in a tentative way with photographic plates, when in 1890 Messrs. Hurter and Driffield cleared the whole horizon of photo-chemistry by the publication of their notable paper "Photographic Investigations," and he was quick to see the importance of the methods of research which they had employed, and of the principles which they maintained. Mr. Sterry threw himself heart and soul into the defence of the new scientific basis of photography against those who appeared, judging by their publications at that period, to desire to prevent photo-chemistry being put on any rational basis. The opponents of Messrs. Hurter and Driffield, with few exceptions, did not offer any positive suggestions, their criticism was purely negative, and they did not seem to have realised that inaccurate work, or only partially accurate work, 's better than no work at all. Mr. Sterry fought manfully for the cause, and was the means distinctively of introducing the speed-testing system advocated by Messrs. Hurter and Driffield into commercial life by his influence with some manufacturing firms.

The Progress Medal of the Royal Photographic Society, however, could scarcely be awarded for controversy, however much needed or able, but Mr. Sterry has distinguished himself quite as much by his own researches as by his advocacy of the principles held by Messrs. Hurter and Driffield. In 1895 he published a paper on "Standard Plates, and Some Causes of Apparent Alteration in Rapidity," the true value of which has even yet not been fully appreciated. Among other matters in this paper was discussed the effect of moisture on the sensitiveness of plates, and some of the views expressed have an important bearing upon the cause of solarisation. These views are, in some respects, opposed to those of Messrs. Hurter and Driffield, a fact which is noteworthy as showing that Mr. Sterry has been no slavish or uncritical follower. He took a considerable part in the controversy on development which raged in 1895 and 1896, and in 1898 he published a paper on the "Two Latent Images (Organic and Inorganic), and Development after Fixing,"

in which he demonstrated the nature of the image which is left when an exposed plate is fixed, and can be developed by the use of a reducing solution containing silver, i.e., by what is known as physical development.

Other small researches on the development of gelatino-chloride paper and the reversal of the photographic image followed, and in 1904 Mr. Sterry published an exceedingly important paper on the action of chromic acid on the latent image, in which he expressed the opinion that development is separable into primary and secondary actions, the first action being the development of the exposed silver bromide, and the second the intensification of this exposed silver bromide by silver bromide dissolved from adjacent portions of the unexposed salt.

This theory has a most important bearing on the whole theory of development, and it was attacked in 1906 by S. E. Sheppard and myself. Mr. Sterry replied to our objections in a paper in 1907 on "The Actions of Exposures upon the Development of the Latent Image."

In polemical matters Mr. Sterry has invariably shown the true spirit of a scientist; he has, in his research work, been a true amateur, working for the love of the subject and for the love of truth, and has never allowed prejudice or preconceived opinions to prevent him from accepting with careful, frank, and fair criticism any new fact or theory which might be brought to his notice, however opposed it might be to conclusions previously formed by him.

The practical results arising from the 1904 paper were of importance. Mr. Sterry worked out a method of improving the rendering of bromide paper when printing long scale negatives having a great range of contrasts, by soaking the paper after exposure in a solution of potassium bichromate before development.

For the last two or three years Mr. Sterry's activity in research has been somewhat diminished by reason of domestic sickness, but there is every reason to hope that he will shortly be as active as ever; he is, indeed, preparing another paper on solarisation which promises to be at least as important as those which he has already published. It is to be hoped that for many years Mr. Sterry may be able to continue the investigations which the Royal Photographic Society have recognised by the award of their valued Progress Medal.

C. E. KENNETH MEES.

## AGAR-AGAR IN EMULSION MAKING.

(A Paper read before the Royal Photographic Society.)

THE work of which I am about to speak has been undertaken by scientific men who are not practical makers of material for photographers. Papers have been mostly coated by hand; only quite recently has a small machine been made; the plates which will be shown were coated by men who had only had a small experience in wet-plate collodion work; and a medium new to the purpose was employed. On this account, I must ask that certain allowance be made for the quality of the results which we show. The work has been of a scientific, rather than of a technical, character; but I trust that we shall show in the sequel that the results obtained will be of practical value.

### History.

When commencing the work, we could obtain no data upon which to found our experiments, so that we have been working somewhat in the dark; but we believe that our results will form the basis and starting point for those who take up the study of agar-agar.

The first notice we have of agar in Europe, is in a paper by Payen ("Comptes Rendus," 49, 521), in 1859. He mentions that a sea-weed was found in 1856 in China, of which a sample was sent to him for examination. The alga was *Gelidium corneum*, or what is known as agar-agar, and he gives a short account of the properties of colloidal solution obtained by boiling it with water; also he gives an analysis of the substance. He also speaks of it as being the sea-weed out of which gulls build their nests, and that it is the substance which is used by the Chinese in making "birds' nest soup."

In 1862, Stanford ("Jour. Soc. Arts," 10, 186) refers to the peculiar principle in gelose described by Payen, and states that very few algae contain this principle, certainly none to the extent of agar-agar.

In 1874, Heilmann wrote in "Dippels Polytechnisches Journal," but we have not been able to find his paper.

In 1880, Morin ("Comptes Rendus," 90, 924) gives results of a further study of the substance, but these will be included in our work when discussing the properties.

A little later in the same year Porumbaru ("Comptes Rendus," 90, 1,081) communicated the results of his more detailed examination. He gives a more correct analysis of the colloid, but as his own substance contained 3.5 per cent. of ash, it must have been very impure. He mentions that when heated to 150 deg. to 160 deg. C. in sealed tubes, it yields a black humic substance, insoluble in water.

In 1882 Garnish ("Arch. Pharm." [3], 20, 241) gives notes on a carbohydrate obtained from *Fucus amylaceus*, which he compares with Payen's "gelose," this being convertible into arabinose. In this he seems to be in error, as Bauer has shown ("Jour. Prakt. Chem." [2], 30, 375) that gelose yields galactose. He says that gelose is not identical with lichenin.

In 1882, Stanford ("Jour. Soc. Chem. Ind.," 3, 297), in discussing algin, speaks of *Gelidium corneum* and gives the different amounts of four substances required to form jellies of equal consistency; he also gives the "melting points," but these are the solidifying points and not the melting points:—

Substance.	Parts required.	Setting point.
Gelose .....	1 .....	90° F.=32° C.
Isinglass .....	4 .....	70° F.=21° C.
Gelatine .....	8 .....	60° F.=15.5° C.
Carrageenin .....	9 .....	70° F.=21° C.

In 1889, Voigtlander ("Zeit. Phys. Chem.," 3, 316) shows that diffusion takes place in agar, as in water.

In 1902, Desmoulier ("Ann. Chem. anal.," 7, 201) distin-

guishes between gelatine and gelose, by the fact that gelatine gives a precipitate with tannin, picric acid, or lime; but as matter of fact, agar also gives a precipitate with tannin. To separate gelatine and agar, he evaporates to dryness with formalin, and extracts the residue with water. The gelatine is rendered insoluble, whereas the gelose is dissolved and will set.

Py ("Jour. Pharm." [6], 2, 488) suggests the presence of diatoms as being a distinguishing characteristic of gelose in jams.

Levites in 1903 ("Jour. Russ. Phys. Chem. Soc.," 35, 253) shows that in agar solution, chlorides, bromides or cyanides accelerate gelatinisation; salts of monobasic acids retard, whilst salts of polybasic acids accelerate gelatinisation.

Before considering the reactions in detail, it will be necessary to refer to certain matters, as I am legally compelled to do so, and also they are very instructive. Last year, I was approached by Mr. P. Gillard, and asked to take up a new paper which he claimed to be his own invention. Demanding that he should demonstrate his process to me, I gave him facilities to do so in my laboratory. The paper was to be a self-toning paper in agar containing gold and platinum, and having certain properties. Some of these papers were undoubtedly good, but one could not be certain of the result of any particular coating. Mr. Gillard failed very materially, in that he could not turn out consistent results. These failures are of great interest, however, and I suppose that the difficulties which prevented him from turning out consistent results, are the same as would be encountered by others trying to use agar. Therefore they will be of interest, and we think we can point out the reasons and how to overcome them. We may mention here that Messrs. Morgan and Kidd are turning out agar P.O.P., and therefore it is possible for others to do so; moreover there are agar papers on the market in Germany. It is quite obvious to us that agar can be used as a medium for plates and bromide paper.

Mr. Gillard's failures were chiefly:—

- 1st. The agar solution was not clear, containing small granules.
- 2nd. In making the emulsions one found that it would become thin and limpid, and would not set.

(This was termed peptonising: but the term is quite wrong, as peptones are nitrogen compounds, whereas agar contains no nitrogen, and therefore cannot be peptonised. We use the term de-gelatinise therefore.) This second fault would occur, sometimes in making the emulsion, sometimes when made and whilst coating; sometimes it went limpid as a whole, while at other times it occurred in parts, causing a peculiar granular appearance.

- 3rd. Agar does not dissolve in water, unless heated to 100 deg. C., i.e., the temperature of boiling water.
- 4th. If cooled to 32 deg. to 35 deg. C. it sets very quickly and then will not dissolve again unless boiled once more; if this be done with an emulsion it is often quite spoilt.
- 5th. When he added his gold chloride to the emulsion, it was necessary to get it on to the machine without a moment's delay, otherwise the gold was reduced to the metallic state before the emulsion was on the paper. The causes of these difficulties, and methods to overcome them, will be explained later.

When I inquired of Mr. Gillard what knowledge he had of agar, I found that practically nothing was known: I could get no books on the subject, so that it was necessary to set to work



look up references to it, and to ascertain its properties. This is the work which Mr. Nuttall and myself have undertaken. The first question is: "What is agar?" "To what class of substance does it belong?" It has been shown by Payen and Porumbeu that it does not contain nitrogen, therefore it is not a proteid, peptone, or albumen; nor yet is it a proteoid or an albumenoid, i.e., it is not a gelatine, nor a glue; it differs very materially from all these in its properties. It seems that it must be placed amongst the more complex carbohydrates, celluloses, starches and gums. On oxidation with nitric acid the two elements yield oxalic acid, whereas the gums and agar-agar yield acetic acid. For this reason Allen classifies it as a gum. Senior so classifies it as a gum. It has been shown by Payen ("Jahresbericht," 1859, 562) to be similar to, or to yield, Pararabin or Stet-sugar gum. From its properties it appears that this is the correct group in which to put it, therefore, though in many of its properties it is anomalous.

As bought, it is in the form of long translucent, stringy pieces, tough, dry, and hard. Soaked in water, it swells up as do gelatine and the gums. The soaked substance dissolves in water when boiled, and then only slowly. Our method of dissolving is to cut up the agar into small pieces; soak them in running water for some hours; then place in distilled water; heat the water until it boils, and continue the boiling for a quarter of an hour, stirring vigorously the whole time. If the boiling is not continued long enough two things will be noted: firstly, that the solution is lumpy, i.e., that the agar has not dissolved completely; and, secondly, that it is more difficult to strain.

For bacteriological purposes the treatment at the Cambridge laboratory is to soak the agar in a 1 per cent. solution of acetic acid for twenty-four hours, wash out the acid in running water, and dissolve up by boiling. We may mention in passing that the acid has no ill effect; we have treated several lots in a similar manner with good results, but the treatment seems to be unnecessary.

Having dissolved the agar, we proceed to strain it, in order to retain solid impurities. This we do in practice through main-cloth (we shall be dissolving some up in a short time, and the process will then be seen). The solution is then fairly clear, but contains a large quantity of peculiar, slightly opaque specks, and is not quite transparent as gelatine is. This renders it useless for use in emulsions for plates, but the solution can be made perfectly clear by filtering. At Cambridge it is filtered through a special paper in a large funnel, the whole being enclosed in a steam-jacketed chamber, which keeps the agar hot. (The paper can be bought from any dealers in chemical apparatus.) We dissolve each gram of air-dried agar in 50 c.c. of water, which makes a 2 per cent. solution. This is then filtered at as high a temperature as possible through a hot Buchner funnel, using a pump, the flask being placed in hot water. Such a solution is quite clear and transparent.

This forms the solution of gelose. Such a solution has the following properties, though in giving these we must note that the age of the sea-weed seems to have some effect on the properties; our results do not quite agree with those of earlier workers.

A solution of agar in water sets when cooled, the temperature at which it sets being about 33-35 deg. It sets very rapidly when cooled to the setting temperature, more rapidly than gelatine. The gelatinising property is very great; it is said to be ten times as great as gelatine. Stanford puts it down as eight times as great; Allen states that gelose will form a jelly with 500 times its own weight of water.

Peculiarly enough, and entirely different from gelatine, a solution of gelose can be boiled for a long time without becoming much less viscous. Indeed, we frequently evaporate a solution which is too weak by boiling until it is quite thick. We may boil some solutions for an hour or more. Any agar which remains over from an experiment is allowed to set, and is kept for some days; when making an emulsion, we boil it up with more

water and evaporate off the excess. We found that after boiling for a quarter of an hour, the agar solution was slightly less viscous, but that continued boiling, within reason, does not make much difference for practical work. The boiling solution must be vigorously stirred in order to prevent it from being burnt; if burnt, it is quite useless for emulsions, as it produces a very dirty colour. This peculiarity is of importance. Gelatine is a nitrogen compound, and when hydrolysed by boiling or by heating with acids or alkalies, it forms various compounds, amongst which are leucine and glycocoll and ammonia. Leucine is ammonia in which one hydrogen atom is replaced by the caproic acid group; it is an amide. Glycocoll is ammonia in which one hydrogen atom is replaced by the acetic group; it also is an amide. These two compounds are such as one would expect to cause for in an emulsion, just as ammonia does, and we think that the spoiling of emulsions in gelatine may be put down to this cause in part. Now agar cannot form such compounds, though it may form aldose compounds which would reduce the silver; certainly if heated with water under pressure, gelose is hydrolysed and yields a sugar. This may account for some of the difference between working in agar and in gelatine.

On soaking agar and squeezing to extract the surplus water, we noticed that some matter appeared to be washed out. We took some agar and soaked in distilled water, poured off the water through a filter paper, and added a further quantity of distilled water. We repeatedly poured off the water in which the agar was soaked, at intervals of about an hour. The washings were then evaporated to dryness, and it was found that 18 per cent. had been washed out of the agar by the water, for the filter paper would have retained any solid matter.

Air-dried agar usually contains about 21 per cent. moisture, driven off at 100 deg. C.

The percentage of ash in our sample was .487 per cent.

The density of a solution of agar at 50 deg. C. is less than that of water at 50 deg. C. We attempted to determine if the density could be used to ascertain the amount of agar in solution, but this has not been done up to the present.

The viscosity of a solution of agar is much greater than that of gelatine with the same percentage of solid. We have estimated that a solution of gelatine of definite strength is about as "thick" as a solution of agar containing  $\frac{1}{8}$ th of the amount per cent., this agreeing with the figures given by Stanford.

Barker's P.O.P. formula contains 8 per cent. of gelatine; Valenta's contains 9.6 per cent.; Beadle's contains 11 per cent., so that a solution of agar 1-1 $\frac{1}{2}$  per cent., or 2 ozs. to the gallon, should be sufficient. We recommend that those trying agar for the first time should start with a 1 $\frac{1}{2}$  per cent. solution.

A solution of 3 per cent. is difficult to use, as it is too thick. We find a 1 per cent. solution is most convenient, though a 2 per cent. solution is quite easily worked. A 1 per cent. solution is about as thick as an 8 per cent. solution of gelatine. If two emulsions containing the same amounts of chemicals, except that the medium in the one is gelatine and in the other is agar, and if the solutions are of the same "thickness," then the amount of agar will be one-eighth the amount of gelatine: in coating a plate or paper with these solutions and drying one will get the same amount of silver per square foot, but only one-eighth of the amount of medium when using agar. In the case of paper this would not matter so much perhaps, but with plates it means that the pellicle will be extremely thin. It will be of great interest to ascertain what influence this has on the sensitiveness of the emulsion and on the development. If the pellicle is so much thinner the light will be able to act more rapidly on the sensitive salt and should give increased rapidity. One would expect that in development, the developer would penetrate more rapidly and therefore develop more energetically; on that account also less exposure should suffice. In that case, one should be able to obtain plates of extreme rapidity, great latitude, and with a fine grain. Would the gradation be as delicate,

however? The plates which we made, worked like wet plates; they were developed and washed as quickly. One of them will be shown to-night which was intensified with mercuric chloride and potassio-silver cyanide three times, and completely washed, all within five minutes: it will be seen that (though the plate is badly coated) there is a total absence of the stain which would have existed had the intermediate washings been incomplete. This emulsion was matured by being plunged in boiling water for five minutes. The speed was about 65 H. and D.

The following do not form a precipitate with the solution of gelose:—

- |                               |                       |
|-------------------------------|-----------------------|
| 1. Copper sulphate.           | 9. Platinum chloride. |
| 2. Lead acetate (normal).     | 10. Gold chloride.    |
| 3. Nickel sulphate.           | 11. Chlorine.         |
| 4. Mercuric chloride.         | 12. Bromine water.    |
| 5. Iron chloride.             | 13. Iodine.           |
| 6. Iron sulphate.             | 14. Chromic acid.     |
| 7. Potassium bichromate.      | 15. Picric acid.      |
| 8. Potassium chloroplatinite. | 16. Formalin.         |

The following give a precipitate with the solution of gelose:—

- |                     |                        |
|---------------------|------------------------|
| Basic lead acetate. | Phospho-tungstic acid. |
| Mercuric nitrate.   | Alcohol.               |
| Tannin.             |                        |

The reactions with many reagents are tabulated below, and from it can be learnt the chief differences between agar and other compounds.

Though the presence of small quantities of mineral acids the solution causes it to lose the gelatinising property, yet the solid substance soaked in water can be treated in the cold with dilute acids and alkalis without doing much harm. Hydrochloric and sulphuric acids, however, dissolve the agar: Payen says that it is dissolved by the concentrated acids, to form a hard brown mass which is insoluble in almost any ordinary reagent. We have found that it forms a brown solution, but we have not obtained the hard, insoluble mass. The solid agar can be boiled with glacial acetic acid without much change; but containing water it dissolves the agar on heating. The 1 per cent. solution used for soaking, will have no detrimental effect but will keep in solution all iron salts contained in the water and so tend to prevent discolorations. Agar soaked in 10 per cent. acetic acid, however, then washed, and dissolved, had lost considerably in viscosity.

The effect of alkalis on agar is to make the solution lose its setting properties, but at the same time it makes it a little more sticky and gummy. With a fresh solution of agar, if one puts one's finger into it the adherent drop soon separates from the main part of the solution; but when heated with a small quantity of alkali, the solution becomes somewhat more sticky and the drop does not immediately separate from the main part of the solution.

On adding borax to a solution this effect is greatly augmented.

THE CHIEF REACTIONS ARE SHOWN IN THE FOLLOWING TABLE:

Reagent.	Agar.	A line indicates no reaction.			
		Gelatine.	Proteids.	Peptones.	Albumen.
Millon's	—	pp. red on boiling.....	pp. red on boiling.....	pp. red on boiling ...	?
Biuret	—	—	Violet	Red, free from violet	Violet.
Adam Kiewitz (HA + H <sub>2</sub> SO <sub>4</sub> ) ...	Brown.....	Slight pink .....	—	Reddish brown .....	Pink.
Tannin	pp. ....	pp. ....	pp. ....	pp. ....	pp. ....
Xanthoproteic (HNO <sub>3</sub> ) .....	—	Given	Given	Given.....	pp. ....
Conc. HCL on solids .....	Brown.....	Slight yellow .....	Blue to violet, brown	Yellow pink.....	Slight pink
Phosphotungstic acid.....	ppt. ....	ppt.	—	—	—
Ortho-phosphoric .....	—	No ppt	—	—	—
Meta-phosphoric .....	ppt. ....	?	—	—	—
Picric acid .....	—	pp.	—	—	—
Glac. acetic .....	Insoluble	Soluble	—	—	—
Dil. nitric .....	—	—	—	—	—
Oxid. by nitric .....	Mucic .....	Oxalic	—	—	—
Fehlings.....	Reduces ...	No reduction	—	—	—
Alcohol .....	pp. ....	pp.	—	—	—
Copper sulphate .....	—	—	—	—	—
Mercuric nitrate .....	Slight pp.	pp.	—	—	—
Mercuric chloride .....	—	pp.	—	—	—
Basic lead acetate .....	pp. ....	Slight ppt.	—	—	—
Gold chloride.....	—	—	—	—	—
Platinum chloride .....	—	—	—	—	—
Chromic acid.....	—	pp.	—	—	—
Chlorine .....	—	pp.	—	—	—
Iodine .....	Colour red	Colour yellow brown	—	—	—

Alcohol will precipitate a solution of gelose, if added in sufficient quantity. A solution containing 1½ per cent. of the solid dried at 100 deg. C. (about 2 per cent. ordinary dry agar), is precipitated by adding about 40 per cent. of rectified alcohol; whereas it appears that, to a solution containing 2½ per cent. of the solid dried at 100 deg. C., even more than 40 per cent. may be added without definite precipitation. If a solution of agar be poured into excess of 90 per cent. alcohol a white precipitate is formed at once, which collects into a coagulum, which can be separated by muslin or filtered paper. Payen states that precipitation of agar by alcohol is not a good method, as it increases the percentage of ash, or solid matter. In our experiment, the ash before precipitating was .487 per cent., but after precipitation by alcohol it was 4.06 per cent.; though we think this is somewhat excessive. Certainly part of the agar is left in solution in the alcohol, because, on evaporating the alcoholic filtrate to dryness, a gummy mass was obtained. Is this part of much importance to the photographer? At present, we cannot say.

Like gelatine, when heated with acids or alkalis, the setting property is destroyed.

and the solution becomes so sticky (tacky) that one can draw out strings of the substance some feet in length. On rubbing between the finger and thumb it will be noticed that the untreated solution has more "body," but is much less "tacky." We are of the opinion that this property will be found of great use in the practical application. We have coated paper with such a solution quite readily. The solution treated with borax in this manner sets, though much more slowly than when not so treated. The resulting jelly is much less friable and seems to be more tenacious.

The reaction with iodine is peculiar. On adding iodine, either in potassium iodide or in alcohol, to a hot solution of gelose in water, the light yellow colour, due to the iodine, remains. On cooling, however, the yellow changes to a red purple, very much like that of iodine vapour. On heating, the purple changes to a yellow once more: the purple is developed again on cooling, and one can cool and warm repeatedly, with the same effects. There is not a perfectly sharp temperature at which this takes place, but it is between 27 deg. C. and 29 deg. C. This darkening and lightening can be detected when so dilute as 1 part in



10,000. On adding hydrogen peroxide to the mixture of gelose and iodine and warming, the red purple given when the solution is cooled changes to a blue similar to that given by iodine and starch. This disappears on warming, and reappears on cooling: but it is quite transient, and the exact conditions determining this blue colour, and its cause and meaning, have not yet been ascertained.

Agar will absorb a small quantity of iodine, and also of bromine, the amount being 1.65 per cent.; whereas gelatine absorbs 6.21 per cent., at 15 deg. C. This difference will be of interest in considering any theory of the latent image in agar as compared with that in gelatine. We may say that though one would suppose, on theoretical grounds, that on this account agar would be less suitable for emulsion work than gelatine. But it is not so. We find that its physical properties are not inferior to that of gelatine, and with scarcely any maturing one can prepare a comparatively fast emulsion. We shall show some lantern slides, made on plates with a speed of about 65 H. and D. Earlier it has been mentioned that a pellicle of agar will be about one-eighth as thick as a similar one of gelatine; so that the comparative ability to absorb iodine will be 6.2 per cent. for gelatine, and  $1.65 \div 8 = 0.2$  per cent. for agar: that is to say that, per area, gelatine will absorb about thirty-one times as much iodine as will agar.

Silver nitrate forms no precipitate with a solution of gelose, but on mixing a hot solution and keeping hot, darkening in colour takes place: this also occurs slowly at 50 deg. C., different samples varying considerably in the time necessary for the darkening to take place. But in any case, even boiling, it is not less than ten to twenty minutes, and may be quite a long time, so that one has sufficient time for making an emulsion. If a small quantity of hydrogen peroxide be added, no discoloration takes place at 50 deg.; but whether this is due to the oxidation of any aldehyde formed, to the acid, we cannot say at present. Citric acid also acts as a preventive of discoloration, but not so much so as hydrogen peroxide.

Silver-ammonio-nitrate gives no reduction at 50 deg., only on boiling. The solution of agar which has been boiled for some time gives but little more reduction than that which has been freshly made.

We find that our sample of agar does not form a peculiar compound with silver nitrate, similar to that produced with gelatine.

Fehling's solution is not reduced by a fresh solution of agar; but by boiling with acids (such as sulphuric acid) the gelose is hydrolysed to form a sugar which reduces Fehling's, and which gives a precipitate with phenyl hydrazine. This is being further studied, and the sugar is being identified.

The distillate of a solution of agar boiled with dilute sulphuric acid gives only a very slight colour with aniline acetate, so that no furfuraldehyde is formed, and there is no pentose group existing as such in the agar. It forms a very slight precipitate with phenyl hydrazine. The further study of these sugars and the products of hydrolysis are not of sufficient interest to the photographer to include here, but will be dealt with later. See Bauer ("J. Prakt. Chem." 30, 367) and Muntz ("Bull. Soc. Chem." 37, 409). It may be that agar is a glucoside, somewhat similar in constitution to fucose, a product also obtained from some varieties of sea-weed. Glucosides on boiling with dilute acids give one of the sugars as a product of hydrolysis.

Sodium meta-phosphate forms a gelatinous precipitate with a solution of agar, on boiling: gelatine gives no such precipitate.

Tannin gives a precipitate with a solution of gelose when it is strong, but it dissolves on heating: the precipitate formed by tannin and gelatine is given in very dilute solution and does not dissolve on boiling in the presence of excess of tannin.

Chromic acid seems to have no effect on agar, such as it has on gelatine: it does not form a precipitate nor does it render it insoluble in water as it does with gelatine. Similarly potassium bichromate does not make it insoluble: neither does alum nor

formalin. A mixture of agar and gelatine can be separated by adding formalin, evaporating to dryness, and extracting with hot water: the gelatine is insoluble, whereas the agar is dissolved. After being rendered insoluble in water, the gelatine may be dissolved in dilute acids and precipitated with tannin.

Gold chloride does not give a precipitate with agar or gelatine soluble; but platinum chloride gives a precipitate with gelatine, and not with agar.

It will be seen, therefore, that the difference between agar and gelatine is very marked. Agar gives no reactions with the colour tests for nitrogenous products; especially it gives no precipitate with picric acid, mercuric chloride, platinum chloride, chromic acid. Its reaction with iodine is distinctive, also that with hardening reagents.

### Curves

We have mentioned that many substances have a peculiar influence on agar in solution; it was also obvious that some chemicals had a greater effect than others; and we sought some method of ascertaining exactly what effect each of those we use would have on the solution. We considered that we should achieve our object by ascertaining the viscosity of the mixtures at varying intervals, since it is a property of great importance to the practical emulsion maker; so we adopted the method and apparatus of Ostwald. This is the one most used for such purposes, both in physical work and in technical determinations of such substances as gelatine, glues, etc., and we had every reason to suppose that it was the best instrument to use for our purpose.

We found, however, that there were several objections and difficulties. The solution of agar contains minute solid impurities, and we found that they were precipitated, and, by blocking the capillary, caused serious errors in the rates of flow. It is extremely difficult to be certain of the strength of the solution of gelose owing to the fact that, to get it into solution, the water must be boiled and kept boiling for some time, so that a considerable amount of water is evaporated off. At first we thought that it was necessary to use a 3 per cent. solution, which is very viscous, too much so for the experiments and the emulsion making: we adopted this strength because we did not know what viscosity the actual maker obtained with his gelatine emulsions. Mr. Gillard used a 3 per cent. solution of agar, and we concluded that this must be the best strength, so that we persevered with a 3 per cent. solution for a considerable time. Great care has to be taken not to get any part of the apparatus cooled when manipulating the agar, and adding the chemicals. These and other practical difficulties have shown us that the method is not well adapted to the object in view—at least, not without several modifications.

We have our results, and though we must admit that owing to the practical difficulties they are inaccurate, yet they are sufficiently accurate to be of interest, inasmuch as they give a fair estimate of the relative effect of the chemicals; as these relative effects are of extreme importance practically, we consider that it is worth while showing them. The whole, however, is being undertaken afresh, with a modified and different apparatus, using perfectly clear agar of a 1 per cent. concentration.

The viscometers used by us, are made with a wider capillary than usual, and standardised with phosphoric acid sp. gr. 1.5. In the most convenient ones, the time taken to run from the upper to the lower mark was about 60 seconds at 15 deg., or 24 seconds at 50 deg., that used for such chemicals as nitric acid took 383 seconds at 15 deg., and 113 seconds at 50 deg. In all experiments 3 grams of air-dried agar were dissolved in water, and made up to a final weight of 103 grams. We consider that this is much too concentrated, and that a 1 per cent. solution would be better.

The agar was soaked in running water overnight, dissolved in distilled water by boiling, boiled for a quarter of an hour, made up to the correct weight, strained, cooled to 50 deg. C., then

mixed with solutions of the chemicals heated to 50 deg. C., immediately placed in the viscometer and a reading taken.

Fig. 1.—These curves show the degelatinisation, at varying intervals of time: we must repeat that they are not accurate owing to the difficulties of the work; but they illustrate the effects produced in actual work and so are instructive.

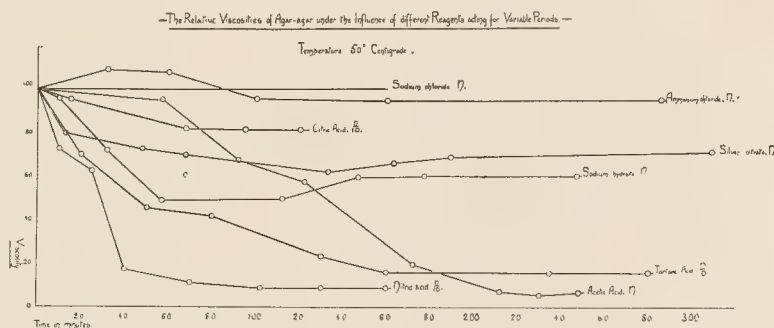
In the case of nitric acid, decinormal, it is seen that in ten minutes the solution is only 72 per cent. as viscous: after twenty minutes it is 64 per cent.: in sixty minutes it is 11 per cent. as viscous: if left longer it becomes only 8 per cent. as "thick" as at the commencement.

Tartaric acid, decinormal, causes the solution to become only

has not been determined, as the capillary of the viscometer became blocked up.

Fig. 2.—The next set of curves, taken more exactly, show the comparative effect of citric, tartaric, and nitric acids. The results are very similar to those shown in the previous diagram. Nitric acid has a great degelatinising power; tartaric acid is almost as potent. The effect of citric acid is very much less than that of either of the other two, and is never very great.

The practical application of these results can now be seen. In preparing emulsions such chemicals as free tartaric or nitric acid should be avoided; similarly, combinations of chemicals which react to produce free nitric or tartaric acid cause dege-



The curves, reading from top to bottom, are for N sodium chloride, N ammonium chloride, N/10 citric acid, N/10 tartaric acid, N/10 nitric acid, and N/10 acetic acid.

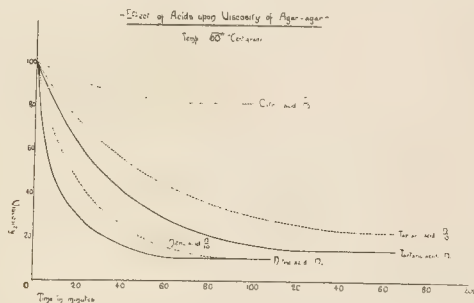
Fig. 1.

about 69 per cent. as thick, in twenty minutes: in time (about two hours) it will be 23 per cent. as viscous.

The curve for acetic acid, normal, is very erratic: probably the capillary became somewhat choked after sixty minutes. But it certainly has a considerable effect.

Citric acid, decinormal, has a small degelatinising effect, and even after one hour it reduces the viscosity to no more than 80 per cent.

The effect of silver nitrate, normal, is marked at first but after ten minutes there is not much alteration. The manner in which



The curves are those for N/10 citric acid, N/10 tartaric acid, and N/10 nitric acid.

Fig. 2.

the line rises after a lapse of time is curious. The same peculiarity occurs in the curve for sodium hydrate.

Sodium hydrate, normal, has a very considerable degelatinising power.

Sodium chloride has no effect whatever. Ammonium chloride, however, makes it more viscous, and in thirty-two minutes the solution has become 8 per cent. "thicker." It gradually becomes less viscous, and in about eighty minutes it returns to its initial viscosity.

The effect of borax has been mentioned already. The curve

latination. In such a reaction as that between silver nitrate and iodine in solution, wherever a grain of silver iodide is formed, there is a concentration of nitric acid round it; this causes local degelatinisation; hence the granular appearance of some of Mr. Gillard's emulsions; also it would cause coagulation of the silver haloid by destroying the colloidal nature of the medium. We found, in making emulsions, that this coagulation was a common accident, and we ascribe it to this cause. It should be mentioned that Rochelle salt, which Mr. Gillard

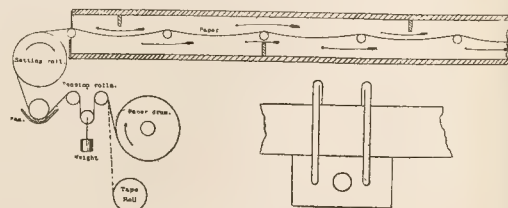


Fig. 3A.

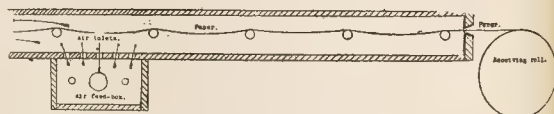


Fig. 3B.

frequently used, has an effect similar to tartaric acid in its power of degelatinisation.

Mr. Gillard, in mixing some of his chemicals with the solution of gelose, did not dissolve them, but added them solid. This would cause excessive local concentration, and must have been responsible for the peculiar "boiled rice" effect in his emulsions. We have repeatedly made emulsions to his formulae, quite successfully, but we dissolved the chemicals in water and added them gradually.



An acid is required in a P.O.P. emulsion to make the paper keep, and preserve the whites. It will be seen from the curves that, of those examined, citric acid has less degelatinising effects than others, and should be best adapted to that purpose. We have made many emulsions with it, and have found it quite suitable.

We are now in a position to discuss the failures of Mr. Gillard, mentioned previously, and to see how to avoid them.

1. The opacity was due to incorrect manipulation, and can be overcome by filtering the solution of gelose at a strength of about one and a half per cent.

2. The degelatinisation is due to the presence of certain chemicals in the emulsion, either added or formed by the reactions in emulsifying. The value of the curves will now be apparent. It has been shown that nitric acid, even in small quantities, has a very great degelatinising effect: that tartaric and acetic acids are also detrimental: that citric acid does affect the viscosity, but not to any material degree. Therefore, it is advisable to use citric acid in preference to others in order to make the paper keep.

It should be noted that if tartaric acid is required in an emulsion, then the emulsion should be made very much thicker at first, so that the tartaric acid may reduce the viscosity to the required degree.

3. The difficulty of solution causes no trouble except in washing emulsions. We are told that we cannot dissolve the emulsion after it has been set and washed; but we show a sample of bromide paper of about the same speed as "Nikko," also some lantern-slides, all made with emulsion which has been washed and set, then dissolved. There was scarcely any fog at all in these during development.

4. The setting of the emulsion is due to careless manipulation. In pouring from one vessel to another, the second vessel must be heated to about 40 deg. C. In coating, also, the same point must be noted.

The reduction of the gold chloride was due to using the salt which reduces the gold most easily. In P.O.P. emulsions there is excess of silver nitrate over the amount necessary to form the silver haloid, and this makes the reduction take place more easily. The notes on the reducibility of gold chloride should be of use here.

#### Apparatus for Drying Agar-Coated Paper.

Since agar, when once set, is insoluble in water unless heated to boiling, it seemed to us that the paper off the coating machine could be dried very quickly by means of hot air. An experimental apparatus was made on a small scale. A long tubular wooden tube of rectangular section was made (see Fig. 3). The total length was 55 feet; it was about 10 inches wide and about 3½ inches deep. Paper 8 inches wide was drawn through it. This paper was supported in the tube by glass rollers (made from glass tube) placed about one foot apart. The end into which the paper entered was open; the other end was closed by two pieces of wood covered with plush, pressed together. About 8 feet from the exit end a box was placed under the tube, and com-

munication was made between the box and the bottom of the tube by means of holes bored through. At the same time communication was made with the box and the top of the tube by means of glass tubes as shown in Fig. 3b. A large iron pipe leading from a blacksmith's bellows through a furnace opened into the box below the tube.

The iron pipe was heated to redness, and air was blown through it by means of the bellows. The wooden tube having been made air-tight, the only exit for the air was at the open end where the paper entered.

The solution was then put in the pan and the paper coated and drawn through the wooden tube as shown in Fig. 3 A and B. After running for a short time the paper on the receiving roll was quite dry, and by tearing open the box at a distance of 36 feet from the paper inlet-end it was seen that the paper was perfectly dry there; it may have been dry before it reached that point, but we could not ascertain this, as the tube was nailed up. The speed at which the paper was being drawn through this was ascertained by taking the time for a mark to run through the tube, and was found to be 4 feet per minute. A wooden shuttle 3 feet long was used to pull the commencement of the paper through the tube and to lead it over the rollers. Two strips of tape drawn through the apparatus under the paper served to support it and prevent it from breaking. Baffle plates were inserted in the tube to mix the air, and to keep it on to the upper and lower surfaces of the paper.

It will be noted that the hottest air met the driest part of the paper, so as to complete the desiccation, and that the paper was dried from both sides.

Rate of paper	...	...	...	4 feet per min.
Time taken to dry	...	...	...	11.5 per min.
Highest temperature	...	...	...	84° C. = 183° F.
Lowest	"	...	...	43° C. = 109° F.
Distance at which the paper was dried	...	...	...	36 feet.

From these figures it will be seen that the agar-coated paper can be dried quite readily in a short time.

In conclusion, it is hoped that though our work is necessarily incomplete, yet enough has been done both to form the basis of future study and also to assist the practical user in the chief of his difficulties. Agar-agar has certain advantages over gelatine, and we firmly believe that its use will be much more common in the future. Its cheapness is no inconsiderable item, the cost being less than gelatine, and only about one-eighth the amount being used. Its insolubility in water under a temperature of 80 deg.-90 deg. C. enables very hot water to be used in washing; at the same time, prints can be dried with extreme rapidity over a naked flame. Certain chemicals can be used in agar which cannot be added to gelatine, such as platinum chloride. The pellicle of agar is very much thinner than that of gelatine—about one-eighth the thickness—so that toning, washing, and other manipulations can be carried out much more quickly.

W. F. COOPER, B.A., F.C.S.

W. H. NUTTALL, F.I.C., F.C.S.

A MOTOR SKIRT and other wearing apparel was alleged to have been stolen from the house of Mr. John Hardy, photographer, of 190, Witham Road, Sheffield, by a domestic servant. The case came before the Sheffield magistrates last week.

**THEFT OF LENSES.**—At the Liverpool Sessions, last week, William Bernard, photographer, of 67, Railway Street, Southport, was sent to gaol for six months with hard labour for stealing two photographic lenses from the shop of Mr. T. J. Gidden. The evidence showed that the prisoner had been employed on various occasions by Mr. Gidden, and that some time afterwards he offered two lenses to Bernard McClusky, of Fisher Road, Birkdale, for £5. McClusky bought the

lenses for £2 2s., but afterwards gave information to the police. His suspicions, he told the Bench, became aroused when the prisoner asked him to buy other articles.

**LONGTON AND DISTRICT PHOTOGRAPHIC SOCIETY.**—The annual exhibition will be held from February 19 to 21, the closing date for entries being February 8. There will be five open classes, including one for colour photography, prints, or transparencies by any process. The awards will take the form of vases and other artistic and useful pottery productions. Mr. C. F. Inston, of Liverpool, will act as judge. Entry forms, which are now ready, may be obtained from Mr. T. Mottershead, 32, Stafford Street, Longton, Staffs.

## THE PYRO-SODA DEVELOPER.

[A paper read before the Société Havraise de Photographie.]

PYROGALLIC acid is one of the oldest developers, and has therefore suffered much at the hands of the formula makers. The many formulæ for its use, however, may be divided into two classes: 1, Pyro-ammonia; and 2, pyro-soda. Pyro-ammonia is, I think, that which gives the most brilliant and the better results, but it demands some skill, and, moreover, has the disadvantage of giving a peculiar dichroic fog, red or green, in those parts of very rapid plates which have not been sufficiently exposed to light. Personally I do not consider this a disadvantage in the strict sense of the word, but at the present time a perfectly clean negative is required, and pyro-ammonia does not always give this.

Pyro-soda, on the other hand, gives beautiful negatives, and it is of this alone that I intend to speak. I do not propose to consider all the formulæ that have been given, but to describe my method of working, and I can assure anyone who will exactly follow my advice that he will obtain perfect results.

Before all things it is essential that the chemicals used must be absolutely pure. I have given up the use of dry pyro measured out as required with a mustard-spoon in favour of a solution of definite strength. Pyro, when quite pure, is a perfectly white substance, very liable to alter on exposure to air. To keep it, it is essential to preserve it from contact with the air, even in a dark room.

I keep the following solution ready for use:—

### Solution A.—Pyro.

Pyro .....	5 gms.
Nitric acid .....	5 drops.
Boiled water .....	100 ccs.

The water is first boiled to expel the air which it always holds in solution. When it has cooled down 100 ccs. are measured out and 5 drops of pure nitric acid added, and then the pyro, which must be quite pure and white. Solution takes place instantly. If the mixture contains any particles of dirt I filter it through a compact plug of absorbent cotton wool, never through filter paper. Under these conditions the solution will keep white for several weeks. The stock of pyro in powder must be kept in a well-corked bottle, and it is advisable to cover the cork with paraffin wax; 5 ccs. of the stock solution contains exactly 0.25 g. of pyro.

### Solution B.—Carbonate.

Sodium carbonate crystal .....	20 gms.
Sodium sulphite crystal .....	20 gms.
Water, to make .....	100 ccs.

The carbonate of soda is merely the ordinary carbonate, known as soda crystals. The sulphite, on the other hand, ought to be as pure as possible and ought to contain neither sulphate nor carbonate. The method of purifying the sulphite, or at least of eliminating the carbonate, is as follows: it is sufficient to add a little acid sodium bisulphite lye, which in contact with carbonate forms sulphite of soda. In order to determine the quantity to add test paper of phenol-

phthalein may be used. This can be obtained commercially, but can be very easily prepared as follows:—

Solution phenolphthalein (comm.).....	1 part.
Water .....	5 parts.
Alcohol .....	5 parts.

White blotting paper should be immersed in this and dried. This test paper, which is quite white, turns a bright red in contact with alkalis and alkaline carbonates, and remains white with pure sulphite. Thus in order to confirm the purity of a solution of sulphite it is only necessary to wet a slip of the phenolphthalein paper; if it remains white the sulphite is free from carbonate. This, however, is rarely the case, and it usually turns red, proving the presence of carbonate of soda. The bisulphite lye should then be added till the paper does not turn red. A solution of sulphite will thus be obtained free from carbonate. To prepare Solution B, dissolve the sulphite in 50 ccs. of warm water and neutralise with bisulphite lye until the solution no longer reddens phenolphthalein paper. Add the carbonate and allow to dissolve, and then add sufficient water to make the total volume, when cold, 100 ccs.

Five ccs. of this solution will contain exactly 1 gm. of sodium carbonate and 1 gm. of sulphite. The result will be that every time one adds carbonate to the developer one also, adds an equal quantity of sulphite. This is very important from a practical point of view, for the more alkaline the developer the greater the tendency to oxidise and to stain. There is then a distinct advantage in increasing the sulphite, that is the preservative, in the same ratio as the carbonate is increased.

### Solution C.—Bromide.

Potassium bromide .....	10 gms.
Water to make .....	100 ccs.

These solutions having been made, here is my method of working. Whether I have to deal with an instantaneous or time-exposure I always treat the plate with a developer of constant composition as regards the pyro and carbonate, thus:—

Water .....	100 ccs.
Bromide solution C <sup>1</sup> .....	2-5 drops.
Pyro solution A .....	5 ccs.
Soda solution B .....	5 ccs.

This formula represents, I think, the "normal developer" for a plate which has received normal exposure. I pour this solution over the plate and watch the appearance of the image. According to the manner in which this takes place, I then determine—and not until then, what I have to do to obtain perfect development. According to the plate used, the temperature, etc., the image may appear with greater or less speed. Whatever may happen, I always wait until the image has appeared before modifying the composition of the bath. Here my advice must cease. What is to be done can only be acquired by practice. If the development is slow it is a sign of under-exposure. In this case add more carbonate, little by little, or 2 ccs. at a time. If development proceeds in a normal manner, allow the developer to act, and towards the end add carbonate, 1 cc. at a time, to give density. If the image appears very quickly it is a sign of over-exposure, add then 5 ccs. of pyro, or more if necessary.

H. REEB.

<sup>1</sup> The bromide is not absolutely essential: I do not use it for instantaneous work. It delays the appearance of the image and the general progress of development.

### A NOTE ON THE BACKGROUND.

THOUGH a background may be a troublesome and sometimes a dangerous companion to the figure subject, it is, nevertheless, capable of being made a most valuable ally; for though in general it should be negative and retiring in order to give due prominence and force to the subject, it often affords the photographer an opportunity of showing his originality by the introduction of striking transactions or ingenious allusions, as do many of the backgrounds of Teniers, Jan Steen, Ostade, and others of the Dutch and Flemish schools of painting. Writing on this subject in the "Journal of the Photographic Society of Philadelphia," Dr. John Bartlett says: "Besides, the background may be of great technical service in giving vigour to parts of the portrait subject by relieving the figure against it, or

softness and repose by losing in it unsightly but necessary features of the subject.

"The Italian painters of the fifteenth century, especially the Venetian school, sought to relieve their figures when dressed in dark clothing by backgrounds lighter in tone, thus giving them a distinct and, at the same, a natural appearance, the gradations in the background tones enveloping the figures in an atmosphere which made them stand out in relief.

"Reynolds considered the strong relief as less desirable than breadth and fullness of effect, and hence his figures supported the strong shadows by still stronger darks of the background. In consequence of this method, he frequently altered the relative tone of the picture, making a black coat, for instance, assume the appearance





## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents have been received between January 6 to 11:—

**CAMERAS.**—No. 338. Improvements in folding cameras. Arthur Lewis Adams, 24, Charing Cross Road, London.

**CINEMATOGRAPHY.**—No. 453. Improvements in and relating to cinematography in natural colours. William Norman Lascelles Davidson, 37, Chancery Lane, London.

**PHOTO-TELEGRAPHY.**—No. 464. Improved apparatus for wireless or transmission by wires of photographs and the like. Ferdinand Von Madaler, 61, Stanley Street, Battersea, London.

**ENLARGING.**—No. 471. Combined contact-printing and enlarging machine, specially suitable for use with bromide paper. Henry Spencer Hicken and Leopold Baun, 30, Queen Street, Portsmouth.

**CINEMATOPHONES.**—No. 562. Apparatus for moistening cinematographic bands or films. Eugène Louis Amédée Lertourné, Birkbeck Bank Chambers, Southampton Buildings, London.

**SHUTTERS.**—No. 563. Improvements in shutters for cinematographs. Eugène Louis Amédée Lertourné, Birkbeck Bank Chambers, Southampton Buildings, London.

**CAMERAS.**—No. 599. Improvements in photographic cameras and surveying instruments. Philip Waterhouse, 6, Bank Street, Manchester.

**PHOTO-TELEGRAPHY.**—No. 658. Improvements in and relating to pictorial telegraphy. The Amalgamated Radio-Telegraph Company, Limited, 7, Southampton Buildings, London.

**PLATE-HOLDERS.**—No. 723. Improvements in plate-holders. George Brown Hall, 53, Chancery Lane, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

**AGAR-AGAR PRINT-OUT PAPERS.**—No. 2,156, 1907. By the invention, the cost of the production of a photographic silver or other printing-out paper is very considerably reduced, and the trouble which is experienced by makers due to the varying qualities of the highly-finished baryta surface papers which they obtain for the manufacture of printing-out papers is likewise avoided. Moreover, more varied products may be obtained.

In carrying this invention into effect according to one manner, use is made of a plain paper, in the manufacture of which a sizing of a resinous nature has been employed. This paper is not provided with a baryta or other highly-finished coating. The sizing used in the paper may be ordinary neutral resin size or an acid resin size, such, for example, as the free resin sizing suggested by C. Beadle or Wurster. Upon this resin-sized non-coated paper is spread a liquid solution of agar-agar carrying the sensitive chemicals.

In some cases it is advisable to add borax or alcohol, or both combined. The effect of borax on the solution is peculiar, producing a tackiness or stickiness and a peculiar consistency which is of advantage in the operation of sizing or coating. Alcohol has the effect of causing the emulsion to spread better and to decrease the so-called "grease spots."

An important feature found with emulsions in agar-agar is that they set practically directly they are placed upon the paper. The rapidity of the setting may, however, be increased artificially, if desired, by lowering the temperature of the large setting roller, over which the paper is passed in the usual manner.

A further important feature is that the emulsions in agar-agar coated upon a resin-sized paper may be dried much more rapidly than can emulsions in other carrying media coated upon such papers as are at present generally in use. This is due mainly to two causes: Firstly, because a much higher drying temperature can be safely used with emulsions in agar-agar than with gelatine emulsions; secondly, because there is no baryta or other such impermeable layer between the emulsion and the paper.

These two important features of rapid setting and quick drying prevent the emulsions from sinking into the papers before it is dried so that they cannot affect the papers nor be affected by them because the emulsions are set and dried before they can get into the papers.

It is known that chemicals in a set colloid such as gelatine or agar-agar react chemically as if in true solution so long as it is in the "set" condition—i.e., contains moisture; when these colloids are dried the action ceases or is very much diminished. In ordinary work with baryta-coated papers it takes from three to four hours for the emulsion to dry, so that there is time for the chemicals to "wander" into the body of the paper and react with it. But, according to the above process, the drying takes only about half an hour or even less. A good surface is obtained and the printing-out paper produced possesses excellent and enhanced keeping qualities. No claim is made herein for the use, *per se*, of agar-agar as a sensitive medium or vehicle, nor for employment of a paper coated with a solution of resin or resinous gum for carrying a sensitive emulsion, but the two specific claims are:—

1. Manufacturing photographic paper by applying emulsions in agar-agar to non-coated papers sized with a resinous material, as described.

2. A photographic printing-out paper consisting of a non-coated paper sized with a resinous material and carrying an emulsion in agar-agar, as described. William Francis Cooper, The Cooper Research Laboratory, Watford.

**NON-SLIP TRIPOD SHOE.**—No. 1,787, 1907. The invention consists of a rubber shoe, A. The body part consists of a rubber tube of sufficient thickness to allow of its being easily stretched to fit tightly on the square or other shaped leg, B, or metal shoe without breaking. The open end is preferably formed with a rolled lip, *a*. The other or closed end is made of solid rubber, *a'*, preferably cone-shaped inside to receive the spike, *b*, at the end of the leg, and outside cigar or torpedo shape, and may be ribbed or serrated on the outside at C.

In use the shoe is merely pushed on to the end of the tripod leg, B (the roll, *a*, facilitating the operation), where it fits to the shape of the wood and metal work. When done with it may be

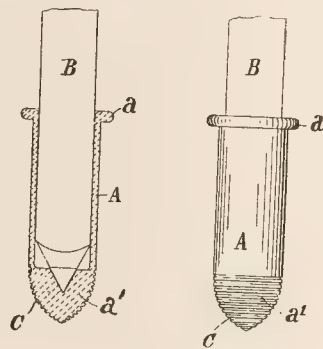


Fig. 1.

Fig. 2.

left in position or removed, at the will of the operator. The roll lip, *a*, again proves of service, as instead of the operator pulling at the end, and so running the risk of tearing the rubber when it is a tight fit, he merely rolls it back upon itself. Alfred William Stainton Sanderson, Mossburn Buildings, Altrincham.

**LANTERN-SLIDE STORAGE-BOX.**—No. 6,794, 1907. The object of the invention is to construct a lantern-slide storage-box in such a manner that when open it forms a holder for the slides both before and after displaying. A rectangular box of suitable dimensions to take the ordinary lantern slides, and of any convenient length, is divided in the direction of its length into two equal parts. The lower part might conveniently be called the storage-box, whilst the upper part represents the lid, which is secured to the storage-box by means of dowel pins. Both parts are similarly partitioned off to form compartments, and the lid, when taken off and inverted, forms a convenient receptacle to receive the slides as they are removed from the lantern.



When all the slides have been changed, it only remains to invert the storage-box and place it on the lid, turn the whole lot over, and the slides will be in their original order and ready for the next display.

In addition to the greater safety and convenience of the foregoing method, a distinct advantage is obtained by the slides projecting well above the storage-box when the lid is removed, thereby enabling them to be readily handled.

The interior surfaces of box on which the slides rest may be

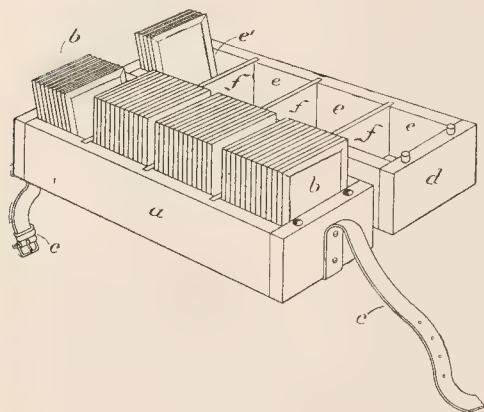


Fig. 1.

provided with felt pads to absorb any shock the box may be subjected to. The invention is applicable to grooved boxes.

Fig. 1 is a perspective view of the changing and storage-box, with the lid taken off and inverted. Fig 2 is a side view showing the manner of closing the box after the slides are changed.

The box, *a*, with its lid, *d*, is divided into compartments, *e*, by the partitions, *f*. After the slides are changed from the box, *a*,

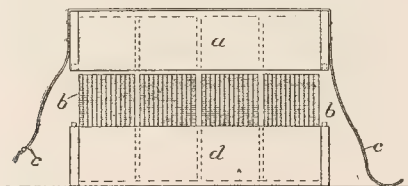


Fig. 2.

they are returned to the compartments, *e*, in the lid, *d*, as shown at *e*<sup>1</sup>.

When the whole of the slides are changed the lower part, *a*, is inverted and replaced, as shown in Fig. 2. The box is then turned over, bringing the lid uppermost, when the slides will be in the correct order for the next display. A carrying strap is shown at *c*, Figs. 1 and 2. Herbert Holmes, Tudor Works, Tudor Road, Hackney, and Houghtons Limited, 88 and 89, High Holborn, London, W.C.

**PHOTOGRAPHIC EMULSION.**—French patent No. 380,188, 1907. The invention consists in emulsions for pigment papers prepared from caseins, globulins, or acid albumins or alkali albumins, sensitised with ferric, ceric, or uranic salts, in addition to the pigment. They are stated to be far more stable when sensitised than the chromated gelatin or gum emulsions, and quite as rapid. After exposure behind a negative, the paper is developed by means of a solvent for the albuminoid—*e.g.*, ammonia, alkali, carbonate, or potassium oxalate solution. J. T. Gateau.

MR. HERBERT HOLT, of the Birmingham Photographic Company, Ltd., wishes to correct in advance any impression that he is the Mr. H. Holt who has joined Messrs. Griffin as process representative.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### The Ozobrome Process.

Writing on the subject of "Fogged and Flat Ozobrome Prints," in "The Amateur Photographer," the Rev. Henry W. Dick gives the following hints to workers in the process. His conclusions are the results of tests on the prints, for the reproductions of which our contemporary must be consulted. (1) While a little alum added to the normal bath will serve to give a softer result from a hard bromide print, an excess of alum will produce flatness and fog. (2) That citric acid in small quantities will greatly lift the shadows without proportionately lifting the high-lights. In other words, it gives flatness. (3) That ammonia in small quantities will restore a bath that is working flatly through acid. (Ammonia will do the same for a bath working flatly through excess of alum.) (4) Excess of ammonia will produce harsh prints even from flat bromides. (5) A degraded bromide print will probably reproduce its degradation with interest. (6) Alum left in the film of the bromide will give flatness in the ozobrome.

### Notes on Sulphide Toning.

When a solution of sodium sulphide oxidises in the air (writes Mr. R. Child Bayley in "Photography") it is said that the change is first to sodium disulphide and to sodium hydrate, and, second, that some of the sodium disulphide is further oxidised to hypo. (Similar changes take place with ammonium sulphide, though not so readily.) It will be seen, then, that it is quite possible that hypo has been formed and is present in the sulphide solution applied to the bleached print if the sulphide solution was weak and badly kept. If it is further diluted the hypo may have time to act on the bleached image before the weakened sulphide has made it unattackable, and so the resulting tone may be altered. But only in this case. A solution of one part of pure sodium sulphide in a hundred parts of water allowed hypo to the extent of one-fourth the weight of the sulphide itself to be added without any change appearing in the toned print, but when the hypo was increased to one-half the weight of the sulphide, the print was slightly reduced in strength and was yellowed. The lesson of this is, of course, not to use too weak a solution of sulphide, and to keep the stock solution strong.

### Retouching and Finishing Bromide Prints.

"My method for mixing the paint for use" (writes Mr. H. A. Eaton in "Focus") "is as follows, and to do it effectually it must be done by daylight, not artificial light: First obtain some water-colour paints—say, a black, a sepia, and two or three tones of brown for brown-toned bromides, and other colours accordingly—and a No. 2 camel-hair paint-brush; then in a small palette make, with a little water, a mixture of the colours required to give the exact tone of the bromide print. Next add water until the paint is fairly weak, and having at hand a solution of pure gum arabic and water, of which a little may be kept for this purpose, or even ordinary office gum will serve nearly as well, dip the brush a sufficient number of times into it, and mix with the paint until the paint is perceptibly thickened. I find the gum necessary, as otherwise with such weak solution of paint the colour settles to the bottom.

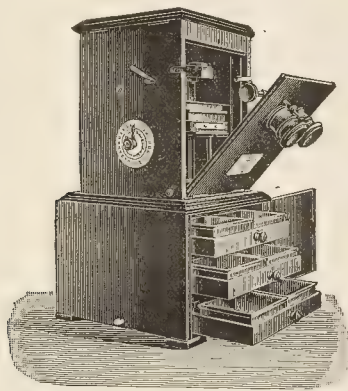
## New Apparatus, &c.

The Taxiphote Stereoscope (for Verascope transparencies). Made by Jules Richard, 25a, Albemarle Street, London, W.

A most ingenious and convenient reservoir stereoscope may be seen and purchased at the new London establishment of the famous maker of the Verascope camera in Albemarle Street, within a door or two of the Royal Institution. The Verascope camera, we may perhaps mention, takes a plate 10.7cm. by 4.5cm.—*i.e.*, about 4in. by 1½in., and gives a negative which is extraordinarily sharp, even when obtained as a snapshot, owing to the short focus of the anastigmats used and the mechanical perfection and accuracy of the

workmanship of the instrument. No less admirably adapted to its purpose is the box stereoscope which bears the name at the head of this review, for it provides for the observation of an unlimited number of stereoscopic transparencies without once touching them with the fingers, while it is provided with adjustments, whereby the lenses are suited to the eye of the observer and the pictures changed by him by one pressure on the lever at the side of the case. Moreover, the instrument can also be used in projecting the transparencies.

These facilities owe their existence to a mechanism whereby each transparency is picked out of a grooved tray holding twenty-five of them, raised into the position for viewing, and returned, when desired, to its groove. Not only this, but by setting a lever and pointer any given picture of the twenty-five can be brought into position. When all have been looked at, the tray containing them is withdrawn and replaced by another in a second or two. As the case below the stereoscope proper accommodates



twelve trays each of twenty-five subjects, the apparatus provides its possessor with a series of 300 views, any one of which can be instantly removed or replaced by another.

In using the Taxiphot for projection, the ground glass which backs the transparency is removed, and any convenient source of even illumination—e.g., a condenser with arc light or limelight brought up behind the transparency—one of the viewing lenses then serving for projection. The conversion from viewing instrument to projection lantern does not call for any structural alterations to the apparatus, and the same remark applies to the use of the Taxiphot for enlarging from a Verascope negative. The price of the complete instrument is £10 12s. 6d.

Messrs. Richard will be happy to show the visitor to their elegant salon in Albemarle Street these uses of the Taxiphot and the accessory apparatus, projection lantern, and screen, which are supplied specially for use with it. Occasion should also be taken to examine at the same time some Autochrome transparencies made in the Verascope, which come very well through the ordeal of viewing with the magnifying stereoscope.

## New Materials.

Leto Vellum (Semi-matt) Bromide Paper. Made by the Leto Photo-Materials Company, Limited, 3, Rangoon Street, London, E.C.

In adding another variety of bromide paper to those sold under the trade mark of "Leto," the makers have chosen a surface which is largely in vogue just now on account of the partial sheen in the finished prints and of the generally rich effect obtained. The Leto "Vellum" is a paper which is excellent in these respects, and is equally satisfactory in its behaviour during development, giving prints of good black tone and all necessary brilliancy and purity of whites. The paper is obtainable at the standard prices and in the sizes specified in the Leto Company's recently issued new list.

## CATALOGUES AND TRADE NOTICES.

MESSRS. HARRINGTON BROS., LTD., of 4, Oliver's Yard, 53, City Road, London E.C., have issued a revised edition of their price-list of chemicals, which should prove both useful and interesting to those who use any description of chemicals either in large or small quantities. The firm also issue a special list of photographic chemicals, copies of which, as well as the general list, may be obtained free on application to the above address.

RAJAR (1907), LTD., have issued a new list of the Rajar photographic specialties in plates, papers, and chemical preparations. The list will be sent, post free, to any address on application.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

FRIDAY, JANUARY 24.

Sutton Photographic Club. "Choice and Use of a Printing Process." Hector Maclean.  
West London Photographic Society. "The Camera at Home." E. T. Holding.  
Rotherham Photographic Society. *Amateur Photographers' Prize Slides*.  
Cardiff Photographic Society. "A Mixed Bag." A. McKinnon.

MONDAY, JANUARY 27.

Bradford Photographic Society. "Bird Life in Yorkshire." Riley Fortune, F.Z.S.  
Scarborough and District Photographic Society. "Volcanoes of Central America." Dr. Tempest Anderson.  
Catford and Forest Hill Photographic Society. "Making Transparencies." H. P. C. Harpur.  
Southampton Camera Club. "Some Spanish Scenes and People, and a Bull Fight." Arthur Marshall, A.R.I.B.A.  
Cleveland Camera Club. "Flower Photography." E. Seymour.  
Derby Photographic Society. "Orthochromatic Photography." T. A. Scotton.  
South Manchester Photographic Society. "Time Development." W. F. Slater.  
Muirkirk Amateur Photographic Association. Rotary Carbograph Paper.

TUESDAY, JANUARY 28.

Royal Photographic Society. "Suggestions on the Multiple Mounting of Photographic Pictures, with Examples." F. H. Evans.  
Nottingham Camera Club. "Switzerland: Glimpses of its Mountains." J. B. Wigfull.  
Jarrow Mechanics' Institute Camera Club. Photographic Chemicals.  
Manchester Amateur Photographic Society. Annual Meeting.  
Worthing Camera Club. "Theory and Practice of Enlarging." Edmund F. H. Crouch. "Lantern Slides by Reduction." Theodore Roberts.  
Keighley and District Photographic Association. "Brittany: Its Big Stones and its Queer People." Percy Lund.  
Rodley, Farsley and Calverley District Photographic Society. Conversations and Exhibition of Members' Work at Farsley Liberal Club.  
Leeds Photographic Society. "Some Avon Villages." Harold Baker.  
Hanley Photographic Society. "Competition Pictures, Lantern Slides, &c."  
Monklands Photographic Society. Rotary Carbograph Paper.

WEDNESDAY, JANUARY 29.

South Suburban Photographic Society. "X-Ray Photography." Demonstrated. T. Thorne Baker.  
Borough Polytechnic Photographic Society. "Our Commons and Open Spaces, their History and Preservation." I. W. Chubb.  
Coventry Photographic Club. "The Oil Pigment Process." J. Cawthood.  
Woodford Photographic Society. Auction Sale.  
Leeds Camera Club. "Walks and Climbs in Switzerland." Percy Lund.  
Edinburgh Photographic Society. "Printing Processes." Geo. M. Aikman.  
Central Technical College Photographic Society. "Demonstration and Examples of Cinematography." N. M. Clougher.  
Mill Camera Club. Debate. W. Richardson and L. Fearnley.  
Dennistown Amateur Photographic Association. Rotary Carbograph Paper.

THURSDAY, JANUARY 30.

London and Provincial Photographic Association. "Ozobrome." Thomas Manly.  
Handsworth Photographic Society. "Printing on 'Japine' Platinotype." A. E. Cope.  
Blenheim Club. "A Talk about the Cinematograph."  
Liverpool Amateur Photographic Association. "Criticism of the Annual Exhibition of Members' Work." Fred. V. Burridge, R.E.  
Bath Photographic Society. Practical Evening.  
L.C.C. School of Photo-Engraving and Lithography. "The Illustration of Books Historically Considered." R. A. Peddie.  
Richmond Camera Club. "A Summer Holiday in the Bernese Oberland." Dr. Rodman.  
Swadlincote and District Photographic Society. "Photographic Chemicals."  
Greenock Camera Club. Rotary Carbograph Paper.

### ROYAL PHOTOGRAPHIC SOCIETY.

MEETING held Tuesday, January 21, Mr. Leslie E. Clift in the chair. A lecture on "Westminster Abbey" was delivered by Mr. S. G. Kimber in his usual attractive and interesting style. The lecture was illustrated by a number of excellent lantern slides, showing Mr. Kimber's pictorial work in architectural photography to great advantage. A large audience testified its admiration of the many beautiful effects in lighting by frequent applause.



# THE PROFESSIONAL PHOTOGRAPHERS' ASSOCIATION.

A MEMBERS' meeting was held at the Royal Photographic Society on Friday, January 10, Mr. H. C. Spink, President, in the chair.

Mr. H. J. Comley, of Stroud, hon. secretary of the Society of Colour Photographers, delivered a lecture on "Colour Photography from a Professional Point of View," in which the question was treated, not only from a strictly commercial point of view, but the technical and general aspects were fully considered, and the necessity for special training for assistants, particularly for the printer, referred to. The lecture was followed by a demonstration, and two sets of trichromatic prints, a portrait and a still life study, made on Rotary stripping films, were developed and placed together, the method of transferring the prints to paper being fully described and shown.

**LEEDS PHOTOGRAPHIC SOCIETY.**—At the annual general meeting, held on January 14, the usual election of officers took place. With two exceptions there was no change. Mr. T. W. Thornton was re-elected president, and Mr. Robert Mackay, 69, Albion Street, Leeds, was elected secretary, in the place of Mr. J. Fielding. At the close of the business a fine selection of lantern slides was exhibited by Mr. Godfrey Bingley, who received a hearty vote of thanks at the conclusion.

**SOUTH SUBURBAN PHOTOGRAPHIC SOCIETY.**—Demonstrating ozobrome on Wednesday evening, Mr. Thomas Manly, the inventor of the process, emphasised the necessity of observing the prescribed time, temperature, and manipulation in carrying out the various operations. He gave the pigment plaster half a minute preliminary soaking in plain water, cleaning the surface under water with a soft Turkey sponge. Then he gave it two minutes in the pigmenting solution, face up as before, again sponging it gently before re-washing to remove the superfluous pigment. It was necessary also, he said, to see that the plaster was wider all round than the bromide print to be treated. In bringing print and plaster into contact the print was floated face up below the surface of the water. Then the pigment plaster, face down and slightly bent, was brought into contact with the water, at the upper end (farthest from the operator), and gradually and gently lowered with a sliding motion to avoid air-bells. The two were not pressed together. They were nipped between forefinger and thumb at the further edge, and quickly raised together by that edge, and allowed to drain before being gently squeezed into contact with a flat squeegee on a piece of plate glass. They were left in contact fifteen to twenty minutes before developing. Canon Barnes-Lawrence (chairman) and Rev. R. J. Swinnerton (timekeeper) were keenly interested, and asked numerous questions as to details.

## Commercial & Legal Intelligence.

**CLAIM FOR A PHOTOGRAPH.**—At the Dartford County Court last week, James Berry, a silk printer, of Mount Pleasant Road, Dartford, claimed of Messrs. A. and G. Taylor, photographers, of Victoria Street and Regent Street, London, £1 for the return of a photograph or its value, and 30s. for money paid.

Plaintiff's case was that he gave an order to an agent of defendants for an enlargement of a photograph, and had paid 30s. by instalments to the agent. The photograph was at the time in the possession of a similar firm, and Messrs. Taylor's agent informed plaintiff that, with his authority, he (the agent) could obtain possession of it. The authority was given and the photograph obtained; but now plaintiff was informed that it had been lost. The defendants wrote that they were informed by their agent in question (Mr. Hewitt) that he had obtained the portrait, "but we have never received it." The result was that plaintiff had now neither the photograph (that of a child of his who had died) nor the money.

Defendants' manager said his firm did not dispute the claim for the return of the money; but they contended that the original photograph was never in the possession of them or their agent.

His Honour: How can you say it was never in your possession when you wrote that you were informed Hewitt had obtained the photograph from a firm in Newington Causeway?

The Manager: That was his statement.

His Honour: He was your agent.

Judgment for the amount claimed, with costs.

**DAYLIGHT DEVELOPMENT.**—On January 16 Mr. Justice Barker had before him the action of the Standard Patents Co., Ltd., v. Kodak, Ltd., by which the plaintiffs claimed an injunction in respect of an alleged infringement by the defendants of their patent for an invention for the development of photographic films.

Mr. Buckmaster, K.C., and Mr. Macklin appeared for the plaintiffs, and Mr. Walter, K.C., and Mr. Kerley for the defendants.

In opening the case Mr. Buckmaster said that both the plaintiffs and defendants were limited companies. The defence to the action was the common one. The defendants denied infringement, denied that the letters patent were good, and set up a series of alleged anticipations, a very large number of which he did not suppose the defendants would deal with at the hearing. Counsel went on to explain that, in photography, when the image had been taken through the camera, three processes had to be followed. The negative had to be developed, washed, and then fixed. The way that was done for many years was to place the plate or film in an open trough in a dark room illuminated only by a red or yellow light. There were several objections to the open trough, amongst which were the difficulty of manipulating the films in the light, the trouble and nuisance of consistent observation, and the risk of the negative being spoilt by dust or air bubbles. The invention in respect of which the plaintiffs claimed was an invention which, they said, for the first time enabled the development to take place without the necessity of observation or manipulation or the protection of a dark room with a red or yellow light. The plaintiffs had, in fact, invented a process by which development could take place in the daylight, and no superintendence was required. The defendants had an old machine for developing, which was brought out in 1902, but the plaintiffs contended that it was nothing like their invention, and their case was that the defendants had now deliberately infringed their patent, and in order to protect themselves had, in 1905, patented what was really the plaintiffs' invention. Expert evidence having been called in support of the plaintiffs' case, Mr. Buckmaster said that after consultation with his junior and his client, he had come to the conclusion that, on the narrow construction put upon the patent by the experts, he could not argue that the defendants had infringed. He, therefore, consented to having the action dismissed, with costs. His lordship made an order accordingly, and upon the application of defendants' counsel, certified that the objections taken to the patent that were dealt with were reasonable.

**BRITISH MUTOSCOPE AND BIOGRAPH COMPANY.**—At the London Bankruptcy Court on Tuesday a meeting of the creditors of the British Mutoscope and Biograph Company, Ltd., took place. The winding-up order was made on November 19. The Official Receiver stated that there were 145 unsecured creditors, whose claims amounted to £21,308. Loans on debentures amounted to £32,060. The assets were returned at £30,000, including investments and shares, £19,500. There were not quite enough assets to satisfy the claims of the debenture holders, so that there would be nothing available for distribution amongst the unsecured creditors or shareholders. The total deficiency was returned at £274,705. The company was registered on January 23, 1899, with a capital of £300,000, to acquire the assets of the Mutoscope and Biograph Syndicate, Ltd. The syndicate had previously formed ten subsidiary companies for the purpose of carrying on similar businesses in different parts of the country. Each of the companies entered into an agreement to hire machines from the syndicate. The Mutoscope Company paid £240,000 in cash for the assets of the syndicate. The company was for a time very successful. For the year ending February 28, 1900, the profit was £28,451; in 1901, £11,822; and in 1902, £839. Since then there had been continuous losses. The failure of the company was attributed to the public interest in a novelty having declined. Mr. Smedley, the late chairman of the company, admitted also that there might have been some mismanagement. In November, 1907, arrangements were made with the debenture holders that, in consideration of being paid in full, they should purchase debentures in a new company, the Bio-Trust, Ltd. The result was that there was nothing to liquidate, as all the assets had been sold to the new company. The meeting decided not to apply to the Court for the appointment of a liquidator, but to leave the winding up of the company in the hands of the Official Receiver.

**"FREE PORTRAITS" IN THE COUNTY COURT.**—At the Pocklington, Yorks, County Court on January 18, the King Edward Fine Art

Enlarging Co., of 65, Louis Street, Chapeltown, Leeds, sued E. Judson for £1 2s. 6d. for a photographic enlargement, and a similar claim was made against — Simpson for 12s. 6d. Mr. Summerson appeared for the plaintiffs, and asked for an adjournment on the ground of the illness of a witness. Mr. Powell, for the defendants, opposed the application unless the costs of the day were at once paid into court. The plaintiffs' solicitor having declined to do this, Sir Horace refused the adjournment, and as defendants and their witnesses were present, and the plaintiffs' solicitor was unable to prove his case, his Honour gave a verdict for defendants in each case with costs. In the course of the case his Honour asked the plaintiff's solicitor if he had been paid his fee, and on his replying in the affirmative, significantly remarked that he was lucky.

The facts of the case against E. Judson, which he was prepared to prove in court, are as follows:—The wife of the defendant was called upon by a woman canvasser, who represented that an enlargement would be made, as an advertisement, absolutely free of charge, but if she liked a frame it could be supplied much under the usual price. Mrs. Judson agreed to accept the enlargement, but said she could not afford a frame. She was advised not to tell her husband anything about the matter. In course a man brought the enlargement already framed, and persuaded Mrs. Judson to pay 2s. 6d., but no agreement was made for any further payments, and on the matter coming to the husband's ears and his repudiating liability, the summons was issued.

**WAITING FIVE YEARS FOR A PHOTOGRAPH.**—The story of how a Newhall labourer waited for five years for his photograph to be taken was brought to the notice of Judge the Hon. Walter Lindley at the Burton County Court, sitting on January 16, when a man named Plummer and his wife, of Newhall, sought to recover from Messrs. Taylor and Co., photographers, of Derby and London, the sum of 32s., the amount paid in anticipation of their having their photographs taken.

From the evidence it appeared that the contract entered into by Plummer, his wife, and the firm's representative was that by paying the sum of 35s. in instalments they were to have their photograph taken and have one large copy on china and six cabinet size. The arrangement was made in September, 1902, and although they had paid 32s., no one had ever come to take their photograph, and when they went to Derby for a sitting they were told that the firm had left the town and gone to London. They never heard anything further, and although they wrote to London no reply was ever received.

Mr. Leicester, the firm's representative who defended the action, said a photographer called on the people, but they would not have their photographs taken then because Mrs. Plummer was ill. They could have their photographs taken now if they wished.

The Judge: It is very likely that they won't want to do that. This contract was drawn up five years ago, and although the photographs might have been required then, it does not follow that they are wanted now.

Mrs. Plummer said the photographs were not required now. They preferred their money back.

His Honour said that he had come to the conclusion that the defendants had not fulfilled their part of the agreement, and he ordered that the 32s. be refunded, with costs.

## News and Notes.

**AN "OIL" EXHIBITION.**—An exhibition of photographs by the oil process will be opened at the Liverpool Amateur Photographic Association's rooms, 9, Eberle Street, on February 6. There will be no charge for admission, and the exhibition will remain open till February 22.

**LIVERPOOL AMATEUR PHOTOGRAPHIC ASSOCIATION.**—That this northern photographic club continues to occupy the high position it has so long maintained amongst photographic societies is evidenced both by its annual report and by the excellence of the photographs now on view at its exhibition of members' work, which will remain open at the society's rooms, 9, Eberle Street, until February 5. At the annual meeting held last week the reports of both secretary and treasurer showed a continuance of progress and prosperity, and in

the course of a short address the chairman, Mr. F. Gregory Jones, complimented all concerned in the management of the association on the satisfactory result of the past year's work. The officers elected for the ensuing year are: Mr. F. Gregory Jones, president; Mr. J. Dudley Johnston and Colonel A. Grimshaw Haywood, vice-presidents; Mr. Charles F. Inston, F.R.P.S., hon. secretary; Mr. Wm. Lockier, hon. treasurer; and Mr. W. A. Taylor, hon. librarian. Dr. John Ellis and Messrs. J. W. Towers, T. E. C. Wilson, Harry Holt, W. B. Hellon, Lawrence Rea, and Charles F. Stuart were elected on the council.

**PORTSMOUTH CAMERA CLUB.**—This club, which is the outcome of a thorough reorganisation of the old and well-known Southsea Photographic Society, has just got its new officers into harness. With a now popular subscription of 7s. 6d., instead of the former exclusive guinea, a newly decorated suite of rooms, and a staunch executive, who intend to leave no stone unturned which will make for success, things photographic in our premier naval port should give evidence of an abounding vitality which has of late been wanting. The following gentlemen compose the new body of officials:—President, Colonel Johnstone, C.B.; vice-president, Mr. W. H. Barrell; hon. treasurer, Mr. J. Cromwell Prior; hon. secretary, Mr. F. J. Lawton, 20, Clarence Square, Gosport; assistant hon. sec., Mr. W. H. Dugan; committee, Messrs. A. B. Casey, S. Dawe, and J. C. Thompson. The recent exhibition has fortunately proved a financial, as well as an undoubted artistic, success.

**THE SCOTTISH PHOTOGRAPHIC SALON.**—Since the issue of the prospectus a month or two ago, the local committee have been busy, and arrangements are now well advanced for the opening of the exhibition in the Art Gallery in the middle of February. By that time the committee expect to have on the walls a large and representative collection of Scottish work. In addition to the main body of exhibits, there are sections for work sent in by special invitation of the committee, and the selected specimens of English work which have been promised by Mr. J. C. S. Mummery, president of the Royal Photographic Society, will doubtless add much to the value and interest of the exhibition. A more technical aspect will be presented by a series of illustrations of the recent progress of colour photography, the exhibits in this section being sent by Mr. Henry J. Comley, secretary of the Society of Colour Photographers. Another feature of special interest will be a natural history exhibit, arranged by Mr. H. Armytage Sanders, F.R.P.S., which will include works by the leading field naturalists, who, by the aid of the camera, have done so much during the past few years to make natural history popular.

**DISSOLUTION OF PARTNERSHIP.**—The partnership between Louis Smith and Percy John Swain, photographers, carrying on business at 2A, Davey Place, and Burlington Buildings, Orford Place, Norwich, as "Louis Smith and Co.," has been dissolved by mutual consent.

**COLOUR WORK IN LEEDS.**—Mr. Henry J. Comley will lecture to students of the photo laboratory, Leeds Central Technical Schools, on "Colour Photography," and give a practical demonstration of tri-colour carbon on Friday, February 7, 1908, at 7 p.m. in the Chemical Lecture Theatre. Friends desirous of being present should communicate with Mr. S. E. Bottomley, F.R.P.S., Central Technical Schools, Leeds, as accommodation is limited.

**BARGAINS IN BACKGROUNDS.**—Messrs. O. Sichel and Co. announce that a post-stocktaking sale of high-class American and other backgrounds enables them to offer a number of these accessories at very moderate prices. The grounds can be seen at 52, Bunhill Row, E.C.

**FIRE IN BELFAST STUDIO.**—A slight outbreak of fire occurred on the premises occupied by Messrs. Frost and Kelly and others, photographers, 3, High Street, shortly after eight o'clock on January 17. The damage to the room on the top storey, to which the fire was confined, was slight.

**EXIT THE "PHOTO-AMERICAN."**—Regret can scarcely be expressed at the news of the demise of our contemporary, the "Photo-American," which, since the death of its former editor and proprietor, Mr. Ed. Newcomb, has been conducted by his widow on the same comfortable plan which for years past has filled its pages with articles "lifted" without acknowledgment from the British periodicals. A publication of this type can easily be spared.



## Correspondence.

We do not undertake responsibility for the opinions expressed by our correspondents.

Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

### A TELEPHOTO CALCULATOR.

To the Editors.

Gentlemen,—In this day's Journal I see my letter on a Telephoto Calculator, and wish to point out a mistake, as other correspondents are sure to do so if I don't.

The equation (as given in the proof you sent me) is  $x = \frac{y}{a} + 1$ , which

correctly that of a straight line; while the equation as given  $y = \frac{a}{x} + 1$ , is not that of a straight line but of a hyperbola,

terms  $a$  and  $y$  having been inverted. I suppose those who read your letter will themselves correct what is merely a printer's error. It may prove useful to others as it has done for myself.—

Main, yours faithfully,  
D. Hungerford Road, Crewe.  
January 17, 1908.

A. THOMAS.

## Answers to Correspondents.

All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.

Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.

Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., 24, Wellington Street, Strand, London, W.C.

For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.

### PHOTOGRAPHS REGISTERED:—

Waine, Bushy Cottage, Park Road, Teddington. Three Photographs of the *Leam and Office-builders*, St. Alban's Church, Teddington.  
Hughes, Cerrigydruidion, Corwen, North Wales. Photograph of Colonel C. S. *Wainwright*.  
Glanville, 1, Sutton Road, Southend-on-Sea. Two Photographs of the Rev. *Wm. Butterworth*.  
Perkoff, 136, Commercial Road, London, E. Two Photographs of *Efrem Ambalst*, the famous Russian violinist.

### DRAWING REGISTERED:—

Wilmington, 1, Aigburth Hall Road, Aigburth, Liverpool. Drawing of *Old Cottage*, "Frog Hall," Grassendale, Liverpool.

QUESTIONS IN U.S.A.—(1) Would you please inform me the average rate per week of operators' and assistants' pay in Canada and the United States? (2) Is business in a better condition than in England? (3) What would be the best way to get a situation there, by advertising, what journal, also their charge for advertisements?—EMIGRANT.

(1) It varies as much as it does here. (2) We believe business more satisfactory in Canada at present, but somewhat unsettled in the States. (3) You had best try the "Bulletin of Photography," 98, Sansom Street, Philadelphia.

FORMULA.—Many thanks for reply in this week's "B.J." re mean developer on page 43 "B.J." for January 18, 1907. You gave me the pyro-soda one, but it is the metol hydroquinone for gas-

light and bromide I want, on page 44 of above date's issue, the last one on page 44. Please give it in British measures for a convenient quantity, and say what proportion of water goes with the solids in above lists, as I am not quite clear about it, water being omitted in that list.—THISTLE.

As stated in the earlier part of the article, the figures are "parts per thousand parts of water," and if halved are, roughly, "grains per ounce of water." A more exact translation of the last formula is:—

Metol .....	25 grs.
Hydroquinone .....	45 grs.
Sodium sulphite .....	1 oz.
Sodium carbonate .....	500 grs.
Potass bromide .....	6 grs.
Water .....	20 ozs.

PINATYPE.—Could you kindly inform me where I can obtain the materials, etc., for working the pinatype colour process?—AN OLD READER.

Fuerst Bros. See our advertisement pages.

R. W.—There are several advertisers of these articles in our outer pages. Try Griffith's Steam Works, 26-31, Eyre Street Hill, Hatton Garden, E.C.

REFLECTOR.—Will you please suggest a reflector for portraiture in a sitting-room? Also what is the best reflecting medium?—REFLECTOR.

A very suitable reflector is a light wooden frame, 5 or 6 ft. by 4ft. or 5ft., on which is strained a piece of white or pale blue calico. But almost any light thing will do. A tablecloth, or sheet, on a clothes-horse is very frequently used, and is about as good as anything.

PROSPECT.—The articles to which you refer appeared in our issues for March 15, 22, and 29, 1907.

R. E.—No. 2,304, 1903, in the name of F. Kollmorgen.

SULPHIDE-URANIUM TONING.—I find for some subjects very effective tones can be attained by placing a sulphide-toned bromide into a uranium toning-bath. By this process the whites stain to an effective brownish colour. The shadows darken and richen up so that when waxed a superbly rich print results. Are prints thus treated likely to be very liable to fade when framed?—S. E.

We have no experience of such prints, but we cannot suppose that they are more satisfactory as regards permanence than those toned only with uranium—probably they are less satisfactory—that is to say, they are liable to "go off" or darken in a time which may be a year or two or only a few months.

PROGRESS.—We are unable to give you particulars of the secret process, nor do we know the present whereabouts of the inventor. Messrs. Raines and Co. might be able to tell you.

PHIKAPPA.—Both lenses are of high quality. It would be misleading to draw comparisons between them.

FIXED FOCUS.—I should be glad if you would give me your advice on the following point: I have two fixed-focus hand-cameras, the lenses of which I am desirous of obtaining the exact range of focus. The makers of the cameras are unknown to me, and the dealer.—A. O. PULFORD

In each case measure the focal length of the lens and divide by the diameter of the diaphragm aperture. From these two factors, focal length and working aperture, you can ascertain the distance of the nearest sharp object from a table such as that on page 960 of the present "Almanac."

P. O.—The article appeared in our issue of November 22, 1907.

THREE-COLOUR CARBON.—1. As I am wishing to work this process commercially, I would like to know first: (1) Whether there are any patents or restrictions in connection with working same, as I noticed not long ago in the "B.J." some person had patented a method of using the above process by stripping from collodionised glass plates. (2) Is there any restriction against working any of the existing colour-processes of to-day?—W. W. W.

There are none. Any rights are invested in the manufacture of the materials, and are conceded on the purchase of the latter.

RETOUCHING (Reply to C. E. S.).—The retouching shown on your specimens is carefully done, but very insufficient, and miles away

from the best-grade work; but there is no reason why you should not attain high quality skill in the art. Better take a few lessons from an expert teacher. Retouchers who are not also professed and experienced teachers may advance you to a certain stage, but you are more likely to benefit from experienced tuition such as you can find announced in our advertising pages.

**MARKING MOUNTS.**—Will you kindly give the name of a really good die cutter? We had one made—to use as a punch—with our name, but it is so poor that a heavy blow is necessary to make an impression on mounts, and only a faint mark then.—**LIMERICK.**  
Messrs. Houghtons supply dies for impressing photographic mounts. You will find the names and addresses of die cutters in the "Post Office Directory." Whatever die you have will require a somewhat heavy blow, if the mount is hard and thick, to obtain a deep impression. The best way of using a die is in the usual lever die press, and not with a hammer.

**THOS. F. FAIRFIELD, SAM JONES, and others.**—In our next.

**WOOD STAIN.**—I should be much obliged if you would give me a recipe or formula for a staining mixture to darken oak frames, so as to make them harmonise with sepia brom. enlargements. I do not want anything in the nature of varnish, but I believe there is a mixture of bichromate of potash and something else. If you can help me in this matter I shall be much obliged.—**PHILIP S. HEDYSLANT.**

The formula you inquire for is probably one such as:—Bichromate of potash 1 oz.; water, 20 oz. Another is:—Bichromate of potash, 1 oz.; Vandyke brown, 4 oz.; liquor ammonia, 20 oz. Either of these give a good brown stain on oak. We should recommend you to try both, and see which gives the colour you like best.

**RIGHT TO SELL.**—I am in the habit of going to the villages around here and taking a set of views and houses of interest for photographic postcards. These I supply to one shopkeeper in the said village to sell again for me, reserving, of course, to myself the right to sell separately if I wish, or get an order. The other day, when taking a set of a certain village, I photographed an old farmhouse, and to give life to the photograph I got the son and daughter to stand outside. They afterwards purchased direct from me twenty-one of the postcards at the shop-selling price, viz., 2d. each, and also three half-plate copies at the same shop-selling price, viz., 1s. each. After supplying them with these, I let the shopkeeper have six postcards of the said farmhouse to sell again, in with his batch of postcard views of the village. I have now this morning received a letter from the farmer's daughter saying that she finds the postcard views of their place are being offered for public sale in the village. She is very much annoyed at it, and unless I at once not only stop the sale of them, but also get back what have been already sold, they shall take proceedings against me. Will you now oblige me by informing me whether I am liable or not, and whether I am bound to stop the sale and get those back? I am quite ready to please them by doing so, but I do not like receiving threatening letters; and I should be glad if you would let me know.—**BERT HOLE.**

It is a nice point, but it seems to us that you solicited the customer, and were paid for taking the pictures, therefore you have no right to sell copies against their will. The copyright is invested in the customers. They can certainly stop the sale if they put the law in force. Would it not have been more to your interest, from a business point of view, to at once have withdrawn the pictures from sale, and apologised to the customer, rather than raise any question as to your supposed rights?

**OPENING STUDIO.**—Is it possible to open a middle-class business (and be successfully continued by two) for £50 and £25 capital, working by artificial light, and finishing in matt and glossy, black and sepia bromide, or would P.O.P. have to be introduced?—**C. C. MATHER.**

This is a question that no one can answer so well as you and your partner can, as you must know your business abilities better than we can possibly do. We should say, however, that if you have to build a studio, install artificial light, and provide apparatus, accessories, etc., you will have but little working capital left. We assume that you have but a limited knowledge of practical

photography, or you would know that there is but little difference between bromide papers and P.O.P.

**G. J. CLARKE.**—The "Colour Photography" Supplement has appeared without exception with the first issue of the "B.J." in each month during the past year.

**JAPANESE VELLUM PAPER.**—1. I notice mention of this paper on page 40 of last week's issue, January 17. Can you inform me where I can obtain it? 2. Which is best for carbon, the thick or thin paper?—**C. P. M.**

See answer to "All Kapteyn," under "Japanese Paper."

**JAPANESE PAPER.**—I was much interested in reading your article on carbon printing in your No. 2,489, and have often wished to obtain the Japanese vellum papers referred to. Would you kindly state in your correspondence column where these can be obtained retail, and which kind is most suitable for transferring the carbon print on to, and oblige.—**ALL KAPTEYN.**

The agents for the paper are Messrs. Crompton Bros., 2, Queenhithe, London, E.C. They issue a book of samples of about twenty different substances and surfaces, any one of which can be used for the carbon pictures, and it is quite a matter of individual taste as to which is best. We are not sure that this firm supplies the paper in retail quantities. Better communicate with them.

**JERNY.**—Certainly the lens can be divided, as the separate components used as lenses of longer focus. We should call the lens a suitable one for all-round work.

**BISULPHITE LYE.**—Would you be good enough to tell me the meaning of sodium bisulphite lye, which appears in a formula on page 687 in the "B.J. Almanac."—**T. KEYSSELL.**

A strong solution of "sodium hydrogen sulphite," or "sodium acid sulphite," as it is more commonly called. A special preparation for photographic purposes is sold by the Lumière N.A. Co.

**C. R. WILTON.**—We should say that the matt surface opal plates with polished bevelled edges will best answer your purpose. They are stocked by all the large dealers, such as Houghtons, Marion's, and others. They are very inexpensive.

**G. CONNOR.**—Copper and zinc plates suitable for photo-engraving are supplied by Messrs. Penrose and Co., 109, Farringdon Road, E.C.

**MR. PONTING'S PHOTOGRAPHS OF JAPAN.**—The Japan "Daily Mail," in a recent issue, refers to the collotype reproductions by Ogawa of the photographs of Fujiyama and other notable scenes in Japan by Mr. H. G. Ponting, who is at present in London. Our Japanese contemporary describes the photographs as "the most beautiful reproductions of Japanese scenery and life we have ever had the great pleasure of viewing. They are quite free from the objectionable characteristics which belong to the ordinary photograph: offensive fidelity, mechanical accuracy, and exclusion of all appeal to the imagination."

**NEWMAN AND GUARDIA, LTD.**—In our notice of this firm's new catalogue in last week's issue we omitted to state that all applications for same should be accompanied by a remittance of three penny stamps.

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## The British Journal of Photography.

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## SUMMARY.

The exhibition of portraiture by members of the Professional Photographers' Association opens at the house of the "British Journal" on Thursday next, and will remain open until March 7 daily from 10.30 to 4.30; Saturdays 10.30 to 12.30.

Mr. Frederick H. Evans' exhibition at the R.P.S. of multiple painting is a thing not to be missed. Mr. Tilney's review of it appears on page 87, and a report of Mr. Evans' opening lecture on page 91.

Mr. F. W. Speaight's scheme for the improvement of the roadway of the Marble Arch and the separation of the Arch from Hyde Park, was on Tuesday last formally adopted by the London County Council, with expressions of compliment to Mr. Speaight for his suggestion of the scheme. (P. 83.)

Some corollaries which must follow the assumption of professional rank by a photographer are the subject of some notes on page 80.

Useful awards at exhibitions, the Kallitype process, and printing vignettes by artificial light, are topics of general interest in our "Correspondence" columns. The status of the professional photographer, copyright in postcards, and the stamping of mounts, are of more professional interest. (P. 93.)

Mr. Blake-Smith recommends the thiocarbamide bath for the after gold toning of sulphide-toned bromides. (P. 88.)

We regret to record the death of Mr. H. S. Mendelssohn, one of the best-known professional photographers. (P. 86.)

We review Dr. von Rohr's exhaustive treatise on binocular instruments. (P. 88.)

A Study of Orthochromatism.—The first portion of the paper by Mr. R. J. Wallace describing sensitometric experiments on the use of the newer sensitizers commences on page 83.

Some comments on the behaviour of agar as a vehicle for silver salts in the making of emulsion papers and plates appear on page 9, in further reference to the communication of Messrs. Cooper and Nuttall to the R.P.S. recently.

## EX CATHEDRA.

### The Barnsley Disaster.

A contemporary remarks that in view of the Barnsley and other disasters one cannot help commenting on the fact that the cinematograph is indirectly responsible for the loss of many lives. Why Barnsley should be mentioned in this connection we are at a loss to imagine. The principle of giving a dog a bad name need not be followed by the photographic press when referring to the cinematograph, and though some serious calamities did happen in the early days of "living pictures," the Barnsley fatalities were not in any way due to the fact that a cinematograph was in use. The proposed entertainment might have taken any other form. A Punch and Judy show would most likely have attracted as big a crowd of children, and in the same absence of proper supervision the same disaster would have probably occurred. As a matter of fact most of the fatalities that have occurred at cinematograph entertainments have been due to panic when there was little or no real danger. Under the regulations now observed in most places there is no danger whatever to the audience, even if a film catches fire. Panic is the only real danger, and senseless remarks with regard to the responsibility of the cinematograph for the loss of many lives suggest danger where there is none, and thus serve to encourage further panics.

\* \* \*

### The P.P.A. Exhibition.

The collection of some hundred examples of portraiture by members of the Professional Photographers' Association, which will be opened for inspection on Thursday next, will be found to contain much from which the rank and file of the profession may expect to learn. We shall refer next week to the exhibits in detail, but now we must not omit a reference to the somewhat melancholy interest arising from the death of two exhibitors, both members of the P.P.A. committee, and responsible in some measure for the exhibition. The removal by death of Martin Jacolette and H. S. Mendelssohn has deprived photography of two professional workers, both of whom were original in use of the photographic processes and set a standard of work before themselves which they persistently studied to raise.

\* \* \*

### Distortion in Lenses.

The article by Dr. Wandersleb, of the Carl Zeiss scientific staff, which appears on another page, will suggest to the serious reader an explanation of things which at times may have puzzled anyone with even a fair acquaintance of photographic optics. We have heard of instances where a lens has been returned to the maker with a complaint of serious distortion which the maker was quite unable to discover in the lens. It was afterwards found that when making tests on a different

scale of reduction the distortive properties of the lens were very pronounced. The discrepancy arose from the different circumstances in the two cases. The maker's test was an indoor one on a fairly close test-chart; the users, out of doors, on a distant object. The lens which showed the phenomenal difference implied by the above description was a unique specimen, and if our recollection serves us correctly, no explanation of its behaviour was discovered. Dr. Wandersleb's curves, however, show that such a thing exists in a more or less modified form in almost all lenses, although in the case of a great many the defect is negligible.

\* \* \*

#### Failure Of the Reciprocity Law.

Herr A. Werner points out in the current issue of "Zeitschrift für Wissenschaftliche Photographie" that the Bunsen-Roscoe reciprocity law, according to which—calling  $E$  the exposure,  $I$  the intensity of the light, and  $t$  the time of exposure— $E=I t$ , does not hold good with colour sensitive plates. The failure of this law was first pointed out by Abney in 1893, and was confirmed by Schwarzschild, Eder, and Englisch. It was dealt with at some length by Mees and Sheppard, but in all cases the ordinary non-colour-sensitive plate was under consideration. Schwarzschild proposed the formula  $E=I t^P$ , in which  $P$  is less than unity. The light source used by Werner was a controlled osmium lamp with a yellow screen. The plates were exposed in strips at varying distances for varying time and the densities obtained on development measured. The results proved that the value of  $P$  varied with different brands of orthochromatic plates from 0.78 to 0.85. It was also found that within wide limits the concentration of the developer has no marked influence on  $P$ , but that temperature and duration of development were of marked influence, and the higher the temperature and the longer the duration of development, the greater the failure of the reciprocity law or the less the value of  $P$ . The practical effect of this is that in stellar photography the use of colour-sensitive plates is hardly advisable, because although the plates may be specially sensitised for the particular light of the star, yet the increase of exposure necessitated by the small value of  $P$  does away with any possible advantage as regards cutting down the exposure.

\* \* \*

#### Early Photography

The "Times" of Friday last prints a letter from a Dr. Eric Pritchard under the very misleading title, "The Date of the First Photograph." The reference is to the negative of the Slough telescope made by Sir John Herschel in 1839, a few days before the telescope was dismantled. The writer, in referring to a photograph which came into the possession of his father in 1890, is evidently writing of a copy of the original Herschel negative, and a reproduction of Herschel's description of its production, which was prepared by Sir William Herschel and has been presented by him to various friends. Interesting as this souvenir is, it should not be confused, as the heading to Dr. Pritchard's letter confuses it, with the "first photographs."

\* \* \*

#### Photography and Criminals.

Some idea of the great importance which the Continental police authorities attach to photography as a means of tracing criminals and bringing them to justice may be gathered from the annual report of the Berlin detective department, which is just published. During the year no less than 1,544 persons were photographed in the private studio attached to the central police buildings, and 404 photographic copies were made from photographs or sketches

of suspects. To different police authorities on the Continent and abroad 59,314 prints from these photographs were sent, as against 45,950 during last year. But of much greater interest is the fact that the exact results obtained by these photographs are also published, and they fully prove the great value of this interesting department. The photographs, as is already well-known, are collected into what is called the Criminal Album, and they led to the arrest of 176 criminals, while by exhibiting copies in public places other seven "wanted" characters were brought to justice. It would be interesting to compare these figures with a report coming from Scotland Yard showing what part photography has played in the prevention of crime in England, though we believe the photographs are found less valuable by the English authorities than finger-print records.

\* \* \*

#### Playertype

Dr. Friedburg, of New York, states, in the "Photographische Korrespondenz," that he tried to obtain the images of scratches on a metal plate on a dry plate by contact in the dark for several weeks without success, and concluded that light played some part in the effects that had been obtained. A daguerreotype was then placed in contact with a plate and the plate exposed to diffuse daylight. When the correct exposure was hit upon, a faint positive of the daguerreotype image was obtained. Starting from this point, Dr. Friedburg tried to obtain images of printed matter, pictures, etc., and succeeded. The theory of the process is not clear, nor has any satisfactory explanation been given of the results obtained by Mr. Hort Playon on bromide paper. Dr. Friedburg suggests that it might be possible, by using a Lippmann plate, to obtain heliographic results.

\* \* \*

#### Free-Sitting Business.

The method of attracting sitters to the photographer's studio which is based on the offer of a sitting, or a portrait, for nothing, is one which we have often referred to as exerting an injurious influence on the entire portrait business, even though it may be a necessary expedient in some West-end establishments. But if it is to be adopted at all it surely needs to be put into practice in a less half-hearted way than is the custom with some studios. His interests outside of photography having led the editor of the BRITISH JOURNAL to become a member of several societies, it is his experience to be the recipient of offers from photographers, who would have him believe that the uppermost desire of their hearts is to prepare a complete series of portraits of the members of the So-and-so Society. To suppose that members of such societies as are approached in this way take this seriously is to put a value on human intelligence which may or may not be merited, but the point we would wish to suggest to some of those who adopt these methods, is that they ought at least to offer something more than the sitting. A recent circular does not even promise to repay the invited person for his trouble with a print, in which case it might be difficult for the photographer to establish proprietorship in the copyright.

\* \* \*

#### Stains from Farmer's Reducer.

The suggestion has recently been made that the stains met with by some workers when using Farmer's reducer of hypo and ferricyanide are due to developer left in the film, but this seems to us rather a far-fetched explanation. It is far more likely to be due to the imperfect removal of the silver compounds formed during the action of the reducer. Any developer would very probably cause stains of a sort, but



the ordinary process of fixing we doubt if any developer remains in the film, while it is pretty certain that it can remain after fixing and washing. An imperfectly fixed negative will show stain owing to the reduction by light of the silver-hyposulphite compounds left in the film, and we may expect a similar result when any of the products of the action of Farmer's reducer remain. Our own experience is that stains do not appear if the reducer is followed by a plain hypo fixing bath, and it is invariably our practice to adopt this second bath. If this suggestion fully explains the stains we may expect that a reducer strong in ferricyanide and weak in hypo will also be likely to produce them, while one weak in ferricyanide and strong in hypo should be less likely to do so. It should be remembered that very similar stains are often produced with other reducers, such as persulphate, and the after use of a fixing bath seems to us to be advisable in all cases.

\* \* \*

# **Enlarging Carriers.**

Of late we have been compelled to do a considerable amount of enlarging and to deal with several types of enlarging lanterns, and, among the minor troubles we have met with, unsuitable carriers have been the most annoying. In two entirely different lanterns we found the same defect. The carrier was the wrong way round, and it became necessary to re-focus every negative used owing to the fact that the back of each negative, and not the film, fell into register. Such a ridiculously simple fault suggests that the designers of these lanterns could not have had much practical experience in enlarging, otherwise they would have known that it is a very great advantage to be able to rely on a carrier when it has once been obtained with a suitable test plate. No constructive difficulty whatever interferes with arranging that the carrier shall be the right way round at the start, but it is not always easy to put things right after the manufacturer has once put them wrong. In neither of the cases we met with was the carrier reversible, though this very simple arrangement is a very useful one when reversed images are required. In fact, both instruments seem to have been designed for making reversed enlargements only, and not for direct enlargements at all. A second equally irritating defect in the provision of carriers that have no means of holding the negative firmly in register. This fault did not exist in one lantern, but it was prominent in the other, and it is a very common one in the majority of the lanterns we have seen. Turn-buttons are usually provided, but they are obviously useless to hold thin plates in a deep rebate, and as a consequence it is generally necessary to wedge up the negative with matches or paper pads. Spring clips are essential, but we seldom see them provided by the manufacturer.

# **AGAR-AGAR IN THE MANUFACTURE OF PHOTOGRAPHIC PAPERS AND PLATES.**

The paper by Messrs. Cooper and Nuttall, printed in *extenso* in our last issue, may be of such importance to the commercial point of view as to warrant a few notes hereon. It at least opens up a field for experiment, which may be rich in results and constitute an advance in practical photography as did the introduction of gelatine.

The authors, unlike many writers, seemed to have prepared no trouble in their researches as to prior publications on the subject, and yet, curiously enough, have entirely missed any photographic references. The possible explanation of this is that as chemists they naturally turned

to chemical literature. Mr. Paymaster Mitchell, R.N., in 1882, was the first to suggest agar-agar for emulsion work in tropical countries. A year later Dr. Stolze stated that when mixed with gelatine agar separated out into small lumps free from the silver halides of the emulsion. In 1890 Rebikow took out an English patent for the use of agar, and suggested therein the repeated heating and cooling of the agar in water, and the separation of the insoluble particles by decantation. A recent patent claims the preparation of a solution by means of a digester.

The authors have said so much in their paper that practically we can only point out possible modifications of their procedure, which tend rather to the saving of time than to improvements. If a solution of agar is made and then allowed to set it will be found that a considerable portion of the insoluble content will be at the bottom of the vessel. It is easy then to turn out the jelly, cut off the lower portion, and with it the greater part of the impurities. It is then much easier to filter the solution after a second boiling. For the amateur worker the ordinary filter flask and laboratory filter pump will be perfectly satisfactory, and a litre can be easily filtered through hard filter paper in five minutes, even if the filter contents have to be returned to the jar for further heating. It may be as well to emphasise the point, noted by the authors, as to the necessity of keeping the solution well stirred, so as to prevent burning. The tendency to solution is very great; in fact, so much so that when once the solution has been brought to the boil it should be at once transferred to a water bath.

For commercial work the ordinary laboratory filter is far too small, but we have found that even the ordinary felt filtering bag, or rather two or three of them used in relays, are quite efficient. Naturally, however, the manufacturer would use jacketed filters and an exhaust pump. With such an arrangement the rate of filtration is but little slower than that of gelatine.

So far as can be seen at present, the future value of agar will be as a vehicle for the silver salts for papers. Far more exhaustive experiments are required to speak definitely as to its value for plate work.

The extreme thinness of the pellicle, its high melting point, and its comparatively inert nature, which somewhat recalls that of collodion, certainly point to a much more extended use in this direction. On the other hand, there are, we think, certain drawbacks, which should not be lost sight of. In the first place, using solutions of agar and gelatine of equal "thickness," the former has by no means such salt-holding powers as the latter—that is, given a somewhat heavy percentage of salts in the same bulk of solution they will show surface crystallisation much more readily with agar than with gelatine. In the second place, if, to avoid this surface crystallisation, the actual thickness or depth of the dried agar film be increased then it is extremely friable and will crack in all directions. We may also emphasise the necessity of rapid drying, not because of the liability of reduction of the silver salts, but to prevent a peculiar cracking of the film itself, which makes it hopeless for practical work. This cracking is very curious, and is seen most clearly when an agar-agar solution is coated on glass, allowed to set thoroughly, and pushed up with the finger-nail. A gelatine solution would merely hump itself together, so to say, and yet keep its homogeneous character, whereas agar seems to break into innumerable little nodules, each distinct from its neighbour. The practical effect of this would be that in commercial work, paper when being coated would have to be kept on the flat during the whole period. Not that this would be much difficulty considering the rate at which the paper dries, but it is as well to call attention to this point, for if paper coated with agar-agar be hung in fes-

toons before it is really dry this peculiar cracking will be apparent.

Messrs. Cooper and Nuttall emphasised one special advantage of this vehicle as regards papers, namely, that they can be dried at a very high temperature, and that there is therefore less "wandering"—we borrow the expressive German word—of the soluble silver salts into the support itself. There is, however, a still greater advantage in the use of agar-agar, that is connected with its lesser tendency to reduce the silver salts to the metallic state. Comparative trials, using deep narrow vessels, flat open dishes, and the ordinary emulsion pots of a factory have proved that a printing-out emulsion, with free silver nitrate, spoils under all conditions much less rapidly with agar-agar than gelatine. Unfortunately the time has not been sufficient to prove whether the same conditions hold good with coated papers, though it would seem that they would.

With regard to the use of agar for the manufacture of plates, we must confess to being not quite so hopeful. The conditions are totally different, except, of course, in the case of slow emulsions, which may be no more than the speed of bromide papers. With these there should be no difficulty. When one has to deal, however, with rapid emulsions, wherein the silver halides are so far ripened as to be practically on the verge of disassociation, then one has to be somewhat more careful. It being admitted that, in the ordinary course of manufacture, the emulsion has to be set and then broken up, washed, and remelted, the manufacturer carefully considers the after-ripening effects of these operations. What then is to be the result of raising an emulsion to boiling point? Will a fast emulsion stand such treatment?

It has been impossible, of course, in the short time since Messrs. Cooper and Nuttall read their paper to carry out a comprehensive series of experiments, but such as we have been able to make have proved most conclusively that one must re-learn much of what is now known. A fast emulsion—that is, one initially fast—will not stand the temperature of boiling water. Whether it be possible to so adjust matters that the initial speed of the emulsion shall stand such a temperature and yet turn out fast and clean (and the latter is most important) can only be proved by experiment. There is, however, one somewhat curious fact. If one takes solutions of agar-agar and gelatine of equal "thickness" and coats them on glass, allowing absolutely the same volume per area, the two behave in a totally dissimilar manner. The gelatine solution remains a coherent mass, adhering to the glass at all stages, whereas the agar-agar forms, as it were, a thin pellicle separated from the glass by a film of water. This is a very curious phenomenon, and one that we are not prepared to dogmatise on or explain. It may be, in fact, faulty manipulation on our part, but in every case where we have used agar on glass we have noticed this peculiar appearance. It is just as though the agar separated out from the water and formed a film or vehicle, distinct from the solvent. We are not prepared to say that this is going to lead to trouble, because our experiments are not complete, but in one particular application, that of colour screen-making, it is distinctly troublesome. One may prepare an agar solution of a dye and coat on glass and find that the water separates out, carrying some dye with it, causing peculiar blobby spots and stains on drying. This might be a serious matter in the case of plates, if it were, as is quite possible, the cause of frilling.

Agar-agar is, from the practical point of view, a new material for the photographic chemist and manufacturer. It promises well, and the paper printed in our last issue will be of considerable value as a starting point for the practical manufacturer.

## ETIQUETTE AMONG PROFESSIONAL PHOTOGRAPHERS.

In a recent article we raised the question of the photographer posing as the practitioner of a profession and endeavouring to place his relations with the public on a level with those of the professions generally so-called. Our conclusion was that there is very little, in fact, either to justify such an assumption or to recommend it on commercial grounds. Apart from these considerations, however, the higher status implies a propriety of conduct which we fear cannot be expected from the majority of "professional photographers" in these hard times. For while competition in the professions may be as keen as in a business, it may be held to differ from that of commercial life by its recognition of certain rules of the game. Be sharp lawyer, even a slightly shady lawyer, and you may yet preserve the respect of your colleagues, and perhaps the envy of some. But offend against some clause in the code of etiquette, and not all the King's horses and all the King's men will condone the *inconvenience* of your leg, Humpty Dumpty. Playgoers will recollect how Mr. J. A. Barrie, in "The Admirable Crichton," endows the genius of a butler with uncommon sensitiveness in "doing the right thing," a reflection, in the play, of the dignified tedious affability of his master. Our professional friend may not be one atom better or more generous than their neighbours, but they think it the correct thing to act as they were, and if we photographers are to aim at the professional code of manners we have got to take it with all its responsibilities and involutions, translated into terms of portrait photography.

It will be difficult to define precisely the acts which a photographer who desires to live up to standards of professional etiquette may or may not perform, but some which he certainly should dismiss from his programme, readily admit of definite specification. For example, to refer to a recent incident which was mentioned by a correspondent, we can scarcely imagine a photographer who claims to take a professional tone in the conduct of his business, stooping to avail himself gratuitously of the labours of another of his kind who, say, is arranging a group in a public place, and is unaware that a march is being stolen on him by the snapshot of a stealthy competitor.

Nor, to select another instance which is not infrequently brought to our notice, is it to be regarded as consistent with strictly professional conduct that a photographer should copy closely the work of some other of his colleagues (in the same town) by whom an original and novel standpoint has been selected in producing a view of some feature of the local scenery. The law of copyright, unfortunately, does not allow of his being restrained from such an action, but what can be said of the etiquette that does not prompt his abstinence from piracy in a mild form?

In matters such as these we deem the man least open to disappointment who expects the least. We fear that there will be very many ready to demur to the suggestion that, in the event of a person coming to their studios with a photograph (taken by a competitor) to be copied or enlarged, they should decline the order, and refer the customer to the photographer in whose custody the negative lies. Yet such a practice, it seems to us, is a necessary step from the principle of professional dignity.

Still fewer would be prepared to adopt the lead of a photographer in America, of whom a contemporary relates the following incident:—

"A lady with her little girl entered a studio in —, and said to the proprietor, 'I want you to make some sittings of my little girl. I was at So-and-So's studio last week, but



Although the operator made half a dozen negatives, none of them suit me; so, as I had not made any deposit, I concluded to try you.' 'Why, my dear madam, under the circumstances, I feel that you ought to go back and give that studio another chance.' They have spent their plates and their time, and really I could not be a party to such an unprofessional transaction.' After a few minutes' further conversation the lady took his advice, went back, and next time was perfectly satisfied with the proofs." The name of this hero is given—he is the vice-president of a photographers' association—but the very relation of the story

suggests the fact that such incidents are as rare in America as here, where the means by which a competitor's customers can be taken from him occupy the minds even of those who are semi-professional by general consent.

We quote these instances to give point to our contention that excellent as the professional aspiration may be, we are not quite prepared to abide by all its entails. It seems to us that the man who is content to take his photographic business as a business to be advanced by fair dealing and backed by good work is most likely to achieve success, and is most assured of respect from the public.

## DISTORTION IN SYMMETRICAL AND UNSYMMETRICAL PHOTOGRAPHIC OBJECTIVES.

[The following article, which is a shorter and more popular version of the author's previous paper in the "Zeitschrift für Instrumentenkunde," gives the curves for the distortion of a few symmetrical and unsymmetrical lenses of comparatively recent date. Since anastigmat lenses of both types are issued by almost every lens maker at the present time, the proofs which Dr. Wandersleb's laborious measurements supply of the fact that distortion is not an inherent property of either symmetry or non-symmetry are of real practical interest to the photographer. The text of the previous paper shows that there are lenses which give distortion in a higher degree than those here selected, and that the majority of those giving a greater distortion are of the unsymmetrical type. The examples now given by Dr. Wandersleb are evidently selected to show that when comparing modern lenses of high quality the fact of symmetry is not a guarantee of absolute freedom from distortion at various scales of reproduction, and that a non-symmetrical type may in fact compare favourably with one symmetrical in its construction.—Eds. "B.J."]

AMONGST photographers it is almost generally accepted that lenses, the elements of which are symmetrical with respect to the diaphragm, are, on account of this symmetry, free from distortion; and that, on the other hand, unsymmetrical objectives are inherently possessed of this defect. As an illustration of this article of faith the following excerpt from a German book on the photographic objective, recently published and enjoying a fairly large circulation, may be quoted:—

"Whilst in symmetrically constructed doublets, that is to say, in the anastigmats (for instance, the Goerz double anastigmat), the aplanats, and the periscopic lenses, distortion is strictly excluded, we find the defect prevailing in single lenses, also in doublets of the unsymmetrical type (some anastigmats, portrait lenses, etc.). The defect is certainly not so pronounced as in the single lenses, but nevertheless it does exist, and manifests itself in such a manner, that unsymmetricals cannot be recommended for photography in which correct drawing is a desideratum, as, for example, in architectural work."

Other books on photographic optics, and especially the prospectuses of some optical firms, perpetuate this idea.

That this dogma is directly opposed to actual fact was known, published, and demonstrated in England forty years ago. Ten years ago the subject was again discussed, and thoroughly treated from the theoretical standpoint.<sup>1</sup> That this dogma has so stubbornly maintained its hold up to the present time—the above notwithstanding—may be due to the fact that curves, such as have been in the last few years widely used and have contributed much to a clearer understanding in regard to the other image aberrations of the photographic lens, are as yet apparently unknown for illustrating distortion of the image. The writer has therefore, in an exhaustive article,<sup>2</sup> undertaken the task of publishing such curves for a large series of well-known objective types, and in connection therewith of giving a résumé of previous literature on the subject. In the following only one or two points are briefly discussed.

The error of distortion in a photographic lens consists in

reproducing objects, which extend towards the margin of the field of view relatively to those lying in the middle, either too small or too large, and in most cases in a higher degree the further the objects extend from the middle of the field towards its margin—that is to say, the greater the angle of the field of view. In the case of too small reproduction of the outlying regions, straight lines—for example, the lines of a house—appear bulged outwards in the margin of the field of view; in the other case they are curved inwards. From this fact, the first kind, which is particularly noticeable in landscape lenses with the diaphragm in front, is called "barrel" distortion; the second kind, which is found in a high degree in many tele-objectives, "pin-cushion" distortion.

It is not permissible to speak of the "freedom from distortion" positively, i.e., for all ranges. Distortion can be eliminated, strictly speaking, only for a definite object distance, that is to say, for a definite scale of reproduction,  $N$ . Being once corrected for  $N$ , other scales of reproduction exhibit traces of secondary distortion, and generally to a greater degree the greater the relative attainable aperture of the objective. In objectives with the large relative aperture  $f/4.5$ , the alteration in the error of distortion is, in general, greater with the scale of reproduction than in an objective whose maximum relative aperture is only  $f/18$ . If, however, the larger aperture be stopped down to  $f/18$ , the inherent distortion is, of course, by no means removed.

Symmetrical objectives occupy a peculiar position, in so far as in them, without any assistance on the part of the constructor, freedom from distortion for reproduction in full size is always to be obtained, but the largest errors of distortion for the reproduction of distant objects still exist. In unsymmetricals, on the other hand, the constructor in many cases purposely seeks out that scale of reproduction—for example,  $N = \infty$ , or  $N = 10$ —for which he wishes to eliminate distortion to the greatest possible degree.

Respecting the particular scale ( $N$ ) for which distortion should be corrected, in landscape work  $N$  is very large ( $N = \infty$ ), in architecture and instantaneous exposures of the most varied kind  $N$  usually lies between 300 and 10. In interiors and portraits  $N$  is frequently equal to 10 or there-

<sup>1</sup> M. v. Rohr, "Zeitschrift für Instrumentenkunde," vol. 17, p. 271, 1897.  
<sup>2</sup> E. Wandersleb, "Zeitschrift für Instrumentenkunde," vol. 27 (1907), p. 33.

abouts. A smaller than 10 is the exception in amateur photography, as that would mean that objects lying nearer than about  $1\frac{1}{2}$  yards were being taken with a quarter-plate camera whose objective has a focal length of about 6 in. For this reason, in the following curves, the error for distortion is given for the two extreme values,  $N=10$  and  $N=\infty$ .

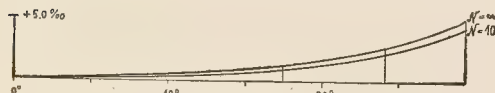
The distance of the curves from the horizontal straight lines gives at once the difference pro thousand between the actual

is remarkably exemplified in Figs. 1 to 10.<sup>3</sup> The symmetrical universal objectives here reproduced are in by far their greater range of application by no means free from this error, and unmistakably show "pincushion" distortion, whilst the notable unsymmetrical doublets given along with them are for the same range almost perfectly free from distortion.

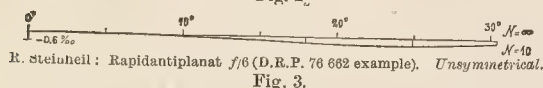
As to the effect of the deviations here represented, practical evidence can easily be obtained, if one of the well-known rapid



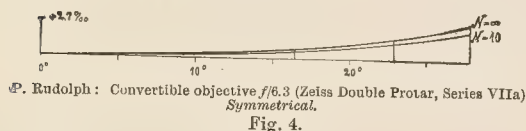
P. Rudolph and E. Wandersleb: Zeiss Tessar  $f/4.5$ . *Unsymmetrical*.  
Fig. 1.



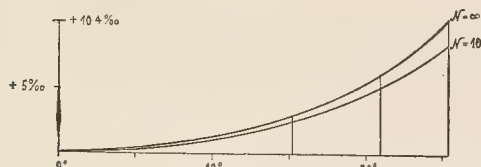
W. Zschokke and F. Urban: Four lens objective  $f/5.6$ , old kinds of glass (C. P. Goerz D.R.P. 145,841 example). *Symmetrical*.  
Fig. 2.



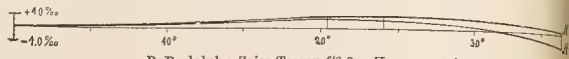
R. Steinheil: Rapidanoplanat  $f/6$  (D.R.P. 76 662 example). *Unsymmetrical*.  
Fig. 3.



P. Rudolph: Convertible objective  $f/6.3$  (Zeiss Double Protar, Series VIIa). *Symmetrical*.  
Fig. 4.



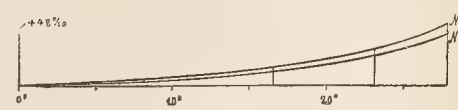
K. Martin: Four lens anastigmat  $f/8.3$ , old kinds of glass (Busch, Austrian Pat. 8,364 example). *Symmetrical*.  
Fig. 5.



P. Rudolph: Zeiss Tessar  $f/6.3$ . *Unsymmetrical*.  
Fig. 6.



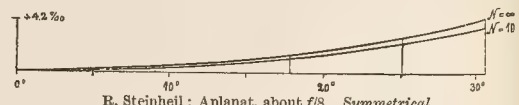
E. von Hoegh: Double anastigmat  $f/6.8$  (C. P. Goerz, Series III, produced in 1901). *Symmetrical*.  
Fig. 7.



R. Steinheil: Orthostigmat  $f/6.8$  (produced in 1901). *Symmetrical*.  
Fig. 8.



H. D. Taylor: Cooke lens, about  $f/8$  (Brit. Pat. 15,107/95 example). *Unsymmetrical*.  
Fig. 9.



R. Steinheil: Aplanat, about  $f/8$ . *Symmetrical*.  
Fig. 10.

size of image and the exact size of image for the half-angle of the field of view, which can be read off on the horizontal.

It will be at once conceded that there are unsymmetricals extant which show very much greater errors of distortion than symmetricals. But it must also be said that there are unsymmetrical objectives in which, for the most important cases, distortion is eliminated to a very much more perfect degree than is possible in symmetrical objectives of the like rapidity. This fact, though contradictory to the views in current belief,

symmetrical objectives be chosen for investigation and employed up to the large field of 80 deg., or even 90 deg., frequently claimed for lenses of this type. It should be arranged so that the margin of the field of view contains a straight line, and then it will be seen that a very determined curvature in this line towards the middle of the field is the result.

DR. E. WANDERSLEB.

<sup>3</sup> E. Wandersleb, "Zeitschrift für Instr.-Kunde," vol. 27, p. 33, 1907. See also p. 145, Eder's "Jahrbuch für 1907," from which the following ten figs. are taken.

**COPYRIGHT IN PAINTINGS.**—A decision of great importance regarding the protection of copyright in paintings in the United States has (writes a correspondent to the "Times") just been arrived at by the Supreme Court at Washington, and ends a lawsuit which has for a number of years been carried on by the Berlin Photographic Company (of Berlin, London, New York, and Paris) against the American Tobacco Company and the American Lithograph Company, who had reproduced Dendy Sadler's well-known picture "Chorus," of which the Berlin Company held the copyright. The offenders were aware that the copyright belonged to the Berlin Photographic Company, but they insisted that it had no value in the United States (although it was duly entered at Washington), because the original painting, when exhibited at the Royal Academy in London, did not bear an inscription to the effect that the copyright belonged to anyone. They further claimed that, according to

American views, the exhibition in a public gallery made a picture public property. The case was brought up through the various stages of the courts, until the Supreme Court of the United States decided in favour of the rightful owners of the copyright, and declared that the public exhibition of a painting does not amount to a publication within the meaning of the statute, and that the copyright notice which has to appear on the reproductions need not be on the original painting.

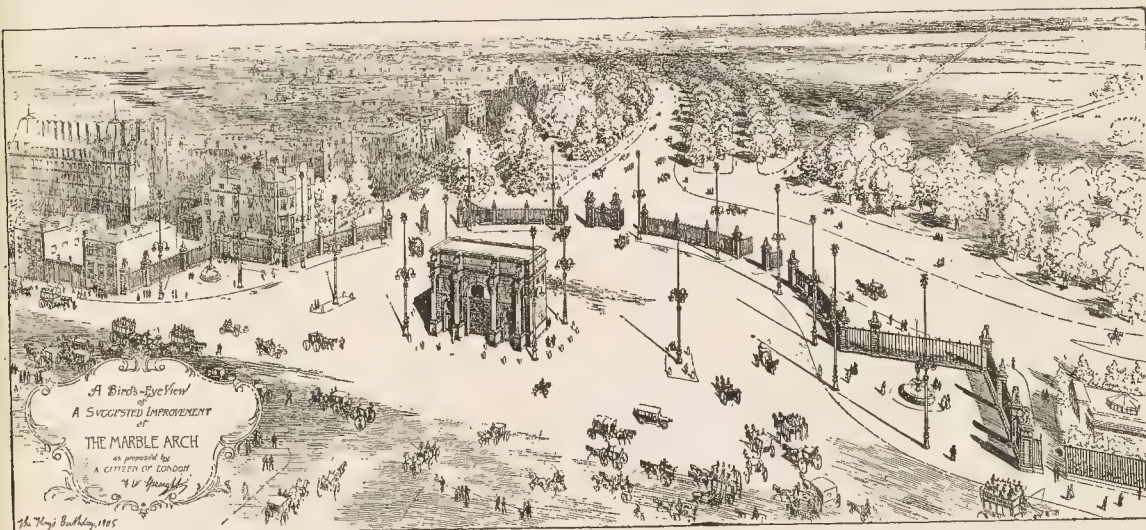
**HACKNEY PHOTOGRAPHIC SOCIETY.**—The annual concert will be held on February 4 in the Board-room, Hackney Baths, when the chair will be occupied by the president (Mr. A. J. Linford). In addition to an interesting programme of both vocal and instrumental music, a musical farce, entitled "The Man in Possession," by Mr. Harold W. Lane, will be produced under the direction of Mr. A. Cook.



## A PHOTOGRAPHER'S SCHEME FOR BEAUTIFYING LONDON.

We have referred on previous occasions to the plan suggested by Mr. F. W. Speaight in 1905 for the improvement of the surroundings of the Marble Arch. The scheme has already been endorsed by the City of Westminster and the Boroughs of Paddington and Marylebone, each of which bodies have voted a sum of £2,112 towards the cost, whilst the City of Westminster has in addition agreed to maintain the increased

we may quote the "Times" of Friday last, in which it is stated that "if it be adopted and carried into effect the position of the Marble Arch in relation to Hyde Park will be different from that which it occupies to-day. The arch will remain on its present site, but a part of the park immediately to the rear of it will be thrown into the public highway, and the result will be that traffic at this congested point will be



roadways at an estimated cost of £600 a year. To embark on any public work, however, in London, is to reckon with the London County Council, but it is satisfactory to record that at its meeting last week the Council received a recommendation from its Improvements Committee that a scheme differing very little from Mr. Speaight's original suggestion should be adopted, as will be seen from the reproduction of Mr. Speaight's original drawing. As showing the interest taken in the scheme,

able to pass behind the arch, instead of, as now, only in front of it. As far as one can judge from the plans, a great public improvement will result from the carrying out of the scheme, and the part which a private citizen has taken in advocating it should not be allowed to pass without acknowledgment."

As we go to press we read that the London County Council has adopted the scheme and expressed its obligation to Mr. Speaight for its origination.

## ORTHOCHROMATISM BY BATHING.—A SENSITOMETRIC STUDY.

[THE following is the full text of a further communication in the appearing as "Studies in Sensitometry." The same author's first last year, and were reprinted in our columns from proofs specially prepared, as was the present paper, by Mr. Wallace, for "The British Journal of Photography." Our acknowledgments are therefore equally due to Mr. Wallace and to the "Astrophysical Journal," in which the papers have first appeared.—EDS., "B.J."]

### Object.

In a previous paper<sup>1</sup> the writer has referred to the evaluation of colour-sensitiveness in photographic plates, and has suggested a method for the production of spectrum negatives directly comparable with one another. This second paper deals further with this subject.

The main object of the present work was the investigation of orthochromatic action by bathing-methods, and the means of producing maximum effect throughout the entire visible spectrum with the

series of researches by Mr. R. J. Wallace, of the Yerkes Observatory, published experiments on a system of daylight sensitometry appeared prepared, as was the present paper, by Mr. Wallace, for "The British Journal of Photography." Our acknowledgments are therefore equally due to Mr. Wallace and to the "Astrophysical Journal," in

dyes now at the disposal of the worker in photography. Not only was it desired that the plate be "panchromatic," but it was also sought to be as truly isochromatic as possible; that is to say, equality of deposit for the various regions throughout the spectrum was considered as of primary importance, provided that it was not obtained at too great a sacrifice of speed. This latter consideration therefore eliminates the introduction of any dyestuff whose function would simply be a screening action upon the plate.

Throughout the course of the work certain combinations presenting more than common interest were noted and investigated as they

<sup>1</sup> *Astrophysical Journal*, 25, 116, 1907.

occurred. In no case was any effort made to record a sensitiveness which required an abnormal exposure when compared with that necessary to obtain full printing density in the blue-violet.<sup>2</sup>

### Method of Work.

The sensitizing influence of the cyanines and isocyanines upon gelatine dry plates has been the subject of investigation by a very large number of workers, principal among whom may be mentioned Eder and Valenta, von Häbl, Stenger, König, Mees and Sheppard, etc., and much has already been published. The work, however, does not appear to have been sufficiently extended, and it has therefore seemed good to the writer that with a chosen set of dye-stuffs all possible combinations should be experimented upon, and under variations sufficiently great to render the work comprehensive.

The dyes selected were assigned numbers and divided into groups, the first of which was arranged as follows:—

1. Pinacyanol,
2. Pinaverdol,
3. Pinachrome,
4. Homocol,
5. Dicyanine.

With these five numbers as a base the following combinations were made:—

- 1, 12, 13, 14, 15, 123, 124, 125, 134, 135, 145, 1234, 1345, 12345,
- 2, 23, 24, 25, 234, 235, 245, 2345,
- 3, 34, 35, 345,
- 4, 45,
- 5,

which represent all possible combinations with five figures.

The composition of the preliminary (or "first test") bath was

Dyestuff (1:1000 sol. in alcohol) .....	2-7 cc.
Water .....	200 cc.
Ammonia .....	3 cc.

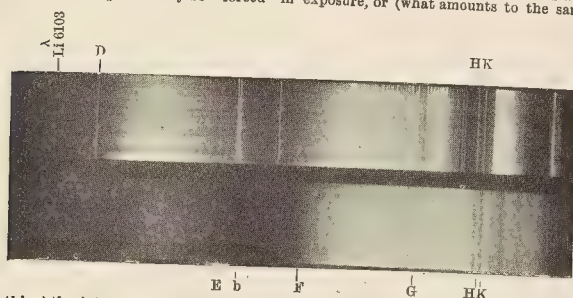
the variable amount of dye solution depending upon the number of components. All plates from this bath were bathed and dried without supplementary washing.

The type of plate selected for bathing was the Seed 27 "Gilt Edge," and the length of bathing was in every case three minutes.

Each of these plates (size  $3\frac{1}{4} \times 4\frac{1}{4}$  inches) was then exposed to a series of diffused daylight spectra, in the "standard" spectrograph for 15 and 30 seconds, and 1, 2, 4, 8, 12, 16 minutes respectively; two supplementary exposures were also made, first, through an aesculin filter absorbing all wave-lengths shorter than  $\lambda$  3968, the object being the avoidance of false conclusions in sensitiveness due to the overlapping of the second order ultra-violet. The second exposure was made through an ammonium picrate filter, whose absorption ended rather abruptly at  $\lambda$  5200, and with the collimator wedge in position, which displaced the spectrum relatively along the plate, thus bringing the B line about equally distant from the two edges. This latter exposure is of great value in determining extent of practical sensitiveness.

From the set of thirty-one "type-plates" thus secured (each con-

<sup>2</sup> A note may be interpolated here upon the fallacious results obtained with bright-line, discontinuous spectra in the estimation of chromatic sensitiveness. It is possibly as true as it is practical that if a plate can be impressed with a radiation of certain wave-length, it is then "sensitive to" such radiation; but it is well known that plates may be "forced" in exposure, or (what amounts to the same



thing) the intensity of the radiation may be so increased that a sensitiveness is recorded in a region to which the plate is, in the narrower but more practical meaning of the word, entirely insensitive. As such an example the illustration appended needs no comment.

For description of this instrument see former paper, previously referred to.

taining nine spectra) twenty were selected for continued study possessing particular interest, and with these the treatment varied according to Table I.

The assignment of decimals was simply to facilitate the recording of results in the laboratory note-book. For example, type 14 then represents a "27" plate bathed in pinacyanol+homocol, in bath composed of water+alcohol+ammonia, and washed in alcohol; the subscript *e* refers to temperature and will be considered presently.

TABLE I.

Basic Constitution of Dye Bath.	Subsequent Washing.
0.1 Water .....	No washing
0.2 Alcohol .....	No washing
0.3 Water + Alcohol .....	No washing
0.4 Water + Ammonia .....	No washing
0.5 Alcohol + Ammonia .....	No washing
0.6 Water + Alcohol + Ammonia .....	No washing
0.7 Water .....	Water
0.8 Water + Alcohol .....	Dil. alcohol
0.9 Water + Alcohol .....	Alcohol
0.10 Water + Ammonia .....	Water
0.11 Water + Alcohol + Ammonia .....	Alcohol
0.12 Water + Alcohol + Ammonia .....	Dil. alcohol
0.13 Water + Alcohol + Ammonia .....	Water
0.14 Water + Ammonia .....	Alcohol

Upon examination, this large number of plates was capable of furnishing very authoritative information upon certain combinations which were therefore isolated and subjected to further study by varying the amount of dye in the component parts of the combination.

The influence of temperature of the bathing-solution and washing bath was also investigated at temperatures ranging from 12 deg. to 30 deg. C., at which latter point the gelatine film partially dissolved, the series of subscript letters already referred to indicating the temperatures.

<i>a</i> = 12° C.	<i>b</i> = 15
<i>c</i> = 18	<i>d</i> = 20
<i>e</i> = 23	<i>f</i> = 24
<i>g</i> = 26	<i>h</i> = 30

A second group of dyestuffs, consisting of

6. Orthochrome I.,
7. Cyanin,
8. Ethyl Violet,
9. Tetraiodofluorescein,
10. Ethyl Cyanin T.,

was handled in a similar but less extensive manner to Group 1 (twenty plates being made), and deductions from the spectra obtained thereon allowed of a further reduction to ten, as showing probable interest in combination with the secondary and final selections of Group 1. These combinations were in turn made up, plates again bathed, and the spectrum photographed.

Besides the dyestuffs arranged in the two groups already referred to, a large number of others<sup>4</sup> were also experimented with in combination with those contained in Groups 1 and 2, but only such as present interest in connection with the main object of the present investigation.

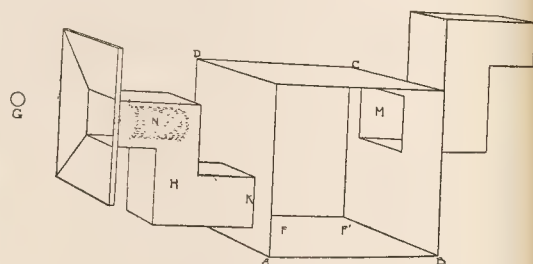


Fig. 1.

tions are referred to throughout the succeeding portion of this paper. It may be stated, however, that the total number of plates exposed numbered 287, besides 40 for acetylene duplication and speed determination, aggregating over 2,500 separate exposures.

<sup>4</sup> Among the remaining dyes experimented with during the course of the present work may be mentioned Pinachrome Blue, Echt Rot, Rose des Alpes, Fluorescein (Monobromo-, Diiodo-, Tetrabromo-), Glycin Red, Acridin Yellow, Chinoline Red, Benzo Green, etc.



### Drying-Cabinet.

The bathing of all plates was conducted in total darkness (time kept by means of an indicating metronome), and dried in a cabinet constructed especially for that purpose, and which may now briefly be described. Reference to the drawing will make the description sufficiently plain.

ABCD (Fig. 1) is a box closed in front by a light-tight door E, and containing two racks FF', in which were stood the plates to be dried. A constant current of air, supplied by an electric fan at G, was driven through the rectangular elbow-tube H, and entered the box proper at K, passed between and over the plates at FF', and thence through M to the outer air. A skeleton coil of German silver resistance wire at N was supplied with current, and by this means the incoming air was heated and dried. In use the fan was boxed in by a rectangular wooden frame, covered with muslin, which in practice served well to eliminate any trouble due to dust. The resistance coil was so wound that the heat generated in the drying-box averaged 32 deg. C., after running for 30 minutes.<sup>5</sup> Separate switches for the fan and coil enable either to be "cut in" independently.<sup>6</sup>

### Check-Plates and Speed.

Examination of the final plates as to fitness for measurement also indicated the most interesting types, and of all plates thus selected their corresponding dye baths were again made up and a new series of plates bathed therein under precisely similar conditions as recorded with the former set. These plates were then cut a half; one section was exposed to the spectrum of a constant acetylene flame for a series of exposures of 1, 2, and 3 minutes, while the spectrum of diffused daylight was impressed for 2 and 4 minutes at the top and bottom. The daylight spectra in this duplicate set served for two purposes: (1) as position indicators by means of the Fraunhofer lines, and (2) as a check upon the plates already noted in the first series. The acetylene flame spectrum simply served to show that the plates were relatively as noted, but cannot, of course, serve for measurement except between themselves, on account of the difference in chromatic intensity between its light and daylight.

The remaining section of the plate was exposed to daylight in the rotating sector machine,<sup>7</sup> together with an unbathed "27" plate of the same emulsion number, and they were developed together. From this exposure was extracted the relative speed. In practice three bathed strips and one "27" were exposed and developed simultaneously.

After checking up the daylight plates with their corresponding acetylene plates, the former were measured in the spectra-photometer and their densities plotted as ordinates against wave-lengths as abscissæ, selecting that spectrum exposure on each plate which corresponded to an approximate density of 2.5 in the blue-violet.

As has been stated, it is not intended to detail the results from all of the plates thus obtained, but instead, reference will be made to but two classes—viz., those which possess primary importance because of sensitiveness throughout the entire spectrum, and those which are important by reason of special sensitiveness for a limited spectral region. In both instances the relative sensitiveness-ratios are tabulated for as many positions as may be necessary to convey truthful impression of the results, while particular cases are subject to more complete measurement and graphically illustrated by their accompanying curves.

### Evaluation of $\chi$ .

It must be pointed out that, while, at first sight, the value for  $\chi$  has been recorded in apparently the same manner as pursued by Mees and Sheppard—viz.,  $\frac{\text{blue-sensitiveness}}{\text{yellow-sensitiveness}}$ ,<sup>8</sup> yet the value is arrived at in a somewhat different way, for while these workers obtain it as  $\frac{\text{yellow-inertia}}{\text{blue-inertia}} = \frac{\text{blue-sensitiveness}}{\text{yellow-(or red) sensitiveness}}$ , the value

<sup>5</sup> The wire used was B. and S. gauge No. 34, and the amount was approximately 20 ft.; the current was 110 volts, direct.

<sup>6</sup> The importance of rapid drying of bathed plates has been pointed out by von Hübl (*Das Atelier*, 1906, p. 6) and also by E. Valenta (*Photo. Korr.*, September 1907; also *Brit. Jour. Phot.*, 54, 751, 1907). The drying-cabinet in use by the writer was constructed in July 1903, and has been in use since with unvarying success.

<sup>7</sup> See Studies in Sensitometry. I., by the author. "B.J." May 17, 24, and 31, and June 7, 1907.

<sup>8</sup> First advanced by Eder, *Beiträge zur Photochemie*, III. Theil. 126; also *Système de Sensitométrie*, p. 133.

of such inertia having been obtained behind broad-banded filters, the present  $\chi$  value is obtained from the ratio of the densities measured directly from the spectrum plate, and hence, relatively speaking, replaces qualitative values by quantitative. Thus, in the present instance,

$$\chi = \frac{\text{density of blue at } \lambda \text{ 4100 } (= \beta)}{\text{density of } \lambda_n}$$

It will therefore be noted that the lower the value of  $\chi$  the higher the chromatic sensitiveness.

The shift in sensitiveness towards the red from the point of maximum absorption of the dye, following Kundt's law,<sup>9</sup> and due to the high refractive index of the silver salts, has already been noted and commented upon by many writers; also, in view of the fact that the absorption of these later dyestuffs is very definitely known, the inclusion of further work upon this point has not been considered necessary.

### Nature of Plate Used for Bathing.

It is often a point when emphasised that there should be selected for bathing a plate which is originally "fog free," and several writers have advocated the use of slow plates as being conducive to the best results. In the course of the present work there were included Seed and Cramer lantern-slide plates. Seed "26x," Seed "23," Seed "process," and Cramer "Crown," besides special instances where use was made of Cramer "Instantaneous isochromatic" and Cramer "Trichromatic." The results from these plates, coupled with experience gained in plate-bathing and covering a period of fourteen years, lead me unhesitatingly to the rejection of slow plates as being wholly unsuited to the end in view.

It goes without question that initially the plate selected must be free from fog, but after the best possible effect has been obtained—i.e., the lowest value for  $\frac{\beta}{\lambda_{\text{RED}}}$ , it still follows that the point of maximum sensitiveness of any plate, due to the silver salts, will not be materially shifted from its original position unless (1) the dye taken up by the silver bromide and gelatine be in such amount that it exercises a selective screening effect upon the light incident upon its surface, or (2) by the introduction of some dye which (otherwise inert) is present solely for the purpose of acting as a colour-filter.<sup>10</sup>

Eliminating from the discussion this latter phase,<sup>11</sup> and considering the former modified by the fact that the amount of active dye introduced is limited by reason of its negative sensitising effect when in excess, we find the question considerably narrowed. It follows, then, that not only must the plate be free from fog, but it must also be so chosen that its development-factor for blue-violet light ( $\gamma\infty\beta$ ) be as low as possible; by this means we are enabled to attain the maximum of development action without excessive density in the blue-violet, and hence a more uniform action throughout the spectrum.

### Development.

In but little of the work hitherto published is any mention made of the adoption of precautionary measures to insure the constant value of the factors controlling development. It is known that variation in development-time, temperature, or constitution will undoubtedly affect the values of the spectrum-curve, so that unless these constants be kept very rigorously exact, the value of the result will be vitiated to a greater or less extent depending upon the amount of variance. Throughout this work, therefore, the development of all plates was kept constant in constitution of developer and time of development, while the use of a water-bath of 70 litres capacity fitted with electric control assured steady temperature. The development tank is of thin glass, rectangular in shape, and all plates were handled and developed in total darkness.

Some consideration may now be given to the correct duration of development. It will be obvious that if any plate which possesses a high  $\gamma\infty$  for the blue-violet region receives the minimum of exposure, it may, by continued development, be made to give the required density in that region without showing the true relative colour-effect. On the other hand, the same plate may be exposed

<sup>9</sup> A. Kundt, "Ueber den Einfluss des Lösungsmittels auf die Absorptionsspectra gelöster absorbirender Medien," *Annalen der Physik*, 4, 53, 1878. See also Eder and Valenta, *Beiträge zur Photochemie*, III, 85.

<sup>10</sup> E. König, "Non-screen Orthochromatic Plates by Bathing," *Brit. Jour. Phot.*, 54, 736, 1907.

<sup>11</sup> Plates for astronomical and general scientific use must be of as high a speed as possible, whence it is impractical (from this standpoint) to consider the presence of a "screening" dye, as its action "slows" the plate.

until the blue-violet region has reached the over-exposed portion of the characteristic gradation-curve, and yet from development with a weak reducer, or from lack of sufficient length of development-time, it may in its densest part record a value even lower than the 2.5 necessary. Both plates would be equally untrue when considered as a record of relative sensitiveness.<sup>12</sup>

Hurter and Driffeld have shown<sup>13</sup> that in the gradation-curve of a photographic negative the true relation of the original light-values is obtained only when the development factor ( $\gamma$ ) of the negative equals 1.0. If lower than 1.0 then the tonal values will be reproduced with too small a difference between them, while if greater than 1.0 then the differences will be exaggerated. At the same time it must not be lost sight of that the production of a negative is not the final stage in the photographic process, but merely the means to an end, which "end" is a positive proof whether it be on glass or paper. It is also a well-recognised fact that different positive processes require a different type of negative, i.e., more or less "contrasty," or, correctly speaking, of different  $\gamma$  value.

The greater the amount of development action (within limits) which a well-exposed plate receives, the higher becomes the value of the  $\gamma$ . In the recording of scientific data development is often forced in the endeavour to bring out faint detail which lies beyond the period of the straight portion of the characteristic curve, and is located in the region of under-exposure, with the result that the more exposed portions of the plate become abnormally dense, and are generally subject to a later local reduction. In sensitometric tests, however, it is obvious that development should not be continued beyond the point where it is possible to reproduce the scale of values in its entirety.

It would appear, therefore, if  $\gamma_{1.0}$  means that throughout the "straight" portion of the plate curve, the deposits are proportional to the logarithm of the light received, that such a value would be correct for the development of the spectrum exposures. Theoretically, the simplicity of such a solution is marred by the fact that it has been shown that the gradation-curve varies slightly with the wave-length of the light; so that it results from this that if  $\gamma = 1.0$  at, say, the blue region, then in the yellow the value may be, say,  $\gamma_{1.1}$ <sup>14</sup>. In practice, however, the objection may be dismissed, as the variance involved is exceedingly small, and in work of this nature, when handled in the method proposed, becomes a vanishing quantity.

The great number of positive printing-media now available are called forth principally by the necessity of supplying the general worker with a means of obtaining presentable results from negatives which, from many reasons, have been improperly exposed or developed. In sensitometric work uncertainty of exposure and development has been eliminated, so that it simply remains to consider the process best suited for use. Such process is unquestionably that of a positive upon glass, and, therefore, the  $\gamma$  value of the negative must be altered to suit the capacity of the process, the amount and direction of such alteration depending upon the medium selected.

Taking only two examples from many media, let us consider development paper, on the one hand, and a transparent positive on glass on the other.

Three sector-disc negatives were taken which had been developed for different times and had measured development-factor values of  $\gamma_{0.8}$ ,  $\gamma_{1.2}$ , and  $\gamma_{2.5}$  respectively. All three were printed simultaneously on "portrait velox" for 4, 6, 10, and 16 seconds, exposure being to a constant light-source. All four prints were then developed in rodinol.

Examination showed that it was possible to reproduce only one of the negatives so that all of the tones would show, viz.,  $\gamma_{0.87}$ , the remaining two being too "contrasty," so that in printing for the tones involved in the higher densities, the other end of the scale

was lost. A transparency, however, on a Seed "27" plate gave complete scale of tones up to about 5.0 H. and D. units ( $\gamma_{2.5}$ ).

Now, if it be possible to print from a negative showing all tones between 0 and 5.0 it should (theoretically) be practical simply to develop the plate containing the series of spectrum exposures at temperature and for the time necessary to reach a development factor value of approximately 2.5. Objection to this course lies in the fact that although it is possible to measure in the neighbourhood of this density, yet there is in the hands of the writer an unreliable attendant upon such measures, and they are rendered possible only by the introduction of a supplementary measured density plate to the polarised beam. For convenience, therefore, and as being conducive to more reliable results, direct measurements are not made upon a density of higher value than approximately 2.5. Inasmuch as the slope of the gradation curve is dependent principally upon the amount of development action, it suffices, then, that the spectrum plate be developed with the same developer, for the same length of time, and at the same temperature, as the sector-disc plate of same constitution, which when measured records a value  $\gamma_{1.2}$ . This method, although not absolutely exact, is sufficiently near truth to be accepted, when we take into consideration the accidental errors of the evaluation. By exposure of a plate of similar nature through narrow-banded filters it would be possible to obtain sensitiveness values for various limited regions, which, with reference to the blue sensitiveness, could be easily calculated into a measure  $\gamma_n$  for use with the spectrum plate; but such a method would be refinement possessing no truly practical value, and would require to be redetermined for every variation in the sensitising bath.

It may be stated that a Seed "27" plate exposed to daylight the sector-disc machine requires three minutes' development at temperature of 20deg. C., with a solution of rodinol 1 : 24, in order to attain  $\gamma_{1.2}$ .

ROBERT JAMES WALLACE.

(To be continued.)

#### DEATH OF H. S. MENDELSSOHN.

WE regret to have to announce the death of Mr. Hayman Samuel Mendelssohn, which occurred on Friday evening last almost suddenly.

Mr. Mendelssohn was born in Germany, but his youth was spent in Poland. In his early manhood political reasons obliged him to leave that country, and he settled at Newcastle-on-Tyne, where he commenced his photographic career. After serving with Mr. L. Downey for some time, he went into business for himself, and was so successful that he found it advisable to take advantage of the wider scope for ability that London affords, and removed his business there about twenty years ago. In a brief space of time he established a reputation which has stood until the present time.

Mr. Mendelssohn joined the Royal Photographic Society in 1884 and was an original member of the Professional Photographers' Association. In the management of the latter organisation he took an active part, and was a regular attendant at the meetings of the committee. The suddenness of his death necessitated a coroner's inquest, which was held on Tuesday morning, and the funeral took place on the same afternoon at the Jewish Cemetery, Willesden Green.

**THEFT OF MINIATURES.**—A burglary took place last week at Messrs. Carl Hentschel's colour works at Knight's Hill, West Norwood, the burglars succeeding in effecting an entrance from the rear through some private grounds belonging to Portobello House. After generally ransacking the place and taking away a large number of tools, they succeeded in opening a safe and abstracting three miniatures in gold frames of the daughters of the Queen, painted on ivory and believed to be the property of the Queen. They were being reproduced for Mr. Turrell for a book on miniatures. Mr. Carl Hentschel, in conjunction with Scotland Yard, has left no stone unturned to recover the valuables, and it is satisfactory to record that on Monday last they were traced, through the good services of a publican at Brixton, to whom they were offered for sale.

<sup>12</sup> J. Precht and E. Stenger, "Die Farbenwerte auf panchromatischen Platten in ihrer Abhängigkeit von der Entwicklungsdauer," *Zeitschrift für wissenschaftliche Photographie*, 3, 67, 1905.

<sup>13</sup> *Jour. Soc. Chem. Indust.*, May 31, 1900.

<sup>14</sup> Mees and Sheppard, in their *Investigations on the Theory of the Photographic Process* (Longmans, Green & Co., 1907), p. 307, arrive at the conclusion that  $\gamma$  remains unaltered by different wave-lengths, the alteration existing merely in the shape of the curve, and due principally to differences in the optical opacity of the film, resulting from different coloured lights. See also article by E. Stenger, *Zeit. für Reproduktionstechnik*, March, 1906.

<sup>15</sup> The value of 5.0 was obtained by extrapolation, this density being too high for measurement without the use of special methods.



## Exhibitions.

### PHOTOGRAPHS AND MULTIPLE MOUNTING BY MR. FREDERICK H. EVANS.

At the rooms of the Royal Photographic Society Mr. Frederick H. Evans displays an interesting collection of his works, particularly with a view to demonstrating the advantages of the American manner of mounting photographs. The admirers and friends of Mr. Evans will not find here anything new, as most of the works are well known through exhibition and reproduction, and his mounting is not different in style from the usual thing expected of him. But where the advantage of this exhibition lies is in the object-lessons afforded by several duplicate prints mounted in alternative schemes of tint. Those who have not accustomed themselves to the observation of these matters will find it difficult to believe that a bright and shining print gleaming like a jewel in the centre of a mass of dark-toned mounts is an identical replica of another set in a pale scheme, where it looks rich, full, and sombre. Take, for instance, the delightful long-shaped "Beaucaire." In the one case its walls and turrets shine out with a strong effect of sunlight. Its sky is full of light; its river is grey. In the other case it seems to be frowning in a sullen gloom and backed by a sultry, heavy sky, with the river running darkly before it. The former print is trimmed an inch shorter, that is really all the difference between them actually. The dark one has an inch and a quarter of delicate dove-grey border with two white lines, and beyond that an expanse of French grey mount. The gleaming print, on the other hand, has at top an inch, and at bottom two, of a heavy purple-grey and two lighter lines far apart, and beyond this a wide margin of a contrasting dark grey a little less deep in tone. These two examples are taken as typical of many, and of the general principle of mounting in various tints. It is not claimed that the one is any better than the other. A choice is very hard to make.

But it is not only in the matter of tone that these qualifying factors exist. Pattern also takes a part. It may be noticed with what very subtle feeling the shaft and capital in No. 11 is bordered by two pairs of lines (black and grey), separated by the greeny white of the mount. The result is very lively and piquant, and carries out exactly the idea of the subject where the sharp chiselling of the fluting of the shaft and the carving of the capital takes strong relief and contrast from the falling of the light upon them.

As a general principle, however, contrast and complementaries in tone and colour are more relied upon than pattern and proportion in the various superimposed papers. This principle is regulated by taste, and in Mr. Evans's case the designing of his mounts and the adoption of their somewhat quaint, but never-erring shapes, is very obviously the outcome of a mind brought up upon *objets d'art et vertu*. His mind is, indeed, almost Japanese in its workings. His art is precise and exacting; the antithesis of that sort which looks broadly and swiftly and cries: "That's near enough; what's it matter?" Those who have been privileged to see him in his workshop know that his art is patiently painstaking and relentless.

If mounts and frames are to be perfected at all they can only be perfected in this way, and there can be no better education for one wishing to acquire refinement in this matter than to study quietly the mounts here shown and their effect upon the prints they embellish.

The American method, as it used to be called, of laying one colour of mount over another until each and all temper and qualify mutually and the mass sets off the print to the greatest possible advantage, is a method that few have the time or the means to indulge in freely. But those who are so fortunate know its inexhaustible resources. A deeply-shaded aisle in a cathedral is wanted to be as impressive as possible: mount it in a pale grey and it is forcible. Does it lack atmosphere? Then put a band of deeper, warmer colour near it and it is to the eye at once behind a thin veil of grey. Is it too hot in tone? Make the mount richer in warmth and it becomes pearly. A picture of sand dunes here blazes with sunshine which is forced from it by the low and retiring tone of the mount. And so on throughout all the examples, which comprise landscapes and portraits, as well as architectural subjects.

F. C. TILNEY.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for Patents were received between January 13 and January 18:—

**PROJECTION APPARATUS.**—No. 779. Improvements in projection apparatus. Robert Alfred Ives and Alfred Wrench. 21, Melgund Road, Highbury, London.

**VIEWING APPARATUS.**—No. 825. Improvements in or relating to apparatus for viewing stereoscopic or other pictures. Jules Richard, 53, Chancery Lane, London.

**PIGMENT PROCESS.**—No. 1,027. Improvements in pigment photographic processes. George Ernest Gibson, 20, George Square, Edinburgh.

**PHOTO-TELEGRAPHY.**—No. 1,203. Improvements in connection with the telegraphic transmission of photographs. Frank Wyndham, 11, Grosvenor Road, Norwich.

**PHOTO-TELEGRAPHY.**—No. 1,209. Transmission and reproduction of pictorial representations by electrical agency. John Joseph Pearson, 10, Jamaica Road, Bermondsey, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

**CHANGING-BOXES (DAYLIGHT LOADING).**—No. 13,957. 1907. The invention relates to changing-boxes for the daylight loading and unloading of photographic plates, comprising two receptacles, movable or removably secured to each other, and to magazine-boxes, to be used in conjunction therewith.

According to one construction, as hitherto proposed, the two receptacles are temporarily hinged to each other, and their adjoining walls are provided with slots for permitting the exposed plates to slide from one receptacle into the other, the slots being under the control of slides and the plates to be exposed being pressed forward by a spring. According to another construction, the two receptacles fit into each other, and the inner one receives a magazine-box to the end cover of which is attached a frame supporting the plates to be exposed, the arrangement being such that, before each exposure of a plate the inner receptacle is drawn out together with the magazine-box, and with the plates which have already been exposed, the whole magazine-box being capable of being withdrawn with the plates, which have been exposed and those which might have been left unexposed.

The present invention consists in wrapping the cartridge of plates in an opaque envelope-shaped wrapper adapted to receive the plates after they have been exposed, and in adapting a change-box to be used in conjunction therewith.

The invention also consists in the improved means for the daylight loading and unloading of photographic sensitised plates.

Each plate has, as usual, an anti-halation or other backing provided with slightly thickened portions or raised strips along two edges of the plate parallel with its line of travel to prevent the sensitised face being scratched or rubbed. This backing may be completely gummed or pasted on the plate, or attached either at one or both ends, so as to be easily removed when developing.

The plates are packed with their sensitised faces foremost in an opaque cartridge, and the number of plates and size of the cartridge corresponds with the capacity of the plate-holder.

The cartridge consists of a shallow box of wood, metal, cardboard, or other suitable material, formed with a longitudinal slot or opening in its back, whilst upon the front edges of three of its sides are formed undercut guides, adapted to receive the side edges and one end of an opaque detachable flexible cover, formed on or as an extension of the cartridge, and passing in front of the sensitised face of the foremost plate, around the outlet end of the cartridge and thence around the back thereof, where its end is secured, or the whole cartridge held intact by a band.

This cartridge is placed in an opaque enveloped-shaped wrapper, open at one end only, and one side of the wrapper is preferably

longer than the other, and is gummed on its interior edge. The package of plates made up in the manner above described is then in its marketable condition. For details of the changing mechanism the drawings in the original specification require to be consulted. Rupert Richard Allen, "Rubra," Hotham Street, East Melbourne, Australia.

**DEVELOPERS.**—A German patent has been granted to Dr. Meuter, of Vienna, for a photographic developer containing an amide of the mono-, di-, and trioxybenzoic acids and their monohalide substitution products. Gallamide or the amide of trioxybenzoic acid is the best. This is made by boiling tannin with acid ammonium sulphate and ammonia. The gallamide is mixed with a 3 or 4 per cent. solution of potassium metabisulphite and sufficient caustic potash solution added to form a perfect solution and the phenolate. For use this is diluted with 20 parts of water.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Pigment for the Bromide Process.

Any powder colour may be used (writes Mr. T. H. Greenall, in "The Amateur Photographer"), but it must be fine. Paint-shop colours are too gritty, except for large work. The smoke from a small lamp burning turpentine, if caught on the palette, or, better, on a 12 by 10 enamelled iron developing tray, will give a very pleasing black. The powder is made into a stiff paste, with the least possible quantity of Japan gold size, and is then placed in a small covered tin. For use a little about half the size of a pea (for a 10 by 8 print) is spread out on the palette, with one drop of a mixture of one part raw linseed oil and two parts common benzoline. The benzoline quickly evaporates when the paste is spread out, and is only used to dilute the oil. If the paste was originally stiff it may mean another drop of the medium before it will touch even the shadows, but it is best to keep on the hard side and soften very cautiously. At a given moment you will get a pigment which will give all the tones and leave the whites clear, which is what you require. Should extra brilliancy or more vigour be necessary, add one drop of the gold size and less of the oil, but the brush should remain clean, and if you make a mistake, simply wipe off the picture with a rag moistened with benzoline, wash the print with soap and water, and start afresh. This may be done even after the print is dry. A little time and practice is required in order to acquire the "touch" in pigmenting, but as one bromide will serve as long as the paper will hold together, the expense of waste material is negligible.

### Red Tones on Sulphide-Toned Bromides.

The thiocarbamide bath (says Mr. R. E. Blake-Smith, in writing in "Photography," on the method of further toning a sulphide-toned print with gold) is the bath I myself consider to be the best for complete toning, for the brightest red can be obtained by its use. It is best to have three stock solutions:—

1. Gold chloride .....	15 grs.
Water .....	7½ ozs.
2. Thiocarbamide .....	50 grs.
Water .....	7½ ozs.
3. Sulphuric acid (conc.) .....	½ oz.
Water, to .....	20 ozs.

In making up the last solution, the sulphuric acid should be added to about 15 ozs. of water, and then be made up to 20 ozs. with more water. Practically any acid can be used, but sulphuric acid will, I think, be found the most convenient. Solutions of citric acid do not keep well, as a mould grows therein very readily.

To make up the toning bath we take:



No. 1 .....	½ oz.
No. 2 .....	½ oz.
No. 3 .....	½ oz.
Water, to .....	5 ozs.




I think the above is about the best concentration, but No. 1 and No. 2 can be reduced to ¼ oz. each. No. 1 should never exceed No. 2 in amount. As in the case of the sulphocyanide bath, the light parts

are, as a rule, toned to their final colour rather before the darker ones, and so I do not advise this bath for partial toning. A solution of a soluble sulphide seems to have no effect on a print toned with this thiocarbamide solution. This means that all the replaced silver is dissolved away. There will come a time when the thiocarbamide solution will have taken up as much silver as it can hold, if a sufficient number of prints are treated with the same bath. In actual practice the bath should always be thrown away considerably before this point is reached, and a fresh one made up. I have not accurately determined how great a surface of paper it is safe to tone with a given quantity of the solution. For the present I would advise that at least an ounce be allowed for every quarter-plate print. This would make the cost of toning a 12 x 10 print in this manner work out at about 3d.

## New Books.

"Die Binokularen Instrumente." (Binocular Instruments.) By Dr. Moritz von Rohr. Berlin: Julius Springer. 6s.

This monograph on the theory and history of binocular instruments is another of Dr. von Rohr's welcome and characteristic contributions to the literature of optics. Consisting of some two hundred and twenty pages, it bears convincing evidence of the most thorough and painstaking research in English, French, and German literature, the results of which are presented to the reader in a most clear and striking manner. It is, in fact, a model of what such a contribution should be. Dr. von Rohr treats his subject under three heads—*theoretical, historical, and systematic*—the latter consisting of a classification on original lines of the various forms of apparatus dealt with in the historical part. The whole concludes with a very copious and invaluable bibliography of the subject of some twenty pages in length, arranged according to authors. The first part of the book, dealing with the theory of binocular instruments, commences with a setting-out of the conditions which must be satisfied for the true pictorial reproduction of perspective in monocular vision. Passing on to the consideration of binocular vision, the author gives us a strikingly novel and abstract analysis of the varieties of vision obtained by the use of optical instruments. This classification is effected in a simple way by considering how the eyes of an observer are projected into the object-space by optical systems. To take a concrete case, a photographic lens can be made to project a real image of a landscape, which may be viewed binocularly by an observer placed at the necessary distance behind it. Now what Dr. von Rohr does is to imagine the eyes of the observer to be projected by the lens into the space between the lens and the landscape—the object-space—and then consider the disposition of the eye-images thus obtained with respect to the landscape. Obviously in this simple case the eyes of the observer arranged thus  would project thus  with a mirror reversal. In the case of any optical system thus operative for both eyes it is clear that the latter must be projected coherently—i.e., as a whole—a disposition termed "orthoptic" by the author.

When, however, each eye is fitted with a separate instrument, and "if, as before, one now projects the organ of vision  into the object-space, there is no longer any necessity that it shall be projected as a coherent whole, in which the object-eyes of themselves obtain their natural orthoptic setting. If one supposes that the eyes of the observer are inverted by each of the two instruments, then both the natural arrangement  and the crossed arrangement  can occur. The first possibility is realised in the double telescope and the binocular microscope. The second possibility points to a depth arrangement, which, with a simple system inverting the visual apparatus as a whole, is unthinkable, since such apparatus is not forthcoming in nature. Following the analogy of the consequences of the *orthoptic* disposition of the eyes, with this new *chiasmodic* disposition one will expect an unusual depth arrangement, and one is not deceived in this anticipation." In these words is the consideration *inter alia* of pseudoscopic vision introduced. A simple example of what is thus contemplated by the author is the one in which each eye is fitted with a simple reflecting reversing prism, when, as is well known, rays from near points enter the eyes with less



divergence than those from more distant points, with the result that the depth order is reversed and pseudoscopic vision is obtained.

An inquiry as to the possibilities of stereoscopic vision with ordinary stereograms leads to the conclusion that "to the observer looking with like directed eye-axes, orthocentrically arranged, half-pictures offer an orthomorphic picture-space, and chiasmocentrically arranged half-pictures offer a pseudomorphic picture-space, quite independently of how the stereogram is held, since it depends, not upon right or left, but upon whether the necessarily orthopic eye-setting of the observer is presented to an orthocentrically arranged, or a chiasmocentrically arranged stereogram."

We have said sufficient, we take it, to indicate the author's method of treatment, and the remarkable generalisations in which it results.

The historical section of the book, which will probably most commend itself to the majority of its readers, is illustrated with over eighty figures. It commences with a description of the Galilean binocular of Cherubin d'Orleans, with an interocular adjustment, and that remarkable anticipation of the modern stereoscopic range-finder described in Smith's "Compléat System of Opticks" (1738)—a pair of ordinary drawing compasses used to give a stereoscopic pointer of any required length to reach out to an object at a distance; and finishes with an account of Groussilier's range-finder, which the firm of Zeiss has done so much to develop.

Dr. von Rohr's book must, in our humble opinion—such is the completeness and thoroughness of the treatment—establish itself as a classical contribution, which no one in the future, interested in the subject dealt with, will be able to dispense with. Indeed, so well has the author reaped that we shall have nothing but pity for the gleaner, who in the future essays to follow him in the hope of picking up any considerable number of ears of corn left by the way.

F. J. C.

"Camera Work." No. XXI. New York: Alfred Stieglitz.

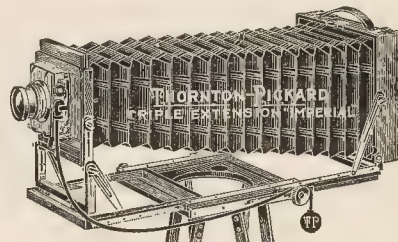
The last number of "Camera Work" is confined to the pictures of A. L. Coburn, most, if not all, of which are known to our readers who have visited the London exhibitions. An appreciation which accompanies them informs us that black and white has lost all charm for Mr. Coburn, who is now exposing colour-plates upon actresses in gorgeous costumes and jewels, and upon Mr. Shaw (!). The article adds: "He informs us that many of the pictures he has obtained are great." Another article, unsigned, deals with the question, "Is Photography a New Art?" It has cunningly devised premises to its arguments, one being the admittance of dancing as a fine art. Of course, this leaves the door quite sufficiently wide open to let photography creep in behind. The article does not carry conviction, and a painter would find his own art entirely misrepresented. Mr. J. T. Keiley contributes a "Dream of Beauty," commencing with the word "and." The best reading is an excellent article on Donoghue the sculptor, by "S. H." But what it does in "Camera Work" is a mystery.

## New Apparatus, &c.

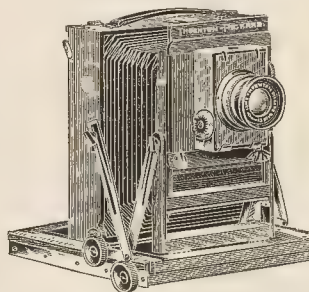
Imperial Triple-extension Camera (1908 model). Made by the Thornton-Pickard Manufacturing Company, Limited, Altrincham, Cheshire.

The Thornton-Pickard Company, who can fairly claim to have been the pioneers in the manufacture of tourist cameras of the modern type, are to be congratulated on the new model of the instrument which they call the "Imperial Triple-extension," and issue at the popular price of 70s. in the half-plate size, complete with lens, shutter, tripod, and one dark slide. Those whose recollection goes back to fifteen or more years ago will remember the kind of apparatus which a sum even twice this amount would purchase. Such movements, which are now obtainable on the camera before us, could not then be had, even on the most expensive types of apparatus. Modern machinery and a large production have, however, so altered the manufacturers' conditions that a camera produced at a low retail price compares most favourably with the instruments of the higher order, and in this respect, too, the Thornton-Pickard Company have been quick in keeping abreast of the tendency of the trade towards a cheaper class of apparatus, while, on the other

hand, they have placed all their resources in high-class camera building at the disposal of those whose purses are not equal to the demands of the more highly-finished pieces of apparatus. We have reviewed most of the Thornton-Pickard introductions as they have come upon the market, and therefore we can appreciate as well as anyone the points in which the firm has advanced its manufactures from year to year. In the present instance the new model has all the movements which are expected in a camera of the triple-extension type, and, indeed, several which are rarely obtainable even in an instrument costing double the price. As now made, the camera is provided with a rack additional to the two on last year's model,



so that the user starting from the position at which the camera is opened can rack the front forward in the ordinary way to the extent of about 16in.; he can then bring into action a second rack, moving the back to the rear, and obtain the double-extension of the instrument to no less than 22in. Finally, for use with wide-angle lenses, a further rack is provided by which the back of the camera is brought forward so that the distance from the lens flange to the plate is just under 5in. Throughout these movements the user is not left to his own judgment as to whether the plate is square with the camera front. That is settled for him by the manufacturer, and thus provides for the greatest advantage being taken of the modern flat-field lens. It should be mentioned, too, that so well is the camera contrived that even at the short focus great rise of front

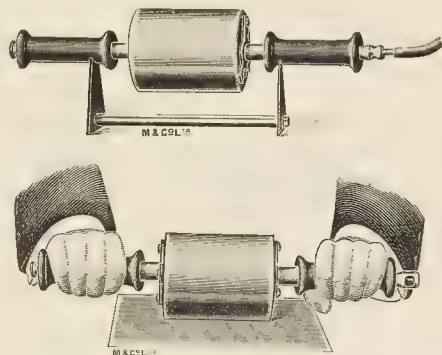


can be obtained, and this without any cut-off from the bellows. The point is of importance, because it may easily happen in a less perfectly constructed camera that, while ample rise is provided, it is rendered useless by the internal projection of the bellows' folds. In other respects the fitting of the camera calls for the same commendation which we have been able to extend to it on previous occasions. The nicety with which the brass fittings are rounded instead of being left with sharp corners is a minor point, but, nevertheless, one which makes for comfortable working, and we can honestly describe the instrument as one which is easy of use, for the amateur as well as the professional for that matter, and certainly easy for the dealer to sell. The price of 70s. includes the Thornton-Pickard "Rectoplanat" lens, whilst again at 75s. is fitted with a Beck symmetrical, whilst again at 80s. a Thornton-Pickard "Pantoplanat" is fitted. In each case the outfit consists of a triple-extension camera with turntable top, time and instantaneous shutter, threefold stand, and one dark slide.

Marion's Hot Roller-Squeegee for Dry-Mounting. Sold by Marion and Co., Ltd., Soho Square, London, W.

In this apparatus Messrs. Marion have provided an alternative to the machine press for the now widely adopted dry-mounting pro-

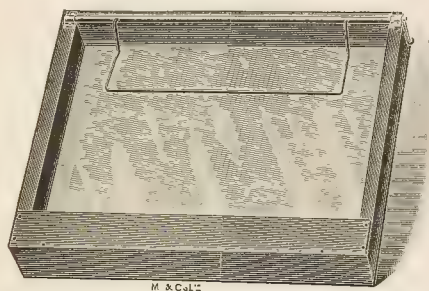
cess. The "squeegee" consists of a heavy metal roller, with polished nickel surface and gas-heated from the inside. The roller is guided over the print by the pair of thick wooden handles, and when not in use is kept on the stand provided with the apparatus. The gas supply is adjustable to give a constant heat, and so long as the roller is kept going pretty well all the time its action is quite even. The



apparatus is certainly a convenient means of carrying out the dry-mounting method, and it may equally be used for cementing celluloid facings to prints, etc., by the hot-rolling method already in vogue. The three sizes of roller (5in., 7in., and 10in. in width) cost 27s. 6d., 35s., and 47s. 6d. respectively, which prices include the stand and two zinc plates of appropriate size.

The "Blackall" Developing Dish. Made by Marion and Co., Ltd., Soho Square, London, W.

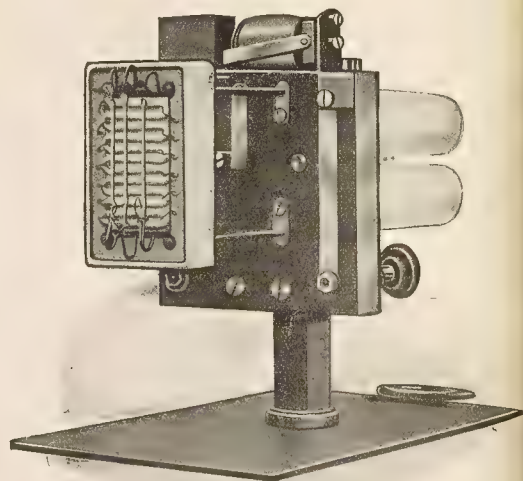
This dish is made with the special object of facilitating the handling of large plates, an end which it achieves in two ways. It is made with a well and glass bottom, so that the negative can be examined without having to remove it from the dish; and secondly, there is provided a plate-lifter by which, on the conclusion of development, the plate is raised from the dish and readily removed. The plate-lifter has two practical features about it which call for com-



mendation. It runs the length of the plate, exerting an equal thrust on the whole plate, and thus obviating the fracture which can easily be caused by suddenly raising a large plate from one point. In addition to this, the bearings in which the lifter moves are disposed on the outside of the dish away from contact with the developing solution. The dish is strongly made in wood, the joints and body are cemented water-tight, and altogether it is an article eminently fitted for regular practical use, the sort of appliance, in short, which one usually has to get made oneself, because there is nothing on the market like it. The three sizes in which the dish is made are named Nos. 1, 2, and 3. No. 1 (5s. 6d.) takes three half-plates; No. 2 (7s. 6d.) holds one 12 x 10 or two whole-plates, and No. 3 (10s.), takes a 13 x 12 or 12 x 10.

THE A. E. G. PROJECTOR NERNST LAMP.—Since reviewing the lamp some weeks ago, when we were able to speak favourably of it, we have had sent to us an illustration of the lamp, which may appropriately supplement the previous reference, inasmuch as it is almost exactly one-half the actual size of the lamp. The latter

measures over all 8in. by 4½in. by 6½in. The A. E. G. English Manufacturing Company, Limited, 4 and 5, New Compton Street, Charing Cross Road, London, W.C., will send full particulars of



the lamp on application. The new introduction certainly offers the advantage, for printing and enlarging purposes, of great power and steadiness.

ART MOUNTS.—A series of art-mounting papers in a variety of surfaces and substances are supplied by Messrs. F. E. Jones and Co., 22, Gray's Inn Road, London, W.C., to the number of about a score. The book of numbered specimen sheets should be applied for and preserved at hand for reference, since it shows at a glance the selection of textures and colours available. The mounts are supplied in thick and thin substances on sheets 25 by 20½, at 8s. and 4s. per quire respectively.

#### CATALOGUES AND TRADE NOTICES.

A NEW MODEL of projection lantern has been brought out by Messrs. Bausch and Lomb, and is described in a circular just issued by Messrs. A. E. Staley and Co., 19, Thavies Inn, Holborn Circus, London, E.C. The lantern is of a very solid lathe-bed construction, yet is lighter and lower in price than the firm's previous lanterns. It is adaptable to microscopic projection.

MESSRS. WILFRED EMERY, LTD., of 89, Cricklewood Broadway, London, N.W., send us their latest price list for printing, developing, toning, enlarging, etc., for both amateurs and the trade. The prices are moderate, and the quality of the work eminently satisfactory. The firm also undertake the repair and exchange of cameras, and also supply second-hand cameras at low prices.

WHAT TO WEAR TO THE STUDIO.—"There is a tremendous amount of ignorance on the subject of colours. Very frequently a woman wears a gown of a certain colour, yellow, for instance, expecting it to take light, when it takes dark, and is, consequently, disappointed in the result," says a photographer in the "New York Sun." "White is always effective, and takes beautifully, especially for dark background effects. But light blue, pink, or cream are preferable even to white, for the reason that while they take light there is more detail and more character in the picture."

"If possible, soft, clinging effects are to be preferred to any material that presents a stiff appearance, and starchy effects should be tabooed entirely."

"Nowadays nearly every photographer has on hand lengths of soft, clinging material for drapery purposes when his subjects present themselves with some absolutely impossible frocks and when he can effect the substitution without hurting their feelings."



## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

#### FRIDAY, JANUARY 31.

Cardiff Photographic Society. "A Collection of Slides." S. C. Fox.  
 Dunbridge Wells Amateur Photographic Association. Annual Meeting.  
 Paisley Photographic Society. Rotary Carbohydrate Paper.  
 Monday, February 3.  
 Bedford and Forest Hill Photographic Society. "Carbon." The Autotype Company.  
 Southampton Camera Club. Lecture Competition.  
 Bradford Photographic Society. "Yorkshire—Historic and Picturesque." George Hepworth.  
 Scarborough and District Photographic Society. Y.P.U. Lantern Slides.  
 Harrow District Photographic and Scientific Society. "Sewage and Sewage Disposal." C. Sordes Ellis, F.I.C., F.C.S.  
 Kidderminster and District Photographic Society. "Wild Life." C. A. Allen.  
 Lancaster Photographic Society. "Time Development."  
 South London Photographic Society. Rotary Carbohydrate Paper.

#### TUESDAY, FEBRUARY 4.

Royal Photographic Society. "The Oil-printing Process." John H. Gear, F.R.P.S.  
 Hanley Photographic Society. "Platinotype." Rev. C. F. L. Barnwell.  
 Keighley and District Photographic Association. Y.P.U. Lantern Slides.  
 Rotherham Photographic Society. "A New Carbon Paper." W. D. Welford, F.R.P.S.  
 Stafford Photographic Society. "Flashlight Photography." S. T. Davies.  
 Hackney Photographic Society. Annual Concert.  
 Sheffield Photographic Society. "The Dales and Coast of Yorkshire." Godfrey Bingley.  
 Manchester Amateur Photographic Society. "Tank Development." R. O. Gilmore.  
 Staines and District Photographic Society. "Enlarging on Various Grades of 'Rotograph' Bromide Paper."  
 Sutton Photographic Club. "Rambles with the Camera."

#### WEDNESDAY, FEBRUARY 5.

Coventry Photographic Club. Judging No. 1 Winter Competition.  
 Leeds Camera Club. "Genre and Figure Studies." T. Lee Symms, F.R.P.S.  
 Woodford Photographic Society. "The Romance of Insect Life." F. Martin Duncan.  
 South Suburban Photographic Society. "Afar in the Fatherland." W. L. F. Wastell.  
 Borough Polytechnic Photographic Society. "The Lumière Autochrome Plate." W. Page.  
 Bristol Photographic Club. "Marine Photography." F. J. Mortimer, F.R.P.S.  
 Central Technical College Photographic Society. "Gum-Bichromate." D. R. Pincock.  
 Mill Camera Club. "Prize Slides." "District Times."  
 North Middlesex Photographic Society. Lantern Slide Competition.

#### THURSDAY, FEBRUARY 6.

Blenheim Club. "Memories of a Marshland Minister." (Ely Cathedral).  
 Bath Photographic Society. "Pictorial Photography." W. Rossiter.  
 Liverpool Amateur Photographic Association. "Oil Printing." Chas. F. Stuart.  
 L.C.C. School of Photo-Engraving and Lithography. "Electric Light and Motors as used by Photo-Engravers and Printers." A. C. Jolley.  
 Worthing Camera Club. Rotary Carbohydrate Paper.  
 Nottingham Camera Club. "Autochrome Plates." R. Child Bayley.  
 Handsworth Photographic Society. "Landscape Enlarging with the Introduction of Clouds." E. G. Collins.  
 Hull Photographic Society. "Platinotype." Demonstrated. Rev. Joseph Bealand.  
 Chelsea and District Photographic Society. "Figure Study." E. T. Holding.  
 Rugby Photographic Society. Royal Photographic Society's Affiliation 1907 Prize Slides.  
 Queen's Park Amateur Photographic Association. "City and Night Photography." Robert Gracie.  
 Midlothian Photographic Association. "Printing in Gaslight Papers." J. B. Johnston.  
 Wimbledon and District Camera Club. "Colour Photography by the Pinatype and Autochrome Processes." W. H. McMillan and Dr. J. H. Wilson.  
 Tunbridge Wells Amateur Photographic Association. "A Chat on Impressionism."  
 Richmond Camera Club. "A Visit to Holland." E. Fincham.

### ROYAL PHOTOGRAPHIC SOCIETY.

Meeting held Tuesday, January 28, the president (Mr. J. C. S. Mummery) in the chair.

Mr. Frederick H. Evans delivered a lecture in reference to the opening of an exhibition at the rooms of the society of examples by himself of the multiple mounting of photographs. A review of the exhibition itself appears on another page. Mr. Evans dealt first with the correct placing of a print on the mount irrespective of the use of several mounting papers. The position in which the print was placed by professional mounters was, he pointed out, the centre of the mount, but it was a bad position, because it made the print appear as though actually dropped below the centre. There was a correct position for it, which varied with the shape of the mount and the particular effect which it might be desired to emphasise, but a good rule was to leave more space below the print than above it, and about the same space on each side as that above the print.

The lecturer handed round examples, which clearly demonstrated these points. In a brief reference to the frame, Mr. Evans said that choice should be made as to whether frame or mount was to be responsible for the decorative presentment of the print. If mounting was to do it then the frame should be simple, and, similarly, if elaborate framing was adopted then the mount should be of the simplest description. Speaking of the tone of mounts, whether light or dark, the lecturer showed examples of the way in which a light mount enhanced the dark tones of a print, and showed comparative examples, proving the greatly dissimilar effects obtained with identical prints from the suitable choice of the mounting papers. He also exhibited prints differing in contrast, which had been equalised by the selection of different mounting schemes. A full and useful description of his methods would require the study at the same time of the sixty examples shown at Russell Square, and those who are interested in the matter should obtain the full text of the paper when it is reprinted in the society's journal of February 16, and study the exhibition in conjunction with it.

Turning to practical methods, Mr. Evans said his own plan was to cut up a goodly quantity of the mounting papers into pieces of convenient size and keep them sorted out into the various tones and colours, such as grays, light greens, dark greens, and so on. When selecting mounting papers for a print the latter was held in the hand and a mounting paper placed behind it, roughly registering one upper corner of the print with that of the mount so as to produce a narrow border of mounting paper. In the same way a further mounting paper was placed behind the first, and in this way—holding the mounts in the hand, a pretty good idea could be obtained of the various effects. When it came to actually making the mount, Mr. Evans attached the mount by the two top corners to the first mounting paper with a good mountant of the dextrine class. The mounting paper was then trimmed down equally all round with a guillotine, taking special precautions to preserve absolute straightness of trimming. The print itself also should be trimmed exactly square to start with. In this way the mount was built up behind the print. As regards the selection of the papers, nothing but the worker's own practice and taste would tell him what to do, but one obvious rule derivable from Mr. Evans's examples was to avoid repeating borders of equal width round the print. The width of these latter should be contrasted and adjusted to emphasise or to diminish certain effects in the print. The stronger colours should only be used in very narrow bands in the mounting scheme, and the most useful series of mounts were those which contained a variety of low tones, such as grays, dark and light browns, greens, and blues. An important matter in making use of the mounts was the alteration in tone which was produced by placing, say, a light band between two dark ones; the effect was different from that obtained when not thus bordered.

Mr. Evans's lecture amounted to a direct demonstration of his methods, and an interesting discussion followed, in which a number of speakers brought up one or two various points, among which was the fact that all Mr. Evans's prints were on platinotype paper, and that, therefore, he had not found it necessary to use a dry mounting method. In the case of carbon or bromide prints, he considered that dry mounting would be necessary. Most of his own mounting papers were those imported by Lindenmeyer, but other speakers spoke in favour of the art-mounting papers obtainable from Barton's, of Birmingham, and from Houghtons Limited. Another speaker mentioned the automatic Merritt trimmer as excellent for multiple-mounting work. A point raised by another speaker was the inconvenience occasioned by the impossibility of studying the pictures in conjunction with the text of Mr. Evans's paper. Mr. C. P. Butler suggested that the proof of Mr. Evans's article should be available in the exhibition-room during the time the pictures were on view, but it was stated from the chair that the text of the paper would not be so available until its appearance in the "Photographic Journal" for February 16.

### LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.

Ordinary meeting January 23, 1908. Mr. E. T. Wright in the chair. Mr. A. R. Smith passed round a film negative made through a half-tone screen of about 130 lines to the inch, which, when held to the light showed chromatic effect, in some positions almost giving a small spectrum.

Mr. H. C. Rapson, said that when copying pictures with a white border one almost invariably got this effect.

Mr. Teape produced two bottles of pyro developer that were unearthed from the library cupboard on the 16th, and which he had taken away on that date to try. The bottles were only part full, and had had no care whatever bestowed upon them beyond the glass stoppers. The labels showed that they were made on January 15, 1891, and they had been since that date at the meeting room. He had used these upon a number of plates. On bottle No. 1 the formula was:—

Pyro .....	1 oz.
Acid sulphurous .....	1 oz.
Water .....	9 oz. 1 dram.

For his first test he took of the above solution 15 minims, soda sulphite 10 grains, soda carbonate 8 grains, potass. bromide 3-10 grain, water 1 oz. The plate developed in  $1\frac{1}{2}$  minutes to a fine black tone.

Second test:—10 minims of above solution, soda sulphite 8 grains, soda carbonate 6 grains, potass. bromide 3-10 grain, water 1 oz. In this he developed three plates, all of which were a good black.

Yet again he took 10 minims of the old solution, soda carbonate 6 grains, potass. bromide 3-10 grain, water 1 oz. The plate developed in this in just under four minutes and showed a slightly yellow tinge. At the same time it must be carefully noted that here no soda sulphite was used, thus proving at once that this salt has an effect upon the result; both as to time of development and colour of result.

Bottle No. 2 had a solution of

Pyro .....	1 oz.
Soda sulphite .....	4 oz.
Water .....	30 oz.

Of this he took 33 minims, soda sulphite 8 grains, soda carbonate 6 grains, and water to 1 oz., potass. bromide 3-10 grain, and developed two plates. The development was rather slow, being in the first case five minutes, and in the second ten minutes, but the image was of a fine black tone without any tinge of colour, and as a check upon his work he used another plate with freshly mixed developer as follows:—Soda sulphite 8 grains, soda carbonate 6 grains, potass. bromide 3-10 grain, water 1 oz., adding immediately before development of dry pyro 1 grain. Time of development,  $2\frac{1}{2}$  minutes. This plate, though of a good black colour, did not yield so fine an image as did the old solutions.

The results, he thought, were valuable, as they proved that pyro solutions could be kept almost any length of time and still do the work. It should be noted that the bottles were only part full, and not filled to the stopper, as is advised when making solutions with an idea of long keeping.

Mr. Stretton pointed out that the results rather upset the ideas set forth in Messrs. Mees and Shephard's paper as to soda sulphite not having any action upon the developer.

Mr. Teape said it had a very great action.

Mr. Stretton was using pyro developer nearly a year and nine months ago with potass. metabisulphite and got no stain.

Mr. Finlay asked if the bottles had been opened say, once a week, would it not have made a difference? As the opening would have admitted more oxygen, whereas only a certain amount had been corked up, so to speak.

Mr. Human said that when using ortol the addition of soda sulphite had, he found, a very marked effect, slowing down the time of development to as much as ten times, according to the amount of sulphite added.

Anyone interested may see the bottles of developer and examine the results at the New Rooms, Ye Olde Napier Tavern, 25, High Holborn, W.C., at any meeting after February 6, 1908.

**STAINES AND DISTRICT PHOTOGRAPHIC SOCIETY.**—At the annual general meeting, held on January 22, the reports presented by the energetic secretary, Mr. C. J. Fox, and the treasurer on the completion of the society's first year, were highly satisfactory. After the election of officers an exhibition and competitions for members were held, resulting as follows:—Class A.—Contact Prints: 1, Mr. Hoare;

2, Mr. Rule; 3, Mr. Leake. Class B.—Enlargements: 1, Mr. Fox certificate, Dr. Thompson. Class C.—Lantern Slides: 1, Mr. Neaves; 2, Mr. Rule; 3, Dr. Thompson. Both competitions and exhibition produced some excellent pictorial work from the members, prominent among which was work of particular merit from Mr. Rule, Mr. Fox, and Dr. Thompson, the last-named of whom sent in a fine exhibit of telephoto work with the Adon lens.

**WOOLWICH PHOTOGRAPHIC SOCIETY.**—At the meeting, held January 23, a paper was read by Mr. G. T. Gale on "Jenolan Caves of Sydney, N.S.W."

**CENTRAL TECHNICAL COLLEGE PHOTOGRAPHIC SOCIETY.**—On Wednesday, January 22, Mr. Jackson, of the Rotary Photographic Company Ltd., gave a very able and interesting demonstration of "Carbograph," the new enlarging carbon tissue, which was greatly appreciated by those present.

**CROYDON CAMERA CLUB.**—Annual meeting. The report shows a very satisfactory state of things. Since the club's removal to more commodious and more expensive premises, it has required not a little skill and contriving to make both ends meet. Not only has the hon. sec., Mr. H. M. Bennett, succeeded in doing this but he was able to announce a record cash balance in hand of nearly £40. Thanks largely to the untiring energy of a small band of workers, the recent exhibition shows a profit of about £15. Mr. A. E. Isaac, the popular president for the year, retires, his place being taken by Mr. J. M. Sellors, unanimously elected. Owing to pressure of business Mr. F. W. Hicks relinquishes his post of treasurer, an office he has filled remarkably well. Mr. Alexander succeeds him, and Mr. Bawcomb becomes assistant honorary secretary.

**SOUTHAMPTON CAMERA CLUB.**—Mr. Arthur Marshall gave his lecture, entitled "Some Spanish Scenes and People, and a Bull Fight," on Monday evening last, before a crowded audience.

The lecturer at the outset described some interesting features to be seen at Biarritz, and gave his experiences of the railway journey over the Pyrenees. He referred to the somewhat tedious railway travelling, which, however, enabled him to secure some excellent photographic panorama views of the country scenery from the carriage window. Mr. Marshall then gave particulars of his impressions at San Sebastian, and, with some excellent slides, he pointed out many of the architectural features, including the palatial marble buildings which are so noteworthy. Burgos was also referred to, and the picturesque slides of the market scenes and the Old Gateway were lucidly described.

Madrid proved rather disappointing to the lecturer from a picturesque standpoint, and the general impression conveyed was uninteresting. Some interesting types of people seen in the capital were illustrated, and the allusions to the difficulties encountered in securing these photographs were extremely amusing. Mr. Marshall, in conclusion, gave a vivid account of a bull-fight he witnessed, and the slides illustrating this form of Spanish entertainment proved convincing proof of the brutality which was correctly termed "a real tragedy in three acts." A hearty vote of thanks, proposed by Mr. A. E. Henley and seconded by Mr. S. G. Kimber, was carried with acclamation.

**A LIMERICK PRIZE-WINNER.**—Mr. Arthur Squibbs, photographer, Napleton House, Warren Street, Tenby, who three weeks ago was awarded a first prize of £57 18s. in the "News of the World" Limerick Competition, last week won a second consolation in the same paper.

**THE DRESDEN INTERNATIONAL EXHIBITION.**—The following gentlemen have consented to serve on the English Committee of the above exhibition:—A. H. Blake, Arthur C. Brookes, Geo. E. Brown, C. P. Butler, F. Martin Duncan, A. Horsley Hinton, F. J. Hollyer, F. J. Mortimer, Rev. F. C. Lambert, J. C. S. Mummery, Furley Lewes, H. Snowdon Ward. The Honorary Secretary is Mr. E. O. Hoppe, 10, Margravine Gardens, Baron's Court, London, W.

"A SCAMPER THROUGH HOLLAND" is the title of a lecture by Mr. W. F. Slater, which, accompanied by 152 lantern slides, the Zealand Steamship Company, of Electra House, Finsbury Pavement, London, E.C., will be pleased to lend to photographic societies and others free of charge.



## Commercial & Legal Intelligence.

**EASTMAN KODAK COMPANY OF NEW JERSEY.**—The usual quarterly dividend of  $1\frac{1}{2}$  per cent. (being at the rate of 6 per cent. per annum) on the outstanding preferred stock, and of  $2\frac{1}{2}$  per cent. (being at the rate of 10 per cent. per annum) upon the outstanding common stock of the Eastman Kodak Company of New Jersey, will be paid April 1 to stockholders of record on February 29, 1908.

**PHOTOGRAPHERS FINED.**—David Selman and Emanuel Harris, engaged by a "free portrait" canvassing firm, were summoned at the Bristol Police-court last week, the former for travelling without having paid his fare, but with a season ticket made out in the name of Harris, who was known to have used the same ticket the evening before, and the latter for aiding and abetting him in so doing. They were fined forty shillings and costs each, a guinea solicitor's fee being allowed the defendant Harris.

**THE AFFAIRS OF A DERBY PHOTOGRAPHER.**—On Saturday a meeting of the creditors of Frederick Vogel, photographer, residing at 16, Portland Road, Nottingham, and lately carrying on business at Jackson's Chambers, St. Peter's Street, Derby, was held at the office of the Official Receiver in Bankruptcy at Derby. The gross liabilities amount to £268 16s. 9d., of which £250 14s. 9d. is expected to rank for dividend. The assets are estimated to produce £91 18s., the deficiency being £158 16s. 9d. The bankrupt, who was formerly a canvasser for a New York firm, principally attributes his loss to a stock of enlarged photographs not being taken up by customers which, including cost of soliciting orders, came to £250. No resolutions were passed, and the estate remains in the hands of the Official Receiver, Mr. F. Stone, Full Street, Derby.

**SATINO, LTD.**—The affairs of Satino, Ltd., were inquired into by the Official Receiver at the Offices of the Board of Trade, in Carey Street, on January 22. Mr. Nunn, a director of the Company, and Mr. Pepper, a former director, were present.

The Official Receiver asked Mr. Nunn to explain why no statement of affairs had been filed. It was a very serious default, and would be reported to the Registrar.

Mr. Nunn: I have done my best.

The Official Receiver: It is through you that the creditors are wanting their debts paid and you should make an effort when you have brought things to such a grievous condition.

Mr. Nunn: I have made every effort.

The Official Receiver: I don't think you have. It is two months since the order was made, and the responsibility for the condition of the books must largely rest with you.

In relating the history of the Company, the Official Receiver said it was floated in February, 1907, with a capital of £500 in £1 shares. The object was to take over the photographic department of a business with which Mr. Nunn was connected. Mr. Nunn was appointed experimental photographer and drew £2 a week. The goodwill purchased by Satino, Ltd., consisted of an agency for the sale of certain German photographic paper in this country. Previous to the flotation of Satino, Ltd., the Nunn Company issued some debentures covering the whole of the stock purchased by the new Company. The debentures were now held by Farrow's Bank, who had appointed a Receiver. The realisation was not likely to produce sufficient to pay off the debentures. The total unsecured liabilities were £1,000.

Mr. Nunn, in explaining the position of affairs to the creditors, said if it had not been for the bad season of 1907 the Company would have done good business. They were using a sun-ray medium for the photographic work, and the dull summer rendered it useless. If the business could be tidied over to next year he believed it would do well. Mr. Nunn suggested the formation of a new concern, in which the creditor of Satino, Ltd., would be allotted shares, and in which it might be arranged that the debenture holders in Satino should hold ordinary shares instead of debentures.

The representative of Messrs. Johnson and Son, manufacturing chemists, remarked that this proposal seemed to be the creditors' only hope.

No resolution as to the appointment of a liquidator was passed, and it was left to Mr. Nunn to develop his proposal.

## Correspondence.

\* \* We do not undertake responsibility for the opinions expressed by our correspondents.

\* \* Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

### USEFUL AWARDS AT THE LONGTON EXHIBITION.

To the Editors.

Gentlemen,—It may interest your readers to know that one of the features of the above exhibition will be another departure from the conventional plaque and medal as awards.

The judge is to have placed at his disposal twenty-four awards which will take the form of ornamental vases or other artistic and useful local pottery productions in china or earthenware, for which this district is noted.

This course has been adopted in deference to suggestions from lecturers at the society's meetings, who, having in their possession a superfluity of medals obtained at various exhibitions, expressed a wish that something more useful might be awarded as prizes.

The committee hope that the change will meet with the approval of exhibitors generally, and that it will add to the success of our show.—I am, yours faithfully,

E. CARRATT.

(Member of Exhibition Committee.)

### THE KALLITYPE PROCESS.

To the Editors.

Gentlemen,—An article by me published in the October, 1906, issue of the "Photo Era," the title "The Kallitype Process," you were good enough to reprint in a later issue of your journal. In the article as originally published was a regrettable error, which, of course, was carried along to your reprint. The fact that my process has still further exploitation in the latest "B.J." Almanac prompts me to thus communicate with you in the effort to correct the mistake. The original typographical error I sought to correct in a later number of the "Photo Era," but in making the correction still another blunder was made, therefore I thought it about time to give it up.

The mistake occurs in prescribing a *drachm* of oxalic acid in the diluted developer where a *grain* is what should have been. The corrected formula for developer stock solution should read as follows:—

Distilled water .....	1 oz.
Silver nitrate .....	40 gr.
Citric acid .....	10 gr.
Oxalic acid .....	8 gr.
Phosphate of soda .....	$1\frac{1}{2}$ gr.

When thoroughly dissolved, decant, or filter through a piece of fine linen.

To develop, take one (1) drachm of stock solution to every seven (7) drachms of water.

Worked as it should be, this process gives beautiful platinum-like prints, but the error in formula would result in absolute failure—flat, faded pictures, fit only for the waste basket.—Very truly yours,

129, Bird Street, Dorchester, Mass., U.S.A.

January 15, 1908.

JAMES THOMSON.

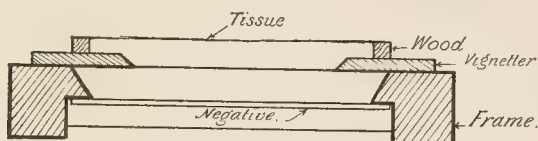
### PRINTING VIGNETTES BY ELECTRIC LIGHT.

To the Editors.

Gentlemen,—I have tried several ways of printing vignettes by this method, but only find three satisfactory, which I have much pleasure in explaining for the benefit of my fellow-readers of the "B.J." To print vignettes quickly, and at a distance of about 10 in. or more from the electric-arc lamp, I found the best method was to make several good vignettes on P.O.P. by exposing same to daylight in the printing frame behind a piece of clear glass with ordinary vignetter fixed in front. I then toned these to a good

colour and fixed them. When dry I copied them in the camera to the size required, making as good a negative as possible, with full density and clear vignette in centre, then placed vignette negative in printing frame, film side in, and next adjusted the negative and paper to be printed from and exposed. I recommend this method as the ordinary celluloid vignettes sold on the market will not stand the heat, and cockle up in all directions. Glass negatives will stand an enormous amount of heat before cracking. At 10 in. distance from lamp I have not had a single one cracked yet. This method prints in about the usual time. You can also use paper vignettes made the same way, only the grain of the paper takes much longer to print as compared with clear glass.

The next way of printing is by placing the ordinary vignetter in front of the printing frame, containing negative and paper, and fixing a piece or two of tissue paper or thin linen in front of this, supported on two pieces of wood about  $\frac{1}{4}$  in. thick, fixed to vignetter, thus:—



The frame need not be moved round, and it prints in about ten minutes. At 10 in. from the arc lamp you can get a circle of six half-plate frames, and work them three deep, making eighteen frames round the light.

Another method is to place the ordinary vignetter in front of the frame containing the negative and paper, to hold same to lamp, and to turn it continually round. This method prints in about four minutes, and any boy can work it. Any further particulars which any reader would like I shall be most pleased to give.—Yours truly,

THOMAS E. STAGG.

The Imperial Postcard and Printing Co.,  
128, Bromley Road, Catford, London, S.E.

#### STAMPING MOUNTS, ETC.

To the Editors.

Gentlemen,—A correspondent inquires as to the way to use a punch for stamping mounts, etc. The following is the best way:—On a smooth slab of stone or metal lay a thin card, on that the mount, and hit the punch with a wooden mallet instead of a hammer.

Manchester, January 25, 1908.

D. B.

#### THE "B.J." IN ASIA MINOR.

To the Editors.

Gentlemen,—We do not know that it will interest you, but might mention that this morning we had an inquiry in answer to our advertisement in the "B.J." from Turkey, in Asia. We thought that you might like to mention this in your columns, as we do not suppose that there are many who know that your journal reaches quite so far as this. We, at any rate, did not know it.—We beg to remain, faithfully yours,

A. KING AND SON.

37, High Street, Littlehampton.

January 27, 1908.

#### PHOTOGRAPHERS AS PROFESSIONAL MEN.

To the Editors.

Gentlemen,—Anent your article in last week's "Journal," "Should the Photographer Pose as a Professional Man?" my reply as one is a decided Yes, and I feel assured that the majority of photographers will join with me in this opinion. Something certainly ought to be done to raise the standing of the photographer, who at present is a kind of pariah and outcast, without status; in fact, the word "photographer" carries with it a sort of stigma, and means social ostracism. Not only many of our leading men but also a number of the rank and file are gentlemen by birth and education, who have soul and ideals in their productions, conveying an atmosphere which proclaims the artist and not the mere money-grubber.

In your issue of the 20th ult. I note a very able article by Mr. C. H. Claudy, in the latter part of which, in "Professional Photography de Luxe," I come across the following paragraph: "There is many a tradesman who loses trade, photographer or butcher." But why class them together? The latter is certainly a tradesman and the former a professional man, with just as much right to use a brass plate as Messrs. Quill and Parchment, and also classed as an artist in the Copyright Act of 1862. Is it not possible to have an Incorporated Society of Photographers, similar to accountants, dentists, etc., thereby weeding out the unfit (of whom, alas! there are far too many) and raising the standard of the profession? If this is impossible doubtless some of your readers can suggest a remedy, or yourselves with your all-powerful journal; but do not, gentle Editors, I beseech you, stigmatise us as tradesmen.—I remain, yours faithfully,

STATTS.

[We shall be glad to hear the views of any other readers. We refer to another aspect of the matter this week.—Eds. "B.J."]

#### CARBON PRINTS ON JAPANESE VELLUM PAPER.

To the Editors.

Gentlemen,—In a recent issue you recommended the use of Japanese vellum paper as a final support in carbon printing under certain circumstances. You also gave the name of the importers of this paper, Messrs. Crompton and Co., who have since written to us in connection with the matter. Owing to the article in question, they have received numerous inquiries from photographers and others, but being wholesalers they do not wish to be troubled with small accounts. We have consequently made arrangements to deal with any inquiries they may receive, and we have selected a suitable paper from their stock, which we are coating up, both for single and double transfer final support, and supplying it at 1s. per sheet, size 29in. x 22in.—With compliments, yours truly,

THE AUTOTYPE COMPANY.

C. Sawyer.

74, New Oxford Street, London, W.C.

January 23, 1908.

#### COPYRIGHT IN POSTCARDS.

To the Editors.

Gentlemen,—Your answer to "Bert Hole," in this week's "Journal," is a most interesting one to many photographers, but I cannot help thinking that you are mistaken. Are we to understand that whenever a person who figures in a postcard purchases one of the said cards, he can stop the producer from publishing any more, and actually compel him to call in those already sold? This seems altogether unreasonable, yet it is practically what you infer by your reply.

These people did not engage "Bert Hole" to photograph them or their farm, but were asked to pose in the picture by him. Would the purchase of one postcard give them the right to stop his sale, and if not, how many must they buy to give them this right? If you are correct in your answer I am afraid half the postcards now on sale may be stopped by any cantankerous person who happens to appear on them and buys the card for one or two pence.—Yours faithfully,

St. Mary's, Isles of Scilly.

January 27, 1908.

C. J. KING.

[Our correspondent must allow us to repeat that the case instanced by "Bert Hole" is a "nice point," and, further, that our reply was advice to our querist as what he had best do in the particular circumstances. Our advice amounted to the recommendation to abstain from contesting the matter and to keep the dispute out of the lawyers' hands. We are quite aware of the rights of the photographer in any view which he may take, but it might be argued, in reference to the farmhouse scene, that the permission to photograph the house with a view to sales constituted a "valuable consideration" to the photographer. Our correspondent might refer to the case of *Stackemann v. Paton*, which involved a nice distinction, such as this, and was fully dealt with in the "B.J." for April 20 and May 4, 1906. There is, of course, no doubt at all that the photographer owns the copyright when there is no sort of payment to him for his work. Our correspondent is arguing too quickly from the particular to the general.—Eds. "B.J."]



## Answers to Correspondents.

*All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.*

*Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.*

*Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., 24, Wellington Street, Strand, London, W.C.*

*For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.*

### PHOTOGRAPHS REGISTERED:—

W. Gaskell, 3, Piercy Terrace, Piercy, Waterfoot, near Manchester: Two Photographs of a Motor-Bus.

**PHOTOGRAPHY IN CAIRO.**—(1) Is there any scope for photography there? (2) Should you think there would be any likelihood of getting a situation as assistant, either to a photographer or photographic chemist or dealer? (3) What is the cost of getting there, say from London? (4) What paper would be best for advertisements there?—E. A. WALES.

(1) Undoubtedly a good deal of business to be done in requisites for amateur photography, and, we should say, in professional portraiture. (2) We can only say that it is possible. (3) Apply to Thomas Cook and Son, Ludgate Circus, E.C. (4) The Cairo newspapers are "Le Caire," "Le Journal," and "Les Pyramides," all of which appear daily.

**WASHING PRINTS.**—Will you kindly inform me (1) how long washing by hand albumen prints should have to ensure permanency, (2) If gelatine chloride prints, toned and fixed in the following bath for fifteen minutes, allowing 2 grs. gold per sheet, will be permanent: Hypo, 5 ozs.; lead acetate, 1 dr.; gold, 4 grs.; water, 40 ozs.?—EN AVANT.

(1) If you mean "by hand" that prints receive fresh water round them as often as every five minutes, one hour's wash—i.e., twelve changes—is ample. (2) The bath is rather weak in hypo; at least three ounces per pint should be used. A better composed bath is that on page 866 of the "Almanac."

**C. H. A. D.**—(1) Can only suggest you apply to Mr. Warwick Brooks, 350, Oxford Road, Manchester. (2) An R.R., with aperture f/8, is quite rapid enough, and covers far better. (3) Your query is altogether too large a question. Each light has its good points. See the recent articles and correspondence in our columns.

**BARYTA PAPER.**—Would you be kind enough to give me a formula of some kind for baryta paper coating? I wish to baryta coat some raw paper, and what suitable dye would you recommend to tint it, of course, like the paper at present on the market?—SAM JONES.

As a rule, the baryta is prepared by treating carbonate of barium with sulphuric acid till there is no longer effervescence, then washing and drying. There should be from 8 to 10 parts of hard gelatine to every 100 parts of baryta, and, of course, the necessary quantity of water. For the colours, alizarine lake is used for the red, Prussian blue for blue, and a mixture of the two for mauve. The quantities depend entirely on the depth of tint required.

**A. CLARKE.**—Thanks for cutting. You see, we refer to the subject on another page.

**INSURANCE OF STUDIO.**—Can you quote me the usual rate for insurance of studio, attached by corridor to house in front, studio being built of brick, wood, and glass?—INSURANCE.

We cannot quote the rate, as we know very little of insurance business, so far as the premiums are concerned. If, however, you inquire of any of the agents for the different insurance companies,

of which there are doubtless several in your town, they will give a definite quotation. The Professional Photographers' Association arranges a special rate for its members.

**COATING MACHINE.**—Will the experimental coating machine, given in the "B.J.," April 26, 1907, p. 314, be suitable for coating sheets of celluloid (instead of paper) with a gelatine emulsion? If not, could you tell me what alterations would be necessary to make it suitable? Is the paper used with this machine in a continuous roll? If so, of course, it would be necessary for the celluloid to be similar.—THOS. J. FAIRFIELD.

It would be quite possible to use the machine for coating celluloid; but sheet celluloid, that is, of the usual thickness of the ordinary cut film, cannot be obtained in rolls. It might be feasible, however, to cement the sheets together so as to form a roll, as is sometimes done in the case of paper.

**PYRO-SODA.**—Some months ago you published a formula for pyro-soda developer, under the heading of "A Pyro-Soda Developer that will keep." I have unfortunately lost the formula. Would you kindly repeat?—R. E. WESTON.

A. Soda sulphite .....	2 ozs.
Potass metabisulphite .....	½ oz.
Pyro .....	160 grs.
Water to .....	20 ozs.
B. Soda carbonate .....	4 ozs.
Water to .....	20 ozs.

Use equal parts of each. This formula appeared in our issue for September 28, 1906. You will find some further notes on the subject in the 1908 "Almanac," page 625.

**TONING BROMIDES.**—Will you kindly, in "Answers to Correspondents," say where I can get mercuric bromide, as per formula (sulphide toning bromide prints), in your issue of January 17? I have applied to two chemists, and neither know nor have heard of it.—OBBO.

You can prepare the solution, as advised by our contemporary, "The Amateur Photographer," from which we quoted, by dissolving 120 grains mercuric chloride, and 120 grains potass bromide, in water, 10 ozs. Forty minims of this solution correspond to 1 grain of mercuric bromide.

**PRICES FOR LANTERN SLIDES.**—I should be much obliged if you would answer in your customary column the two following questions:—

(1) What is the average charge made by professionals for producing lantern slides from customers' own negatives? (2) What would be a reasonable charge for producing lantern slides from book plates and manuscripts, or from original scenes? I am, of course, assuming that only one copy is required of each.—MIDLANDER.

A fair charge is a shilling for each slide, and the same for each negative, when working from a print or other original.

**PROCESS WORK.**—Will you kindly inform me (1) if the line block process (not half-tone) can be worked on a small scale, if you want special apparatus for it, and also if there is a book on the process? If so, kindly let me know where to obtain it, with price of same, if possible. (2) Will you please give me the address of Walter Carson and Sons, manufacturers of Vitrolite, for frosting the glass in studios, as mentioned in the "B.J. Almanac" for 1905?—ZOUCH.

(1) No special apparatus is necessary, beyond a whirler, etching troughs, and inking rollers. You had better get "Photo-Mechanical Processes," by W. T. Wilkinson, published by Hampton and Sons, price 4s. (2) Grove Works, Lombard Road, Battersea, London. S.W.

**GLAZING P.O.P.**—I should be glad if you could give me a method of procedure for glazing P.O.P. prints on glass. I have had them stick badly sometimes, and at other times it has been a pleasure to do the glazing. If you can help me in any way I should be glad.—C. W. WARD.

Your trouble has possibly something to do with the weather. As you say nothing of your procedure we can only suggest that you give the prints ten minutes in 5 per cent. alum solution, after washing from hypo, and a further ten minutes' wash after the alum. You should clean the glass plates with wax solution or French chalk. Possibly the prints had not dried completely when attempts were made to strip them.

**COPYING.**—I have an article of five or six pages in a book which I wish to copy out. Is there any method of transferring it out on

to paper by contact in any way? I want about half a dozen copies and do not care to write it out, it would take too long.—TRANSFERRING.

The most practical method (photographic) is to make negatives, on photo-mechanical plates, and take off bromide or gaslight prints. In our own case we should get a typing office to make two copies, and simultaneously two "carbon" duplicates from each.

**CAMERA OBSCURA.**—Could you kindly give me any information as to the cost (and where obtainable) of a camera obscura? Do you think it would be a paying investment, say at a seaside resort?—SPECULATOR.

We doubt if a camera obscura is regularly made by any firm now. You can occasionally see one advertised in our "Apparatus for Sale and Wanted" column. We believe that a year or two ago Messrs. Penrose and Co., 109, Farrington Road, used to list apparatus of this kind, and you might drop them a line. We can pronounce no opinion as to the paying nature of the business.

**STRIPPING POSTCARDS.**—I have lately tried some new postcards, but find I have trouble in getting same off glass. I use formalin, 3 ozs. to 40 water, and clean glass with benzene and spermaceti. I have enclosed a card, which, although I dried first, I had trouble in getting off. Should be pleased if you can say if cards are at fault.—W. L.

It is scarcely likely that the cards are to blame. Generally 5 per cent. alum solution for ten minutes is sufficient to bring the cards into good condition for stripping, and the results are usually more certain than with formalin. We can only advise you to try again with a good plate-glass. See answer to "Glazing P.O.P."

**L. R. C.**—"Photo-Revue," 118, Rue d'Assas, Paris. The rates will be sent to you on application to the above address.

**SELF-TONING PAPERS.**—Herewith find five self-toning prints, very badly stained. I should esteem it a favour if you will kindly let me know, through your *BRITISH JOURNAL OF PHOTOGRAPHY*, what the spots are and the cause of same, if you think its in the manufacture of the paper or manipulation? They were all fixed in a 10 per cent. hypo bath for ten minutes, and then washed and dried in the usual way.—E. HIGGS.

Quite impossible to answer your questions definitely without more details. A prolific cause of spots on self-toning papers is the use of impure blotting-paper for drying purposes. You can take it for granted that there is a lack of cleanliness somewhere in the treatment of the prints. You should state paper used, and give full particulars of treatment to enable us to suggest the source of the trouble.

**MOUNTING ENAMELLED PRINTS.**—Our business requires us to use a number of enamelled P.O.P. prints, and we want a good means of mounting same. Could you possibly give us a formula for making a solution that we can apply to the backs of the prints whilst they are on the enamel glasses that we could use. We know the difficulty is these solutions are as a rule waterproof, and the prints are wet when put on the glasses, but amongst your numerous correspondents we should like to know if you have found one who has overcome this difficulty. We should also like a good formula for backing dry prints for this purpose. We have one we make, but it is not always successful. If you can enlighten us in any way we should esteem it a favour.—P. H. T.

We doubt if you would find the dry-mounting method too expensive if you have much mounting to do, as the saving in time must be considerable over that taken by other methods. Why not try the secotine method described in our issue of November 29, 1907, p. 911.

**GLOUCESTER.**—We should say there is not much commercial value in a process giving a tone similar to that sent, but there would be for one giving a good sepia or warm brown. There are one or two preparations on the market in the way of warm-tone gaslight-paper developers. Messrs. Griffins make one.

**FLASHLIGHT.**—I have a flash-lamp in which percussion caps are used, but there is a danger of missing fire if the cap is not exactly central, and it is a nagging job to fit the cap. Could I make some caps with a much larger (spread out) charge, so that the chance of not firing would be lessened? 1. What would be a suitable

mixture? 2. Could I make the paper inflammable, like gun-cotton, so that the sparks of percussion would ignite it? Saltpetre burns rather slowly. I ask because the powder I use (Agfa) seems to be harder to set fire to than others, and will not always light from a spark, but once alight the difference in light and freedom from smoke is enormous.—D. B.

1. We cannot recommend you to attempt the manufacture of percussion caps, the fulminates employed are too dangerous to inexperienced hands. Possibly you can obtain larger caps by writing to the manufacturers. 2. Gun-cotton or any similar nitrated compound would certainly explode if ignited with a percussion cap, so we cannot recommend you to try this expedient. A good deal depends on the way in which you arrange powder and cap. If you find out the best way and keep to it you should have no misfires.

**CARBON.**—What is required for the work is a hot rolling-press, with the roller made only sufficiently warm to soften the moistened gelatine, so as to make it adhesive. The roller must not be made hot enough to melt the indiarubber. We do not think you will be very successful with a laundry iron, unless the pictures are small.

**F. HOLLOWAY.**—Thank you. We are using the paragraph.

**AUTOCHROMES.**—(1) Is the Gravier method of developing Autochromes suitable for lantern slides? I gather that unaltered bromide is left in the film. If so, I suppose the slides would be denser than those made in the ordinary way. (2) I suppose M. Gravier's ingenious cover for daylight development is not commercially obtainable.

(1) There is the silver bromide, but in the one or two examples we have made we have not noticed any marked additional density. (2) As mentioned in our issue of January 10, p. 34, from M. Mathieu, 62, Rue des Marais, Paris, price 10fr. 75c. (3) We should say any metal tank is unsuitable for the acid permanganate solution.

**C. W. and Others.**—In our next.

**OPERATOR.**—We should say the business is a genuine one, and not dear at the price. Cannot you arrange deferred payment for the amount by which you differ from the owner?

**STEEL ENGRAVING.**—Is it possible to get a steel engraving done from a cabinet photograph of group, two persons, the size to be 25 x 21 inches? The address of firm doing such work and cost of same would oblige. What kind of enlargement would most resemble a steel engraving?—P. J. S.

What you require is a photogravure plate, which is a copper plate faced with steel. The Autotype Company, the Art Reproduction Co., Plough Court, Fetter Lane, and others, produce such plates in England. The price will depend upon the amount of hand-work there is to be on the plate. Those who do the work will give you a quotation for it. No enlargement has the quality of a steel engraving, but the use of fine silk or the Autotype Co.'s texture films might give you a somewhat similar effect.

**T. BEDWELL.**—So far as we are aware, the paper is not now on the market. The company that exploited it some time ago is now, we think, in course of liquidation.

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## SUMMARY.

the exhibition of photographs by members of the Professional Photographers' Association opened yesterday at the house of the British Journal. An article apropos of the exhibition by Mr. C. Tilney appears on page 99.

r. George Davison, it is announced, is retiring from business and the managing directorship of Kodak, Ltd. is to be in the hands of Mr. W. S. Gifford. (P. 108.)

agar-agar Emulsions.—Messrs. Cooper and Nuttall refer to some of the points raised in our article of last week. (P. 109.)

glazing P.O.P.—We mention a probable cause of recent failures in stripping P.O.P. (p. 97). A correspondent gives a method, which has been used with success, on page 110.

l printing was the subject of a demonstration at the Royal Photographic Society on Tuesday last by Mr. John H. Gear. (P. 107.)

t the Hull Society a demonstration of odourless sulphide substitute (thiomolybdate) in the sulphide toning of bromides was given. (P. 107.)

continuation of articles on profitable applications of carbon printing we give directions for the production of photographs on various cases and similar articles. (P. 98.)

## "COLOUR-PHOTOGRAPHY" SUPPLEMENT.

French worker, M. Charles Simmen, has recommended an amide-developer for the Autochrome process to be used in a weak solution in light in which the plates can be inspected. (P. 9.)

Le Roy recommends correcting the bluish tinge of an underexposed Autochrome with a weak bath of yellow dye. (P. 11.)

suggested use of Autochromes is in the sale of pictures, porcelains or other articles of value which cannot be shown to a purchaser at a distance. (P. 10.)

Several accessories for use in the Autochrome process have been introduced on the market. (P. 15.)

Green-plate Processes.—We give the chief part of the text of a recent lecture by Dr. C. E. K. Mees before the Society of Arts. (P. 12.)

r. Lehmann's observations on the Purkinje phenomenon in photographic plates appear on page 11.

## EX CATHEDRA.

### Glazing Prints.

During the past few weeks we have received such a large number of complaints with regard to failures in glazing prints, that it appears probable that the weather has something to do with the matter. The universal complaint is that the prints strip from the glass with difficulty and show various spots and markings. Many of our correspondents are careful workers, familiar with all the necessary details of preparing glass and prints, therefore it seems certain that the trouble is due, not to careless workmanship, but to some cause that they have not suspected, and, therefore, could not guard against. The most probable explanation seems to be that due allowance is not made for the dampness of the atmosphere, which has been excessive of late. If the gelatine is not perfectly dry, it, obviously, is not likely to retain a perfect gloss when stripped from the glass or glazing slab employed, and there have been many days this winter in which the drying of gelatine has been practically impossible without the adoption of special measures. Heat is probably the most commonly used drying agent, but this is somewhat risky with gelatine that is in an unusually moist condition, and it is quite possible that undue heating has been the cause of some of the mishaps brought to our notice. A safer method would be the employment of a drying cupboard or box, fitted up to serve as a desiccator. A dish of fused calcium chloride, or of sulphuric acid, would ensure the drying at a fairly rapid rate of any prints put into the same enclosure, and a small cupboard, or large box with well-fitting lid, could easily be utilised for the purpose. This should prove a cure if the trouble is due to the cause we suggest, while if the expedient fails, it would show pretty clearly that some cause other than damp air should be looked for. The experiment, therefore, seems to be well worth a trial.

\* \* \*

### Paper Prints from Autochromes

Mr. R. Raymond suggests in the current number of "La Photographie des Couleurs" a process of printing Autochromes on bichromated gelatine. A sheet of celluloid or mica is bound up with an Autochrome, so that it will not shift. It is then coated with bichromated gelatine, dried and exposed to light through the Autochrome and a colour filter corresponding to one of the colours of the starch grains. It is then washed or developed and inked up with a transparent greasy ink corresponding in colour to the filter. This operation is repeated three times, a different colour filter and a different ink being used each time. The result will be a complete colour-print, all except for the blacks, and these are produced by coating the picture with

a silver halide emulsion, exposing to light, and reversing as in the original plate. The print is then stripped and bound up, and one has a perfect reproduction of the Autochrome. The suggestion is ingenious, but, unfortunately, there are one or two points which the author does not make clear. The sensitiveness of bichromated gelatine to the spectrum extends in a gentle curve from the ultra-violet to a maximum at F in the bright blue, and then drops suddenly to nil at F $\frac{1}{2}$ E. How is one to render it sensitive to the rest of the spectrum, or to those colours transmitted by the green and red starch grains?

#### —And an Obstacle.

It is true that Calmels and Clerc ("B.J.," June 16, 1905, p. 472) state that bichromated gelatine could be colour-sensitised by the addition of erythrosine and other fluorescine compounds; but this has been denied by Tschörner ("B.J.," September 22, 1905, p. 755) and Neuhauss ("B.J.," December 8, 1905, p. 969), so that we are not much advanced. Beyond this, however, if the light is to act on the fourth coating of the silver halide emulsion through the coloured starch grains, it is obvious that it must be panchromatised. The author's statement, therefore, that his process will do away with all the difficulties of the old methods of printing in colours, "elle est à la portée de tous," or, *vulgo*, "any fool can do it," may be true, but it looks as though it replaces them by others which are not less troublesome, the least of which is, of course, the manufacture and coating of a panchromatic emulsion.

**"Tele"-words.** The processes of telegraphic transmission of pictorial matter which Dr. Korn and others have originated have led to the confusing use of the word "telephotography" for two totally different operations. But worse is yet to come, if we may judge from recent instances in the daily Press, where the prefix "tele" is employed unmistakably as implying wireless control of electric installations. Thus we find a London morning paper writing "Telemechanism—a new word for the wireless transmission of electric power." "Telephoto," like "aerography," has already two distinct significances, and is now to have a third bestowed upon it by hasty writers in the lay Press.

### PROFITABLE FORMS OF CARBON PRINTING.

#### III.\*

In two previous articles we have described methods by which the carbon process may be turned to profitable account by professional photographers. They were but slight departures from the ordinary method of working the process. One may now refer to still another application of the process for which there is, perhaps, less demand, but which, nevertheless, fairly comes within the scope of the present series of articles—we refer to the production of photographs on watch cases, cigar and cigarette cases, and similar articles. Instructions for working this process with the aid of a silver print-out process appeared in the JOURNAL some years ago, but we are now able to give a more satisfactory procedure in which carbon is the only process employed, an advance as regards certainty of permanence in the result. In describing the *modus operandi* we shall assume, as in the two previous articles, that the reader has an acquaintance with the practical working of carbon.

Let us suppose, for example, that we have to supply a customer with a portrait on the inner dome of a watch case. The work may be done either by the single or the

double transfer process, for both yield equally good results. It goes without saying that if the former method be adopted the negative must be a reversed one—that is, as regards right and left. In the first place, the inner dome of gold or silver must be removed from the watch by taking out the pin of the hinge. This the photographer had better get a neighbouring watchmaker to do for him, or, better still, the owner should be asked to get it done and deliver only the dome to be dealt with.

We shall for the nonce assume that single transfer is the method to be used, in which case the dome, after being cleaned with soap and water and thoroughly rinsing, coated with the substance given in the previous article, viz.:—

Nelson's No. 1 gelatine .....	1 oz.
Water .....	20 ozs.
Chrome alum, dissolved in 2 ozs. water...	20 grs.

This should be applied with a flat camel-hair brush as allowed to dry. In taking the portrait it should be made rather small, as one of large size in proportion to that of the case would have a vulgar appearance, and, moreover, would not be so easy to manipulate on a more or less convex surface. The negative should be masked to an oval, or circle, of suitable size, so that it prints with a clean margin, or it may be vignettted, according to taste. The most suitable colour-tissue is, for gold a warm blue, and for silver a warm brown. The tissue is printed in the usual way, but before it is mounted on the metal for development it should be trimmed down to but a little larger than the masked oval or circle. The reason for this is that the smaller the tissue, the easier it is to secure perfect contact at the edges on a slightly convex plate. The coated metal is placed in cold water for a few minutes for the substratum to get well saturated. The print tissue is then immersed, the two brought in contact, and then squeegeed together. The best squeegee for the present purpose is the finger. The tissue, which should be softened rather more than usual, is placed in position, held by the finger and thumb of the left hand while it is firmly stroked from centre to edges by a finger of the right hand, so as to ensure good contact. The back is then closely blotted off with blotting-paper.

After resting the usual time, the picture is developed in the ordinary way, alumed, and allowed to dry. If it is a good plan, in the development, soon after the paper backing has been stripped off to rub away carefully with the finger the coating at the edges of the print, for that is done at an early stage of the development a perfectly white margin is ensured in the finished picture. When dry the picture is varnished with a very hard varnish. The best for the purpose is the Zapon enamel No. 103 $\frac{1}{2}$ , sold by the Crane Chemical Company, of Birmingham. It is applied with a soft camel-hair brush. This, it may be mentioned, is a varnish specially made for metals—gold, silver and gilt.

In the above we have assumed the single transfer method to be employed, but the double is equally applicable. In this case the metal is coated with substratum for the double transfer method of producing pictures on porcelain plaques, viz.:—

Nelson's No. 1 gelatine .....	1 oz.
Water .....	20 ozs.
Chrome alum, dissolved in 2 ozs. water...	12 grs.

In this case the print is developed on flexible support in the usual manner, and, after being alumed and allowed to dry, is ready for transferring to the metal. The picture on its support is then soaked for a quarter of an hour or so in cold water to soften it. The gelatinised metal is then put into warm water about 85 to 90 deg. Fahr., until

\* "B.J.," January 17 and 24.



coating on the metal has acquired a distinctly slimy, the two are then brought together and pressed into mate contact as just described. When dry, the support is stripped off, and the picture is then ready for finishing. If the surface on which the picture is to be very convex, or departs much from the flat or lunette, difficulty may be experienced with the ordinary flexible support, by reason of its thickness and rigidity, in getting successful transfer. In such cases it is best to employ an indiarubber support as described in the *JOURNAL* January 17, 1907, for pictures on Japanese papers, using a very thin paper, such as "Bank Post," for the support.

In an alternative plan, when very convex surfaces have to be dealt with, is to develop the picture on a collodion support. A glass plate, previously waxed or treated with French chalk, is coated with an extra thick enamelling

collodion. When that has thoroughly set, the plate is put into cold water until all apparent greasiness is removed. The exposed tissue is squeezed on this, developed, and alumed as usual and allowed to dry. The film is then stripped off the glass and floated in position on to the softened substratum on the metal and then smoothed in contact with the finger, lightly used, or with a camel-hair brush. When dry the collodion can be dissolved off with a mixture of ether and alcohol. The picture is then varnished as before. It is a good plan, before stripping the film from the glass, to trim the picture to size. This is best done with a wheel cutter, as then the edges will not be ragged, as they might be if a penknife were used.

What has been said about the production of photographs on watch cases applies equally well to other metal articles, such as cigarette cases, match-boxes, and other articles of which photographers might make a profitable feature.

## THE SECOND EXHIBITION OF THE PROFESSIONAL PHOTOGRAPHERS' ASSOCIATION.

YESTERDAY the doors of the "Little Galleries" in Wellington Street were opened to the public for a second exhibition of the work of the professional photographer. It would be a good thing indeed if the "lay" public, or the men and women in the street, could be induced to crowd in. They would at least have the advantage of a select and bird's-eye view of what is being shown in the way of portrait photography: a better view than can be obtained by promiscuous glances into the same old series of show cases with which their daily round brings them face to face.

The Association does not lay itself out for the entertainment of the public, however. Its object is primarily to allow professional men to see what others of the craft are doing, and that means to establish a bond between them which shall be of the same time educational and commercially advantageous.

Naturally enough only firms who are members of the Association are invited to exhibit, and this fact, of course, involves the exclusion of several having world-wide reputations. But these, it is hoped, will, in the course of time, rank themselves with the leading members to the mutual benefit of all.

There is no moment's doubt that the present show is an advance artistically upon the last. Nevertheless, it cannot be denied that old-time principles, methods, and traditions seem as firmly fixed as ever. There is evidence that the work of a firm is very largely controlled by its studio paraphernalia. An operator gets accustomed, it may be, to placing his sitter always in the same spot; always in the same light; backed always by the same range of backgrounds; supported always by the same set of accessories. Possibly the operator would be a little more open to change if these factors were thoroughly changed. But it remains to be proved whether this slight "throwing out" would be an ultimate advantage, inasmuch as it would introduce new conditions, and therefore new ideas and new resources. These would perhaps arrive the look of freshness which is undoubtedly lacking in almost all professional work.

Whatever are the sins of the amateur, and they are many, in the end, yet he has with them all, and by reason of them all, a freshness of attack which is sometimes captivating. He is not fettered by a studio routine, but is for ever being faced with new problems called up by the ever-shifting conditions of his

professional scores in the matter of certainty of result; economy of material and labour, and, having all his procedure in his finger-tips, his technique and execution are assured. But, unfortunately, his results are no less assured—that is to say, they are as like each other as slight differences in scale and

mounting will permit. If there is any suggestion of stagnation in his work, it is to be found at this point.

Another matter suggested by the present exhibition is that of the banal smoothness due to retouching. Porcelain faces are still in demand, it would seem. One would have thought that the public might have been educated before this to see that mere smoothness for smoothness' sake is unalloyed vulgarity. People are not all so crassly vain and ignorant as to think that a portrait of themselves without a spot or wrinkle—to say nothing of modelling due to the presence of facial muscles of which nobody need be ashamed—could be believed in by their friends. It is impossible that such people can believe in them themselves. Who, then, does believe in them? An amateur's portrait was recently greeted by the following remark from the sitter:—"Well, that's the first photograph of myself that I have ever had taken that did not look smug, and it's the only one I ever liked." That criticism is the key to a very large portion of the complaints heard so often from professional men. Not everybody wants a so-called "pretty picture": a good few want what they ask for—a likeness. Likeness does not depend upon posing, upon light and shade, upon the grand swing of the train of a dress, or upon any of the matters so uppermost in the professional operator's mind. It depends upon the actual reproduction of the forms and shadows thrown by the modelling of the facial muscles. To sweep these all away, or to soften off their crispness of edge into a nebulosity that can represent nothing, is to place portraiture more than three centuries back, when Queen Elizabeth is said to have commanded the removal of the shadow by the side of her nose, a truthful detail which the painter of advanced notions had had the temerity to set upon his canvas.

This matter of retouching constitutes the great gulf between the professional and the amateur. The latter knows that if all is satisfactory before exposure is made it is madness to make graphic alteration of the resulting image. He may control the key of tone, he may take unwarrantable liberties in the presentment as a whole, but he does not tinker with the drawing and modelling of the features.

It is curious that such conventional ideas should survive where in other ways there is so much that is smart, clever, tasteful, and artistic. Effects of light seem to have been thoroughly explored, and in posing figures it is difficult to imagine anything graceful that has not already been tried. Indeed, in these matters we are pretty near the point of exhaustion, which accounts perhaps for the fact that resource and invention are now largely in the direction of the mount.

In the present show the mounts are very varied, and one must be thankful for the harmonious touch supplied by the promoters of the exhibition in further mounting every picture in the *passee-partout* manner with gold bindings. Homogeneity is thus preserved for the mass, whilst each separate mounting can be seen as easily as ever.

One of the most taking styles is the adoption of a frame design after the manner of an old copper-engraved portrait. It is, of course, quite out of keeping with the texture of a photograph; but one has to get used to such improprieties in commercial art, and purity in such affairs is at a low ebb everywhere in these days. The contrast involved between the line engraving texture and the tonal texture of a print is pleasing, at any rate. The American or multiple mounting seems so far to have no attraction for the professional man.

A detailed criticism of the exhibits would be at once unprofitable and invidious. But it may be worth while to mention the prints that strike one as being attractive in each contributor's selection. Messrs. W. and D. Downey send work that is very distinctive in style. It is straightforward, relying alone upon its quiet undemonstrative excellence. An ecclesiastic sitting at a writing table, a portrait of Miss Gabrielle Ray in Japanese costume, a view of the same lady's unrobed back, and a delicate vignette profile wherein the hat is an artistic aid; these will be the most admired of the group perhaps.

Messrs. Turner and Drinkwater work in a smaller scale, and have devised a narrow border close to the print which appears to be simply a matter of exposure of the margin of the paper. Its edges are softened. Their best-composed portrait is that of a lady holding a little boy who sits on the back of a tall chair. This is a very taking example.

A varied selection is sent by Mr. G. C. Beresford. 'One or two large heads, the prints of which are trimmed close, are particularly good, especially that which may be the portrait of Earl Spencer. A most unconventional but charmingly natural pose of a young girl who leans over to her right side upon her straightened arm, offers endless suggestions to a resourceful mind. The same firm have a head of the "heroic" type swathed in a tightly wrapped head-dress. It is very effective and remarkably well schemed; but it is surely not submitted as a piece of professional portraiture.

Messrs. Drummond, Young, and Watson send what is obviously an imitation of a famous Whistler portrait, the "Miss Alexander." She stands with hat in hand, with somewhat the same pose, and even a screen as background. It is very questionable whether anything is gained by these fancies. Photography is powerless before the greatest characteristic of this work of Whistler's, which is its colour and by no means the mere pose of the figure. A much more satisfactory work is the same firm's subject of a lady in profile at three-quarter length dressed in Early Victorian style, and the whole very tastefully tinted.

Mr. Henry S. Spink's work is largely confined to portraits of

Mr. DOUGLAS J. CARNEGIE, an occasional contributor to our pages, has been lecturing at Newcastle-on-Tyne, and some interesting particulars of his career are given in the current issue of "Weekly Notes and Programme," a publication which deals with matters scientific and otherwise in that district. Mr. Carnegie, who is well-known for his invention, in conjunction with Mr. C. Welborne Piper, of the chromium intensifier, received his early education at Staveley Grammar-school and Epsom College. From the latter place he qualified for an Exhibition Scholarship in chemistry at the London University, and gained an entrance science scholarship at Gonville and Caius College, Cambridge. He secured a double-first in parts 1 and 2 Natural Science Tripos, 1884-1886, and became assistant lecturer and demonstrator in the chemical laboratory of Caius College (1884-1889). From 1890-1893 he was Professor of Chemistry in Colorado College, U.S.A., and from 1893 to 1896

children. They are also slightly tinted. Mr. Spink has a knack of getting charming babies as sitters, and of photographing them at their best. He has further made a happy choice of elaborate design in the band of ornament that sets off his attractive pictures.

Mr. Gill, of Colchester, in his delicate portraits appears to be using the property balustrade more than hitherto. Photographers must recollect his many charming portrait studies taken against genuine panelled backgrounds and window niches.

Mr. Ralph Robinson (H. P. Robinson and Co.) has already a high reputation for children's portraits. Those he sends here are as captivating as ever, especially the oval that contains a mother holding her little one.

Sarony, of Scarborough, contributes some excellent and bold work, the best example being a fine head of a young lady, where the treatment of the loosely dressed hair is effective. Other heads of women and children are also strongly and effectively given.

Mr. Moffat, Edinburgh, displays great taste in the portrait of a lady in wedding dress, photographed in the hall of her fathers, where the introduction of a screen successfully quietens the background, and yet allows the hall to be significantly apparent. A group of a musical family is also noteworthy in view of the difficulty of perfect spontaneity in such a subject.

Capital expression is secured by Miss Lizzie Caswall-Smith, a child holding its hand to its mouth, and in another half-subject, where the pleasing tones of the flesh against the whiteness of the robes is artistically felt.

Messrs. Alfred Ellis and Walery make a great feature of the relief afforded to a figure by its background. Where the shape—or the "pattern," as artists say—is good in design, a few decorative breadth results. Here a girl eating grapes makes a dark shape against the background; the young lady with her foot upon the stairs makes a white shape.

The specimens from Mendelssohn are good in technique; but they do not appear to be finer than the great reputation of the firm would lead one to expect. They are portraits of aristocratic notabilities for the most part, and all have dignity of character.

Of the late Mr. Martin Jacolette's most attractive contributions the best is a Court-dress piece with a particularly nice background.

Mr. Lancaster, of Tunbridge Wells, scores with a portrait of an old man, which has excellent character and is capitally lit.

From the same town also are some children groups by Mr. Gordon Chase. Children also form the staple of Messrs. Hugh and Mullins's selection, and Mr. E. C. Ballard includes two interiors and a landscape.

Excellent equestrian studies, sent by Mr. Tom Reveley, complete the display.

It may be stated that all exhibitors were asked to submit eight photographs, from which six were selected for exhibition.

F. C. TILNEY.

was science master of Ley's School, Cambridge. He is an Extension Lecturer for the Universities of London and Cambridge, and was for some time research chemist to the Cambridge Colour Works, Loughton.

MR. FREDERIC T. CORKETT informs us that owing to the rapid expansion of his business, and in consequence of his appointment as Art Editor to the Fine Arts Publishing Co., Ltd., he has found it necessary to remove from the Studio of Design, 2, 3 and 4, Charing Cross House, 29A, Charing Cross Road, W.C., from which address all the Burlington Art Miniatures will in future be published. All communications therefore relating to the Miniature and Commercial sections of the Fine Arts Company's business should, on and after February 3, be addressed to Mr. Corkett at the head office of the Company, Charing Cross House, as above.



ORTHOCHROMATISM BY BATHING.—A SENSITOMETRIC STUDY.

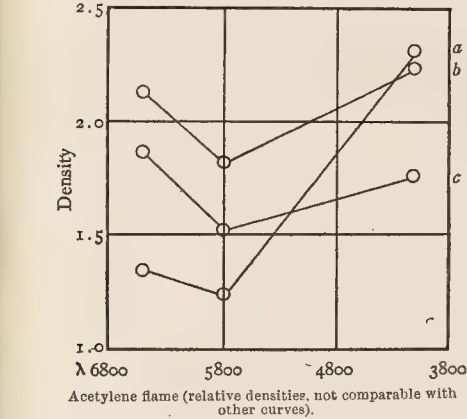
THE following is the full text of a further communication in the series of researches by Mr. R. J. Wallace, of the Yerkes Observatory, appearing as "Studies in Sensitometry." The same author's first published experiments on a system of daylight sensitometry appeared last year, and were reprinted in our columns from proofs specially prepared, as was the present paper, by Mr. Wallace, for "The British Journal of Photography." Our acknowledgments are therefore equally due to Mr. Wallace and to the "Astrophysical Journal," in which the papers have first appeared.—Eds., "B.J."]

The Influence of Temperature of the Dye-Bath.

The influence of the temperature of the sensitising bath upon the rate was studied by making up bath 124, which was cooled by pans of ice to a temperature of 12deg. C., and in which were then bathed two plates for three minutes, and subsequently washed in alcohol at similar temperature for thirty seconds. The temperature of the bath was then raised by seven separate stages to 30deg. C., two plates being bathed at each step in the rise. All plates were then rapidly dried at the same temperature. Exposure of each plate to the spectrum series of a constant acetylene flame showed a very interesting and clearly defined difference, which was borne out by a second series bathed on the following day and exposed to diffused daylight. The following are the measurements of the principal plates in the series:—

Temperature.	Mean Density.			$\chi = \frac{\beta}{\lambda 6500}$
	At $\lambda$ 6500	At $\lambda$ 5900	At $\lambda$ 4300	
0 .....	1.3500	1.2440	2.3128	1.71
10 .....	2.1370	1.8160	2.2502	1.05
20 .....	1.8660	1.5206	1.7686	0.95
30, plate melted.....				

and their accompanying curves (Fig. 2).



It therefore follows from the foregoing results that an increase in the temperature of the dye-bath exercises a beneficial effect upon the relative chromatic sensitiveness of this plate. This effect has been confirmed in many other instances throughout the course of the investigation. The temperature of the bath is therefore kept constant at 23deg. C. Referring to the plates of different makes which have also been experimented with in this regard, it results that, although the effect is not identical with each, it yet appears to be uniformly certain with the Seed "27."

Results with the Various Dye Sensitisers.

The principal results may now be briefly considered as follows:—  
**Pinacyanol.**—A plate bathed in an aqueous solution of this dye and washed in water shows a strong sensitiveness to the spectrum from  $\lambda$  3,300-7,000, and with increased exposure to beyond  $\lambda$  7,200, with two distinct maxima in the red and green at  $\lambda$  5,270-5,800, and  $\lambda$  6,160-6,870. The addition of ammonia to the bath increases the red sensitiveness to a considerable degree, and this increase is proportional to the amount of ammonia added. The introduction of

ethyl alcohol to the dye-bath, and omission of the subsequent washing, results in a distinctly greater action from  $\lambda$  5,270-5,890, while the general effect upon the sensitiveness from  $\lambda$  5,270-6,580 is shown by a decided increase in relative chromatic effect. A subsequent rinse in alcohol after bathing shows a still further improvement.<sup>16</sup>  
Variation in the amount of dyestuff entering into the bathing solution was experimented upon in amounts varying from thirty minims to ninety minims in steps of ten minims. The greatest sensitising action upon the "27" plate was found to follow when the amount of dye was 1-68,000th to 1-70,000th, which is in close agreement with the experimental results of Mees and Sheppard.<sup>17</sup>  
Fig. 3 shows the curve of this type-plate, and illustrates the advantageous results following the addition of, and washing with, alcohol.

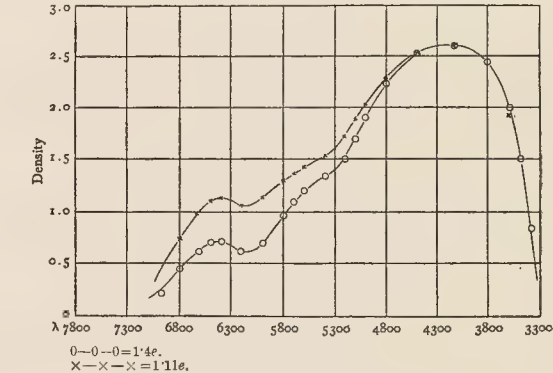


Fig. 3.

The reduction in speed from the "27" is 0.19.

In obtaining the  $\chi$  value for all of the following plates ( $\frac{\beta}{\lambda_n} = \chi$ ,  $\lambda$  4100  $\approx \beta$ , while  $n = \lambda$  5100, 5500, 5900, 6300, and 6800 respectively.

$\chi$ FOR PINACYANOL BATHED.					
Type \ $\lambda$	6800	6300	5900	5500	5100
1.11e.....	3.47	2.34	2.15	1.75	1.38
1.4e.....	5.79	3.76	3.25	2.01	1.53

**Pinaverdol.**—This dye in dilute alcohol bath sensitises for the green and orange-red of the spectrum extending to about  $\lambda$  6,400 (and with increased exposure to  $\lambda$  6,700), with two broad distinct maxima near  $\lambda$  5,900 and  $\lambda$  5,300. The best result from the use of this dye was obtained with a bath of the following constitution:—

Pinaverdol, 1 : 1,000 ..... 60 minims  
Methyl alcohol ..... 3 oz.  
Water ..... 4 oz.  
Ammonia ..... 60 minims.

Time of immersion, three minutes—no washing. Speed difference = 0.60. See 2.9f, Fig. 4.

At $\lambda =$ 6,300	5,900	5,500	5,100
$\chi =$ 5.73	1.79	1.75	1.31

**Homocol.**—This is a particularly interesting sensitiser for the green on gelatino-silver-bromide, embracing the entire region from  $\lambda$  4,860-5,460, and when made up with dilute ethyl-alcohol bath followed by alcohol washing gives a plate working with exceptional clearness. Its action is very similar to pinaverdol, although with equal exposure it does not sensitise so far into the red. As a sensi-

<sup>16</sup> The introduction of alcohol to the dye bath was published by Dr. E. König, who however treated the plate to a subsequent washing in water. *Photo. Korr.*, September 1905, p. 406.  
<sup>17</sup> *Theory of the Photographic Process*, p. 327.

tiser for the blue-green this dye has no equal (see Fig. 4, curve 4.9f)<sup>18</sup>. Speed difference = 0.61.

At $\lambda = 6,300$	5,900	5,500	5,100
$\chi = 5.20$	1.97	1.60	1.17

**Pinachrome.**—In dilute ethyl-alcohol plus ammonia bath this dye sensitises for the yellow-green and orange and shows definitely the  $\alpha$  and  $\beta$  bands characteristic of cyanin<sup>19</sup>. With normal exposure to

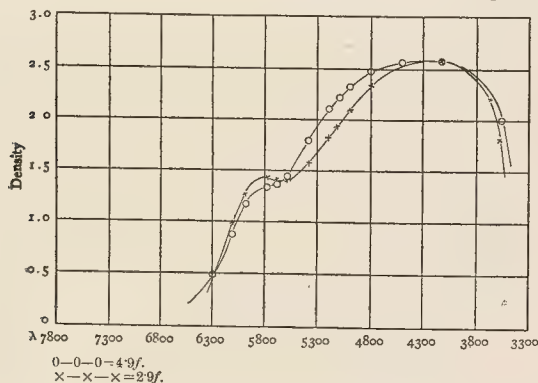
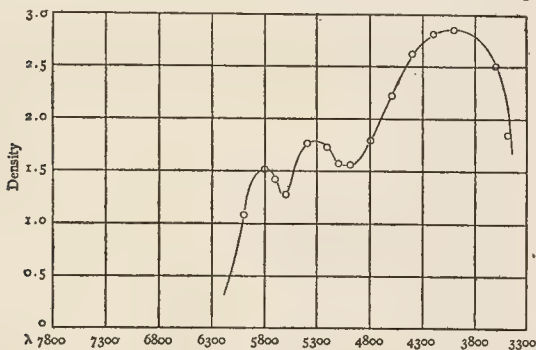


Fig. 4.

the spectrum the sensitiveness extends to  $\lambda$  6,300, but can be forced to beyond  $\lambda$  6,500 (Fig. 5). Speed difference = 0.36.

At $\lambda = 6,300$	5,900	5,500	5,100
$\chi = 25.7$	2.01	1.68	1.83

**Pinacyanol+pinaverdol.**—These two dyes in combination result in a very good plate in which the characteristic pinacyanol gap in the blue-green is very greatly benefited.  $\chi$  values for the various posi-



(3.11e.)

Fig. 5.

tions are given in Table A. The gradation values in this plate remain similar to the unbathed "27." Speed dif.=0.32.

**Pinacyanol+homocol** also forms a good combination, and one which has been recommended by Monpillard<sup>20</sup>. When made up in dilute ethyl-alcohol bath without ammonia the action throughout the red and green, although fairly even, is yet weak when compared with that in the blue-violet. The introduction of ammonia, however, shows a steady gain in the red and green sensitiveness as the amount is increased. (The same effect is noticeable as the bathing-time is increased.) With normal exposure the sensitiveness extends slightly beyond B ( $\lambda$  6,870), while with increase in exposure it runs beyond  $\alpha$  ( $\lambda$  7,200). From the blue the chromatic sensitiveness falls off rather

<sup>18</sup> This curve is not in agreement with that published by Mees, Sheppard, and Newton (*Journ. Roy. Phot. Soc.*, 45, 266, July, 1905). The difference results from the use of a dilute alcohol dye bath in place of an aqueous. An aqueous (ammoniacal) bath gave a similar result up to  $\lambda$  4,500 to that obtained by these workers. The replacement of the ammonia by potassium carbonate (and other alkalies) as recommended by Dr. König (*Phot. Korr.*, September 1906, did not prove successful in the hands of the writer.

<sup>19</sup> The two absorption bands of cyanin have been termed respectively  $\alpha$  and  $\beta$  by von Hülb. The former lies near  $\lambda$  6900 while the latter is near  $\lambda$  5450. *Eder's Jahrbuch*, 1905, p. 183; also *Journ. Roy. Phot. Soc.*, 46, 133, 1906.

<sup>20</sup> *Bull. Soc. Franc. Phot.* (2), 22, 132, 1906.

abruptly and then pursues a fairly uniform curve, which shows two distinct maxima at  $\lambda$  5800 and  $\lambda$  6,400 respectively. Decrease in the amount of pinacyanol accentuates these maxima, the best result being obtained with a bath composed of

Pinacyanol (1 : 1,000)	60 minims.
Homocol	60 minims.
Alcohol (ethyl)	3 oz.
Ammonia	90 minims.
Water (distilled)	4 oz.

Another bath made up with the same proportionate amounts of dye, but containing a minimum quantity of water and excess of alcohol, shows a peculiar drop in the red sensitiveness, which ends at  $\lambda$  6,560 very abruptly, and with an exceedingly pronounced drop in the orange at  $\lambda$  6,100, both drops becoming more pronounced as the dyes are increased in amount. A "27" plate treated in this bath resembles very closely in action the Seed "panchromatic" (see Fig. 6). When made up in ammoniacal water bath the sensi-

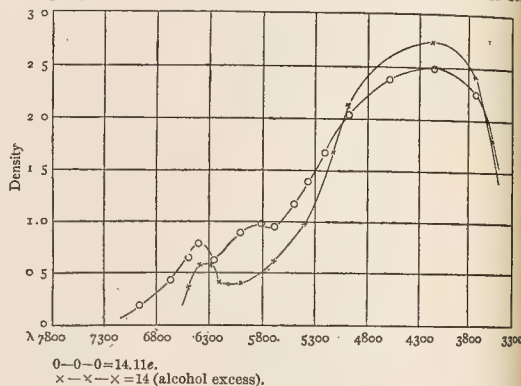


Fig. 6.

tising action is very weak and unsatisfactory; this weakness is still more apparent when the plate is washed in water after staining, but shows a slight improvement when the washing is conducted with alcohol. Speed dif. = 0.74.

Type	$\chi$				
	6800	6300	5900	5500	5100
14. 11e. ....	7.01	3.54	2.53	2.09	1.28
14. ....		4.40	5.91	3.16	1.47
(Alcohol Bath)					

ROBERT JAMES WALLACE.

(To be continued.)

### THE KODAK COMPANY IN INDIA.

THE past few months have witnessed the first steps of an extensive scheme on the part of Kodak, Limited, to carry a knowledge of the simple methods of photography associated with the name of Kodak into every corner of the Indian Empire. The scheme is under the immediate care of Mr. Hedley M. Smith, and it is intended to give every large centre the benefit of an imposing exhibition, in which can be seen not only the light and compact daylight loading cameras, and the machines for daylight development introduced by the company, but a splendid array of the results in the shape of enlargements and contact prints.

In the Bombay Town Hall the public have already had an opportunity of seeing the possibilities of the Kodak in the hands of the amateur. To quote from "The Times of India," the collection brought together by the Kodak Company was "undoubtedly the finest photographic exhibition that has ever been got together in the country. . . . Beside the display of pictures, the organisers of the exhibition have also arranged a show of their latest patterns in apparatus, so that the visitor who is unacquainted with the all-daylight procedure may easily make himself familiar with the process, and at the same time make comparison with some of its fine results."

To the man or woman in India contemplating photography as a



astime, the Kodak idea appeals particularly strongly. The compactness of the apparatus and supplies and their independence of the dark-room win the traveller at once, and it is not surprising that to the very large proportion of the British military and civil population who are enthusiastic Kodak users may be added large numbers of India's native peoples.

That the present steps will consolidate and greatly extend the already large business carried on by Kodak, Limited, in India, may be regarded as a certainty. The field is a large one, and should yield gratifying returns under the skilful and thorough methods of exploitation which we may expect the Kodak Company to apply.

## Patent News.

*Process patents—applications and specifications—are treated in Photo Mechanical Notes."*

The following applications for Patents were received between January 20 and January 25:—

**CAMERAS.**—No. 1,323. Improvements in photographic cameras. Layman Magarry Sternbergh, Chancery Lane Station Chambers, London.

**FLEXIBLE SHEETS.**—No. 1,327. Improvements in apparatus for holding flexible sheets and the like. Kodak, Ltd., Chancery Lane Station Chambers, London, for Norman W. Carkhuff, United States.

**OPTICAL PROJECTION.**—No. 1,328. Improvements in optical projection apparatus. Kodak, Ltd., Chancery Lane Station Chambers, London, for William F. Folmer, United States.

**DEVELOPING.**—No. 1,329. Improvements in photographic developing and like apparatus. Kodak, Ltd., Chancery Lane Station Chambers, London, for Frederick W. Barnes and Milton B. Punnett, United States.

**SCREEN-PLATES.**—No. 1,372. Improvement in the manufacture of screen-plates for colour photography. Edward John Wall, Castlebar Works, Ealing, London.

**COIN-FREED APPARATUS.**—No. 1,422. Improvements in coin-freed photographic apparatus. René François Frédéric Roupnel, Birkbeck Bank Chambers, Southampton Buildings, London.

**PHOTO-TELEGRAPHY.**—No. 1,515. Improved apparatus for wireless transmission and transmission by wires of photographs, drawings, and the like. Ferdinand von Madaler, 61, Stanley Street, Battersea, London.

**PROJECTION.**—No. 1,568. New or improved apparatus or appliance for displaying images of natural or other objects on screens. George Heaton Dugard, 35, Temple Row, Birmingham.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

**ROTARY GLAZING OF PRINTS.**—No. 1,157. 1907. This invention relates to machinery for preparing glass or other plates and squeegeeing into contact therewith photographic prints and the like for the purpose of finishing by glazing. The apparatus consists of a rigid framing, *a*, constructed of wood or metal, consisting of a pair of longitudinal members braced together parallel at any required distance apart. Each side member has an upper and a lower rail and, upon these, extending from one side member to the other is mounted a series of rollers in suitable bearings. The rollers are so mounted in pairs, an upper and a lower in each pair, the

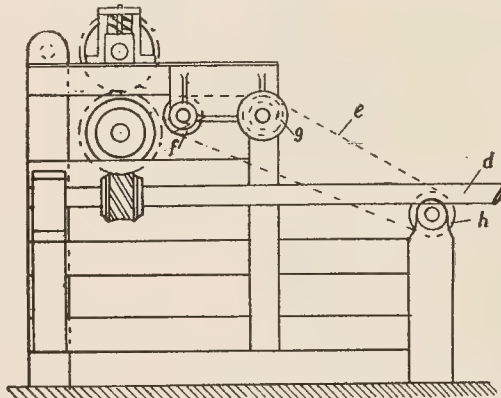


Fig. 2.

axes of the lower ones being in fixed bearings, *b*, while those of the upper rollers are in bearings, *c*, capable of rising slightly under the restraint of springs pressing or pulling upon them. The number of rollers may be varied, but a suitable number is eleven pairs, viz.:—(1) A pair of hollow perforated metal rollers, covered with swansdown or the like and fed, through their hollow spindles, with a spirituous solution of wax from an overhead tank (not shown); (2) a pair of conveying rollers; (3 and 4) two pairs of polishing rollers (5) another pair of conveying rollers; (6 and 7) two further pairs of polishers; (8) a pair of conveying rollers; (9 and 10) two more pairs of polishing rollers set obliquely across the machine; and (11) a pair of squeegeeing rollers. A larger number of rollers are shown in the drawings, in which A and B are extra polishing rollers and

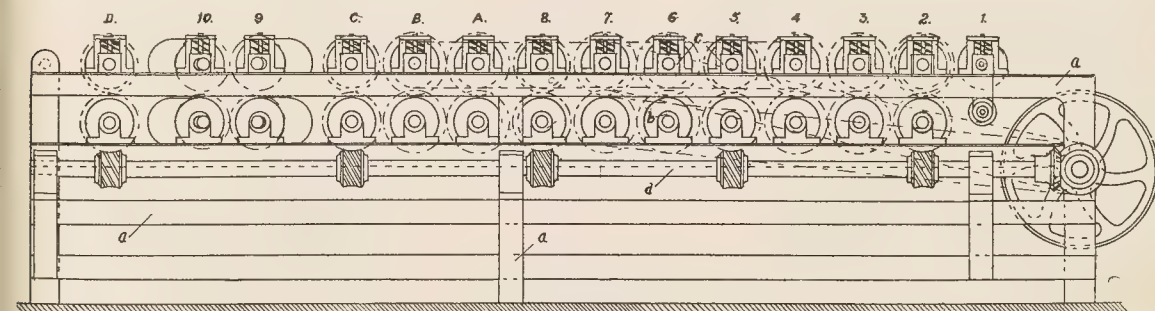


Fig. 1.

**PRINTING.**—No. 1,595. Improved apparatus and means for photographic printing. John Mills, 162, Waller Road, Queen's Road, New Cross, London.

**COPYING.**—No. 1,615. Apparatus for reproducing at a distance graphic documents (photographs, blocks, drawings, and the like). Edouard Belin, 6, Lord Street, Liverpool.

**FILMS.**—No. 1,689. Improvements in or relating to the production of sensitised surfaces or films for photographic purposes. William Hay Caldwell, 46, Lincoln's Inn Fields, London.

C and D are extra conveying rollers. About the extremities of the conveying rollers, rubber bands, *m*, are so placed that they act as narrow friction surfaces serving to carry the plates between the rollers and to support the plates by their edges only. The conveying, polishing, and squeegeeing rollers have the ends of their axes extended outside the main framing whereon to fit gears by which motion may be transmitted from one to another. The polishing rollers, excepting those enumerated as 9 and 10 above, are driven through spur gears, both upon rollers in two adjacent pairs being

geared at one end and both corresponding lower ones at the opposite ends, the four then being connected by a further pair of gears fitted to one upper and one lower roller respectively. Those polishing rollers, 9 and 10, which are set obliquely are driven independently by means of bolts running over pulleys on their axes. Instead of these rollers, the purpose of which is finally to polish the plates, six discs may be used so arranged that half their number act equally upon either sides of each plate. The discs rotate on vertical spindles in separate frames mounted upon the main framing so that their faces are presented to the surfaces of the glass plates passed between them. They are driven by means of a belt, or in any other convenient manner.

In use, an operator inserts each plate between the waxing rollers, 1, and impels it forward until it is partly taken by the first pair of conveying rollers, 2, succeeding the waxing rollers. Thence it is mechanically carried to the polishing rollers 3 and 4, the length of each plate being such that, before one end leaves the first pair of conveying rollers, the other is taken by the second pair of conveying rollers and so through the entire series. As each plate leaves the last conveying rollers and approaches the squeeze rollers 11, prints to be finished are laid wet by hand directly upon the upper surface of the plate, and upon endless travelling tapes *c* below for application to the reverse side. These tapes run over plain rollers *f*, *g*, *h*, so that they take an inclined position with the highest point on a level with the plane of the plate to which the prints are to be applied. The speed of the machine is regulated to suit the operators in attendance. Charles Rubie Neve, Belmont, Spencer Road, Wealdstone, Middlesex.

**CINEMATOGRAPH MECHANISM.**—No. 15,902. 1907. The invention consists in an automatic safety device rendering it possible to stop instantaneously the propagation of the burning of the strips of film employed in cinematographs. It comprises an automatic device consisting of strips of highly inflammable material which may be stronger than the film, and which on being ignited instantly close the outlets and inlets of the incombustible magazines in which the strip of film is unwound and wound respectively, and this immediately the strip has become ignited. In conjunction with the above is a mechanical device by means of which the orifices may be closed hermetically, at the same time cutting the strip of film at these points. Arcade Mallet, 18, Rue de Mogador, Paris.

**PLATE CINEMATOGRAPH.**—No. 20,863. 1907. The apparatus, which is illustrated in five drawings, consists of an outer casing, enclosing a lens, a movable box adapted to reciprocate across the focus of the lens, a series of photographic plates in the box, screw mechanism for presenting the plates serially and with descending motion before the lens, a transporter within the casing adapted to receive and remove the plates one by one, and an expandable receptacle adapted to receive and hold the plates. Robert Arthur Fauconnet, 36, Rue de Menilmontant, Paris.

**CINEMATOGRAPH-PHONOGRAPH.**—No. 4,429. 1907. The claim is for "an arrangement for simultaneously operating in synchronism several phonographs and cinematographs by the electro servo-motors described in the Patents Nos. 1686-07 and 3927-07, characterised by permitting the simultaneous operation of any number of phonographs and cinematographs and employing between the transmitters and the receivers a conductor of three wires only. Maurice Couade, 5, Rue Richemane, Paris.

**CINEMATOGRAPH-PHONOGRAPH.**—No. 206. 1907. The first of the four claims is for "the construction of the indicating apparatus for photographs and cinematographs operating synchronously, comprising a pinion driven through a flexible transmission connected at its other extremity with one of the parts of the cinematograph, this pinion meshing with a wheel fixed to the shaft of the differential, the ratio between this pinion and the wheel being variable in order to admit of the employment of cinematographic bands and photographic discs of different makes, and in which the number of pictures per revolution of the disc may vary. Leon Gaumont, 57, Rue Saint Roch, Paris.

The following complete specifications are open to public inspection before acceptance under the Patents Act, 1901:—

**CINEMATOGRAPHS.**—No. 562. Apparatus for moistening cinematographic bands or films and the like. Lertourné.

**SHUTTERS.**—No. 563. Shutters for cinematographs and the like. Lertourné.

**COIN-FREED APPARATUS.**—No. 1,422. Coin-freed photographic apparatus. Roupnel.

## New Trade Names.

**GUINEA GOLD.**—No. 296,897. Dyes (mineral), alkalies, anti-corrosives, chemical substances for use in photography, glue, mordants and saltpetre. W. H. S. Taylor and Co., Ltd., 42, Market Street, Wigan. October 9, 1907.

**GER-WEE.**—No. 297,145. Chemical substances used in manufacturing photography or philosophical research and anti-corrosives. Fritz Beindorff, trading as Gunther Wagner, 80, Milton Street, London, E.C., ink and colour maker. October 17, 1907.

**ARSOI.**—No. 298,629. Chemical substances used in manufacturing photography, or philosophical research and anti-corrosives, but not including chemical substances for dyeing furs, hair, hides, skins, and the like, and not including any goods of a like kind to chemical substances for dyeing furs, hair, hides, skins, and the like. Georges François Jaubert, 155, Boulevard Malesherbes, Paris, France. December 6, 1907.

**GONDOLA.**—No. 298,713. Chemical substances used in manufacturing photography, or philosophical research and anti-corrosives. P. Morris and Co. (Chester), 135, Foregate Street, Chester. December 10, 1907.

**ENOL.**—No. 298,869. Chemical substances used in photography. Kodak, Ltd., 57-61, Clerkenwell Road, London, E.C. December 14, 1907.

**LION.**—No. 296,646. Cinematograph films, bearing taken photographs, machines for taking and showing cinematograph pictures. George Howard Cricks and Harry Martin Sharp, trading as Cricks and Sharp, Ravensbury Lodge, London Road, Mitcham, London, S.W., cinematographers. September 28, 1907.

**"VESCA."**—No. 299,018. Photographic cameras and other photographic apparatus included in Class 8. The London Stereoscopic and Photographic Co., Ltd., 54, Cheapside, London, E.C., and 106 and 108, Regent Street, London, W. December 20, 1907.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Stripping Negatives.

The following method will be found useful (writes Mr. John Sterry in "Photography") with those negatives which are but of doubtful value, and only kept in case of some future need.

The following solution is prepared:—

Sat. sol. of potassium carbonate .....	2oz. (by measure)
Glycerine .....	1oz. "
Forty per cent. formalin.....	1oz. "
Tap water to .....	50oz. "

The film may be stripped by the use of potassium carbonate alone, but the above seems to be more satisfactory. After standing a little while the solution will become cloudy, and must either be allowed to settle and be decanted or filtered before use. The plates should be immersed in the solution for half an hour, then stood to drain a few moments and surface-dried with an old cambric handkerchief made into a pad. They are then to be set up to dry in a cool place, so that the drying may be comparatively slow and regular. They will appear to be dry long before they are so in reality, or in a satisfactory condition for stripping. In practice six hours has been found a good time, but if left twelve or more the certainty of stripping perfectly flat is greatly increased. When thus ready for stripping it is only necessary to cut round with a sharp knife about 1-16 in. or  $\frac{1}{4}$  in. from the edge of the plate; then, gently lifting one corner, the film will separate with ease and lie perfectly flat. It should be placed downwards on a flat surface for a little time before being stored away.

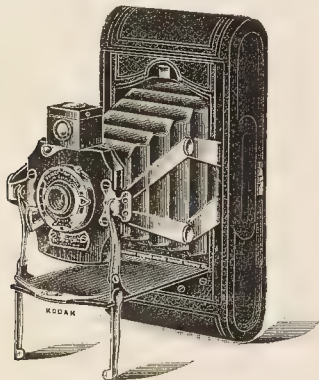
**SPEED NUMBERS.**—In reference to a recent "Ex Cathedra" note on "Plate Speed Numbers," we ought to point out that the numbers in both cases were those of orthochromatic plates. Moreover, it is perhaps due to Mr. Watkins to say that the reference was not to the list of speeds issued by his firm.



## New Apparatus, &c.

**"FOLDING POCKET KODAKS."**—The latest models of the No. 1 and No. 1A of these well-known Kodaks are once more embodiments of the policy of the Kodak Company never to rest satisfied with a type of camera, to whatever pitch of perfection it may have come. In these new models the rigid double finder hitherto fitted is replaced by a single finder, so mounted as to be easily adjustable for vertical and horizontal pictures.

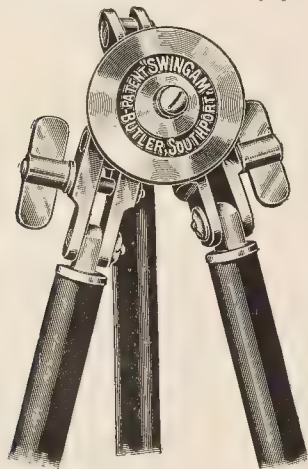
The method of inserting the spools of film has also been simplified, a neat nickel pivot pin, which is pushed in or pulled out directly by finger and thumb, taking the place of the device formerly fitted. The camera thus acquires the undeniable advantage of being opened and extended for use by one movement only.



The No. 1 Folding Pocket Kodak gives  $3\frac{1}{2}$  by  $2\frac{1}{4}$  pictures, and costs 2s.; the No. 1A Folding Pocket Kodak gives  $4\frac{1}{4}$  by  $2\frac{1}{4}$  pictures, and costs £2 10s.; both carrying films for twelve exposures without re-loading, while loading is, of course, a purely daylight operation.

**"Swincam" Tripod.** Model C (Tourist) pattern. Made by William Butler, 20, Crosby Road, Southport.

When Mr. Butler allowed us to test his "Swincam" tripod some two years ago, we expressed an opinion of it which we are glad to hear endorsed by many purchasers. The camera so made, it may be remembered, is of the substantial build necessary for supporting a large stand camera in practically any position. The new pattern is now offered in order to provide a tripod suitable for amateur user, but offering practically the same range of adjustments possessed by the original pattern. It is of the telescopic type, and the universal movements of the head are secured by two ball-socket attachments held in any position, each by a



nut. The head itself is  $1\frac{1}{2}$  inches in diameter, and is fitted with English and Continental screws for attaching the camera,

either of which can be used at option. The length of the thread projecting above the top of the head-plate can be adjusted to suit different makes of cameras, or both screws can be removed and the hole formed in the centre of the head utilised for securing the camera by means of a T-headed screw, the links when placed at an angle to the legs affording space for handling the screw, and enlarging the base for the support of the camera.

The mechanical design of the apparatus is an excellent example of strength and convenience, and the rounded-off finish of the brass and aluminium work no small recommendation to the tripod. The total height at full extension is 4 ft. 2 in., whilst when closed the instrument measures 1 ft. 5 in. by  $1\frac{1}{2}$  in. over all. Its price is £1 1s., and for a further 5s. 6d. a neat leather sling case is supplied. It should be mentioned that Mr. Butler, who is an engineer holding a responsible post in the North of England, himself examines and adjusts each tripod before it is sent out, a guarantee, if any were needed, of the thorough workmanlike construction and finish of each instrument.

## New Materials.

**"Chromona" Green Toner.** Made by the White Band Chemical Company, Progress Works, South Croydon.

That there is a demand for a process of toning bromide or gas-light prints to a green colour is evident to us from the frequency with which a request for a formula is addressed to us. To such questioners we have usually recommended a green carbon tissue for the reason that we knew of no toning preparation which could be depended upon to do its work with sufficient certainty and rapidity. But we must now admit, after trying the solutions submitted to us by the White Band Co. that in their new "Chromona" green toner they have issued a preparation which acts most satisfactorily. It is supplied in two solutions, No. 1, blue, and No. 2, yellow, which, after dilution in each case with five times its volume of water, are mixed, and form the toning bath. That is to say, 2 drachms each of Nos. 1 and 2 are separately diluted to  $\frac{1}{2}$  ounces of water and mixed together. The 3 ounces of mixture are prescribed for four half-plate prints of average depth, a number which we have found it to tone fully. The process occupies about five minutes, and is followed easily on removing the print or pouring off the solution for a moment. The yellow toner masks the action to a slight extent, but if, after a rinse, the print is found not to be toned enough it can be put back and the process continued further. The yellow stains which covers the whole print is discharged in water in five or ten minutes, leaving absolutely pure high-lights. During this stage, as we have just said, the full green tone becomes visible.

In using the toner on a number of bromide prints we were unable to notice any loss of intensity worth mentioning. There may be a very slight reduction, but it is practically negligible. Certainly, a print which is of full proper strength is equally so after toning. The longer the toning action is continued the brighter the green produced, and it is in the production of a brilliant green that loss of intensity may be noticed. The less brilliant tones are, however, the most effective. The solution is suitable for all bromide paper, though not for every gas-light paper. It is equally applicable to freshly made prints and those which have been made some time. Among those which we have toned was one torn from a 1903 catalogue, and therefore at least four years of age. The new solution thus appears to us to be a bath deserving of recommendation, and likely to be of much use to professional photographers able to employ it in producing some new style of photograph by its means. As regards the permanence of the results, we have no means of speaking, but the makers have not issued it until after satisfying themselves on this point, and the activity with which the solution effects the change in the prints certainly suggests the thorough and direct conversion of the silver image. The toner is sold in two solutions, sufficient for several dozen half-plate prints, at 1s. 6d. We should add that we found the toner act satisfactorily in the case of a lantern slide.

**"Diachrome" Toning Solutions (Traube process).** Made by Perutz and Co., Munich, Germany.

We have, in past issues of the "B.J.," alluded to the so-named "Diachrome" process of dye-toning, worked out and patented by Dr. W. Traube, of Berlin, for both monochrome and three-colour

printing. The principle of the process consists in bleaching the image of a positive transparency on glass with a bichromate mixture containing iodine, thus converting it into silver iodide. On immersion in a suitable dye-bath, this iodide image combines with the colouring matter and forms a definite coloured image, the depth of which in the various gradations depends on the gradations of the original image. The image can be left at this stage with the silver iodide in it, or the latter can be dissolved out with a suitable bath of hypo, that is one containing, we believe, certain metallic salts. Our experience of the process, however, is limited to the former of these procedures, as none of the special hypo bath has yet reached us. Dr. Traube, however, has been good enough to send us a small supply of the materials which has sufficed to show us the very easy character of the process and the beautiful results given by it. The operations are not complicated. The transparency, after removal of hypo by washing, is bleached in the No. 1 solution. In the space of a couple of minutes it is bleached through to the back. It is then rinsed in plain water until clear of yellow stain, and then put to soak in the dye bath, made by dissolving the pellet in  $4\frac{1}{2}$  oz. of water, to which a drop or two of 80 per cent. acetic acid is added. Here the dye combines with the bleached image and at the same time stains the gelatine. All traces of the latter action, however, are removed by a short wash in running water. The high lights are left perfectly clear glass, and the image of a rich green or brown colour, according to the dye selected. The whole process occupies little over half an hour, in which time a fair number of lantern slides can be treated, since the process requires no control at any stage. The slide is fully bleached and fully stained, and the coloured image appears to be an equivalent in every way save colour of the black silver image which formed the slide at the start. The slides, it should be added, do not exhibit the same colours on projection which they do when examined by diffused light, except in the case of the two dyes specially prepared for projection.

So far as we can judge from our use of a small sample, the "Diachrome" process supplies a most easy and certain method of obtaining transparencies in brilliant colours. The very brilliance of these is perhaps a drawback since many subjects are unfitted for any such bright colour. But in all probability any degree of "saddening" of the dyes can be introduced and a mixture constituted which will give a colour just as nicely as the gum-bichromate or oil-worker can mix his pigments. This, however, is only conjecture on our part, a mere guess, which is perhaps father to the hope of bringing lantern slides into more exact correspondence with the methods of photographic printing. Certainly the "Diachrome" process should be tried by those who are dissatisfied with the all too few methods of producing warm tones on lantern slides.

"RUSKIN" MOUNTS.—When we mentioned some weeks ago the "art" mounting papers of Messrs. Houghtons we commented on their



suitability for the modern plan of multiple mounting. Messrs. Houghtons have now still further eased the way of the "multiple-

mounter" by issuing the boards in several stock sizes, in each composed of one board dry-mounted on another suited to it. The so-called "Ruskin" mounts are issued in two series, I and II. The former in browns and creams suitable for sepia, platinotype, and carbon-toned bromide and other warm-toned prints, and the latter in greys, blacks, whites, and greens for black and white prints. The prices per packet of one dozen in the following sizes are:—Quarter plate, 1s.;  $5 \times 4$ , 1s. 3d.; postcard, 1s. 3d.; half-plate, 1s. 9d. mounts present beautiful combinations of texture and colour, and the only suggestion we can make is that the inner board should be mounted, not in the centre as those we have seen, but slightly raised above this position.

#### CATALOGUES AND TRADE NOTICES.

A NEW EDITION of the "Lilywhite" Photographic Cyclopaedia has been issued by the Halifax Photographic Co., Halifax, by whom it is sent post free on application. This C edition gives a number of useful formulae for the use of the various "Lilywhite" products.

OZOBROME ENLARGEMENTS.—A circular of prices of ozobrome prints and enlargements from negatives and bromide prints has just been issued by the Ozobrome Company, 112, Allcroft Road, Kentish Town, London, N.W. The peculiar facility of the ozobrome process permits of very moderate prices, and there is the additional advantage that when necessary, a bromide enlargement can be taken off by the photographer and despatched for ozobrome copies, whilst the negative is retained for other purposes.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

#### FRIDAY, FEBRUARY 7.

Sutton Photographic Club. "How to Make Enlargements."  
Cardiff Photographic Society. Photography Prize Slides, 1907.  
Lancaster Photographic Society. "Birds at Home." Dr. Daniel.  
Larkhall Camera Club. "Photographic Chemicals."  
Epsom and District Literary and Scientific Society. "Enlarged Negative."  
Rotary Photographic Company.  
West London Photographic Society. "Stereoscopic Photography." J. E. Elliot.

#### MONDAY, FEBRUARY 10.

Scarborough and District Photographic Society. "The Hand Camera and its Possibilities." A. Pulford.  
Southampton Camera Club. "Some Cathedrals I have Visited." A. E. Hoad.  
Bradford Photographic Society. "The Theory and Practice of Time Development." W. F. Slater, F.R.P.S.  
Derby Photographic Society. "Bavaria." G. Trevelyan Lee.  
Gravesend and District Photographic Society. "Cheap Methods of Photography."  
Cleveland Camera Club. "Isochrome Photography." H. Wade.  
Bowes Park and District Photographic Society. Beginners' Class. Enlargement Evening.  
Guernsey Photographic Society. Rotary Carbograph Paper.

#### TUESDAY, FEBRUARY 11.

Royal Photographic Society. Annual General Meeting.  
Hanley Photographic Society. "To Torquay and Back by Road." W. Malkin.  
Keighley and District Photographic Association. "Platinotype." Clements and Glycerine Process, and After-treatment." W. M. E. Fearnley.  
Birmingham Photographic Society. "Bromoil." Demonstrated. James Gale.  
Liberal Border City Camera Club (Carlisle). Photographic Chemicals.  
Manchester Amateur Photographic Society. "The Production of an Illusion of Relief in Monocular Photography." C. W. Gamble.  
Hackney Photographic Society. Short Papers by A. J. Hyder, H. W. Lane, and J. Linley.

#### WEDNESDAY, FEBRUARY 12.

Central Technical College Photographic Society. "Bromide Enlarging." J. B. Swan.  
South Suburban Photographic Society. 1. "Wellington Bromide." A. C. Baldwin. 2. "Some Points in the Toning of Development Papers." C. Winthorpe Somerville. 3. "A Note on Reducers for Toned Bromides." H. Smith.  
Guernsey Photographic Society. "Rotox and Rotona Papers."  
North Middlesex Photographic Society. "A Talk on some of our Common Birds." E. P. Bayne.  
Coventry Photographic Club. The R.P.S. Affiliation (1907) Prize Slides.  
Borough Polytechnic Photographic Society. "English Gothic Architecture." T. A. Coysch.  
Leeds Camera Club. "The Story of Fountains Abbey." Thos. W. Thornton.

#### THURSDAY, FEBRUARY 13.

Bath Photographic Society. Practical Evening.  
Hull Photographic Society. "Scabro' Members' Set of Prints and Slides." L.C.C. School of Photo-Engraving and Lithography. "Illustrations in Daily Newspapers." G. S. Masood.  
Richmond Camera Club. "Flashlight Photography." The Bayer Co., Ltd.  
Liverpool Amateur Photographic Association. "In My Own Land—England." W. A. Taylor.  
Handsworth Photographic Society. "A Day in a Trappists' Monastery." J. A. Swift.  
Rodley, Farsley and Calverley District Photographic Society. "Mounting." Mr. Lax.  
London and Provincial Photographic Association. "A Two-Eyed Lens." A. Smith.



## ROYAL PHOTOGRAPHIC SOCIETY.

MEETING held Tuesday, February 4, the President, Mr. J. C. S. Mummery, in the chair.

A demonstration of the oil-printing process was given by Mr. John H. Gear, who, after dilating on the control permissible with the process, proceeded to give the working details which he had found satisfactory. A good size of print, Mr. Gear thought, was whole-plate, which was large enough for exhibition and not so large that the process of pigmenting became excessively tedious. Nevertheless, he often expended two or three hours on pigmenting a print this size. The gelatine of the paper should be thinly coated. He was not his experience that a thickly coated paper was necessary obtaining richness in the prints. The most suitable paper which had come into his hands was the No. 76 double transfer white of the Autotype Co. The No. 77 was a similar paper, but cream. The sensitiser consisted of

Ammonium bichromate .....	100 gr.
Sodium carbonate .....	10 gr.
Water .....	4 oz.

The part of this solution was mixed with two parts of alcohol to make the sensitiser, mixed at time of use. The mixture was applied to the surface of the gelatinized paper with a 2½ in. hog-hair brush, taking care to allow none to reach the back. Streaks, which were visible while the paper was wet, disappeared as it dried, and it is necessary to dry the paper absolutely, and at the same time to protect it from the slightest ray of daylight. Any faint action of light, which would be of no account in carbon printing, formed a film of insoluble gelatine on the paper and led to flatness and addensities in the pigmented prints.

When the paper was dry it was full of curl, and therefore before printing he found it well to press it for five or ten minutes in the printing-frame between the negative and the back without applying the springs to the latter. As regards exposure, it might be anything from two to twenty minutes or longer, according to the negative and the light, but a negative of good contrast but with no blue, such as the lecturer handed round, would print in bright winter light in four or five minutes. It was most important not to examine the print in daylight, but to bring it into a room lighted only by artificial light, such as gas or incandescent electric. When printed, the image was visible, and the printing should be done until the details were just faintly visible in the high-lights. In developing, the print was simply evenly wetted in water and then washed for about half an hour. The even action of the water was important, because if air-bubbles were left on the print at the first wetting it would be found that the marks would show when pigmenting. Mr. Gear advised beginners to dry the paper after development and re-soak it in water for half an hour before pigmenting. It could be kept for any reasonable time between these two operations, but even if wanted quickly he considered it an advantage, as the gelatine film then became more resistant.

In placing the wet print for pigmenting, he laid it on a piece of ordinary paper and carefully wiped off excess of water with fine filter muslin which had been previously well boiled (to remove particles of fluff from it) and dried. The print, after removal of the water in this way, was laid upon several thicknesses of blotting paper or "Robosal" board which had been soaked in water.

As regards the inks, the lecturer pointed out that they were the most troublesome part of the process. The stiffer the ink the more unsuitable was the print, but at the same time the more fully would the sensitized tissue have to be exposed: a thinner or softer ink would suit a less exposed print, and would give softer results. Not only that, but an ink which was suitable for one working temperature was not so for another, and again, when a print occupied the time in pigmenting, the ink which was in the right condition at the start would dry to a stiffer consistency in an hour or so, with the result that the worker would be in the position of applying ink with a harder consistency than that first applied to the print, a circumstance which was certain to result in failure. His own preference was to work with a slow-drying ink. For softening the ink, megilp had been recommended, but the lecturer succeeded better with linseed oil. A great cause of trouble was dust whilst the prints were being: it might be sprayed off with water, or sometimes brushed off when the print was dry with a hog-hair brush. As regards

brushes, Mr. Gear said he could work only with the so-called *pie-de-biche* (hind's foot) pattern. The worker should learn to hold them in his hand during pigmenting, not to lay them down where they could pick up dust or have their shape injured. They should be cleaned after use in petrol and put away with their protecting caps.

In the after-discussion Mr. Gear was asked where the brushes he used could be obtained. He replied that the few he had had been purchased by himself in Paris. (*Pied-de-biche* brushes as used by M. Puyo are sold by M. Bullier, 5, Rue Charlot, Paris.—Eps. "B.J.") Another speaker mentioned that he had purchased suitable brushes from a firm named Smith, of 117, Hampstead Road, N.W.

The inks Mr. Gear employed were litho' inks, but he believed M. Demachy used fine copperplate engravers' ink. Asked whether a rough paper might be used in the process, the lecturer said the roughest he had used was the Autotype Company's double transfer "cartoon." It was found that owing to the swelling of the gelatine coating a paper which was fairly rough was just as easily worked while it was wet, owing to the protecting gelatine, and when it dried the shrinkage of the coating produced the roughness desired in the finished print. Commenting on the use of a roller for pigmenting the lecturer said he had made some experiments, but was not yet in a position to recommend the practice. A speaker advised the use of a nap roller such as used by practical lithographers.

HULL PHOTOGRAPHIC SOCIETY.—The Secretary gave a demonstration on how to obtain rich brown tones on gaslight and bromide papers by the "sulphide" method, but without the somewhat objectionable smell given off with sulphide. The tones on gaslight papers are more reliable, it being a well-known fact that the quality of the tone on this brand of paper with sulphide has hitherto been unreliable.

The demonstration was a great success, and has set quite a number working the process on account of the beautiful rich browns obtained. The only smell is that of ammonia.

The prints are well washed, as usual, to clear them of hypo, and then bleached in any bleachers as used in sulphide toning. Then they are washed and toned in a bath composed of

1 grain of ammonium thiomolybdate.
10 minims .880 ammonia.
2 oz. of water.

The prints are then rinsed and cleared in a 5 per cent. solution of .880 ammonia (1 drachm to 20 oz. of water), which clears up the high lights or whites of the picture. The toning bath can be increased according to the size of the prints, and it is slow in action, which gives one time to watch the progress. Whilst thiomolybdate is rather expensive, it will be seen that it goes a long way, and the richness of the tones is sure to please many amateurs.

CENTRAL TECHNICAL COLLEGE PHOTOGRAPHIC SOCIETY.—Owing to Mr. Clougher's lecture on "Cinematography" having been postponed to February 12, the Society held its first lantern evening on Wednesday, January 29. Slides were shown by the Chairman, Messrs. Budden, Clougher, Roche Lynch, Runeckles, Tidmas, Vincent, Whitty, and the Hon. Sec., and a very enjoyable evening was spent.

SOUTH MANCHESTER PHOTOGRAPHIC SOCIETY. — On Monday, January 27, Mr. W. F. Slater, of Kodak, Ltd., lectured on "The Theory and Practice of Time Development." He dealt with the old method of ocular development and its disadvantages, and followed on with a description of factorial development, slip development, and time development.

SOUTH LONDON PHOTOGRAPHIC SOCIETY.—"Carbograph" was demonstrated on Monday, February 3 last, before the members of this Society, by Mr. Jackson, of the Rotary Photographic Co.

CROYDON CAMERA CLUB.—The mechanical manipulation of the finished negative and the gentle art of "faking" were respectively dealt with by the President (Mr. J. M. Sellors) and Mr. Harpur. The first-named illustrated retouching, and the various methods of local reduction by abrasives, "Negafake" pencils in this connection being highly recommended for reducing small scattered lights. The correct way to "knife" the film was also shown, a somewhat deli-

cate operation for the average amateur to undertake, but accomplished in quite professional manner by the demonstrator, with the aid of various surgeon's scalpels possessed of a razor edge. The anxiety displayed by the President for the safety of these instruments on the approach of some members to examine them compared favourably both in manner and temper with a gouty patient's solicitude for an inflamed big toe.

Mr. H. P. C. Harpur, who as a matter of fact preceded Mr. Sellors, arrived late, but at once got into his "stride" and maintained it with unabated energy for a considerable time. On the subject chosen there is little doubt that Mr. Harpur could speak continuously for a week at least; it was therefore excusable that the eventual slackening was due to a hurried whispered communication from the Hon. Secretary.

Amongst the various systems of faking shown and explained, a most ingenious method of combining figures, or sheep, or cattle, with a landscape was brought forward, and may be new to some. The case taken was that of introducing sheep. The negative containing them was first very carefully blocked out, leaving only the sheep visible. A transparency by contact was then made, and placed film to film with an unexposed plate, both being attached to the enlarging easel, transparency outwards. The landscape negative was next placed in the lantern, and projected on to the sensitive film through the transparency, and the former developed and fixed in the usual way. The resulting composite transparency can obviously be adjusted in absolutely correct register, and is employed for making a fresh negative, enlarged or otherwise. The method has certain apparent limitations. In the example given, for instance, it is presumed that the transparency of the sheep has sufficient stopping power to prevent their recording on the adjacent film. If this occurred to a slight extent, Mr. Harpur said (presumably referring to the ferricyanide reducer) "that a touch of Howard Farmer would rectify matters," or alternatively transparent parts in the sheep transparency might be temporarily blocked out. Some general reduction either of the sheep or of the landscape transparency might also be necessary to produce a harmonious whole. He had further elaborated the system so as to print in a sky as well. In this case the sky would be separated from the landscape portion by the thickness of the glass. The slight unavoidable diffusion in the reproduction in the negative form was generally an advantage rather than otherwise.

During the evening Mr. S. H. Wratten exhibited a new dark-room lamp, fitted with various safe-lights, a sliding panel bringing one or the other into use; so far as possible he had made it "fool-proof," and he had much pleasure in presenting it to the club for the use of its members.

**SOUTHAMPTON CAMERA CLUB.**—On Monday evening last a lecture competition was held, when Mr. Smith Whiting was adjudged the winner. He gave a brief account of bird-life photography, which was illustrated with some excellent slides. Mr. F. G. Ryder also gave an amusing short description of camp life and Mr. W. R. Kay concluded with a brief account of his mountaineering experiences, which was accompanied with a series of splendid views of the notable peaks in Switzerland.

## Commercial & Legal Intelligence.

**BRITISH PHOTO. PAPER COMPANY, LTD., LAMBETH, S.W.**—Lien January 20, £50 6 per cent. debentures, part of £5,000; amount previously issued, £3,290; no (assets).

**DISSOLUTION OF PARTNERSHIP.**—The partnership existing between Frank Victor, Horace Sinkins, and William Henry Franklin, photographers and photographic dealers of Slough, carrying on business as The Artistic Portrait Company, has been dissolved by mutual consent. All debts due or payable will be received and paid by Frank Victor Horace Sinkins.

**NORWICH BANKRUPTCY.**—A receiving order in bankruptcy has been made against Percy John Swain (carrying on business as John Percy), photographer, of 37, Earlham Road, Norwich, formerly in partnership with Louis Smith as Louis Smith and Co.

## News and Notes.

**KODAK, LTD.**—Information has reached us that, owing to the retirement of Mr. George Davison from business, there will shortly be a change in the managing directorship of Kodak, Limited. Mr. Davison's successor to the post is said to be Mr. W. S. Gifford who is already well known to the various departments and members of the firm for his ability, tact, and courtesy.

**"THE PHOTO-MINIATURE."**—We are asked to announce that, commencing with the present month, arrangements have been perfected whereby "The Photo-Miniature" (established 1899) will in future be published at regular monthly intervals throughout the year. The current issue is devoted to the subject of "Tank and Time Development." "The Photo-Miniature," which is freely illustrated, treats in detail of a different subject each month, and in its new pages gives a comprehensive survey of photographic progress in all parts of the world. Most of the eighty-four published numbers of "The Photo-Miniature" are in print and, together with copies of the current issue, are obtainable of the London agents Messrs. Dawbarn and Ward, Ltd., 6, Farringdon Avenue, London E.C., and of all photographic dealers. Price 6d. per copy.

**THE TEMPLE OF FAME TO-DAY** (writes the *Telegraph's* Paris correspondent) is the photographer's shop. Whose portrait is the best known? The result of an inquiry made is only what we expected for a fair lady comes out at the top of the list. Take a hundred photographs of living celebrities sold in the Rue de Rivoli, and fifteen of them will be found to represent Madame Otero, called "the beautiful." This is only as it should be. But it is a little surprising to learn that the second place is equally divided by Raoul Boucher, a muscular music-hall wrestler, and by M. Pierre Loui who is surely the antipodes of a prize-fighter. Parisian eclecticism is thus proved. The divine Sarah comes only third with eleven pictures per cent. Mademoiselle Cléo de Mérode, a once famous dancer about whom a young writer some years ago wrote a thin philosophical treatise "On Cléo de Mérode, considered as a Popula Symbol," shares fourth place with a novelist whom one had not hitherto thought so very famous, Mr. Félicien Champsaur.

**THE ROYAL SOCIETY OF MINIATURE PAINTERS.**—The thirteenth annual exhibition of the Royal Society of Miniature Painters, is now on view at the Modern Gallery, 61, New Bond Street, W. The exhibition will be open to the public until February 22.

**A "ROTARY" COMPETITION.**—The current issue of "Photo Notes" announces a competition in which six prizes of half-a-guinea each are offered for prints suitable for reproduction as frontispieces to our worthy contemporary. A similar competition open to professional photographers only is announced. Further particulars will be found in the February issue of "Photo Notes" just published.

**THE NEW AMPHITYPE PROCESS,** also the Vandyke direct zinc process, will be demonstrated for the first time in the United Kingdom by Mr. Archer Clarke, at the new premises of the London and Provincial Photographic Association, "The Old Napier," 25, High Holborn, W.C., nearly opposite Chancery Lane, on Thursday, February 20, at 8.15 p.m. Admission free.

**"THE RAJAR" CAMERA,** offered monthly by Messrs. Rajar, Ltd., of Moberley, Cheshire, for the best print on "Rajar" P.O.P., has been awarded to Dr. F. G. Baker, Ellenborough Park, Weston-super-Mare, this print having been judged the best received during January. The paper on which the print was made was purchased from Messrs. The Postal Photographic Company, Rotherham.

**CINEMATOGRAH EXHIBITIONS.**—At the meeting of the London County Council, on Tuesday, the following motion, proposed by Mr. Reynolds, and seconded by Sir John Benn, was agreed to unanimously and without discussion: "That, in view of the highly dangerous character of unlicensed cinematograph exhibitions, the Home Secretary be asked to receive a deputation from the Council to urge the necessity for immediate legislation to make it illegal for cinematograph exhibitions to be given in premises which have not been licensed for the purpose, and that the Theatres and Music Hall Committee do make the necessary arrangements for the deputation."



## Correspondence.

*We do not undertake responsibility for the opinions expressed by our correspondents.*

*Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*

### PHOTOGRAPHERS AS PROFESSIONAL MEN.

To the Editors.

Gentlemen,—*Re* etiquette among semi-professional photographers, have heard of a photographer who was taking views for his company, going into a certain district, and buying a packet of postcards, or a book of views, and copying the views from the same standpoint, and calling them standard views. Can he call them his own? I think not; they are, as you say, piracy in its worst form. I think every photographer should be capable of choosing his own views, or position, and being a little original, and not living on other people's brains.—I remain, yours faithfully,  
Swindon.

NUNQUAM.

To the Editors.

Gentlemen,—I think "Status" is taking the case of photographers being recognised as professional men in too serious a light. I fully endorse his remarks regarding our leading men and others having ouch and ideals shown in their work, and I am sure that not one of such men turning out artistic efforts of the highest merit, have any cause of complaint against their social position. As far as raising the standard of photographers is concerned, I should like to ask, who can do this better than the worker himself? The work of an artist will always meet with merit, and as far as the rest are concerned, I am afraid they must remain photographers, and reap their money-grubbing reward, which to the true artist is of secondary consideration.

Another point is this. He suggests the weeding out of the unfit. Who are the unfit? The midget man may turn out technically sound photography, though he certainly is not raising the standard of the photographer.

No, it won't do. Each worker must rest content with his own reward, which he will find of greater satisfaction than any brass plate.—Yours truly,  
L. R. GOODYER.

The Goodyer Studio,  
33, High Street, Bognor.

### AGAR-AGAR EMULSIONS FOR PAPERS AND PLATES.

To the Editors.

Gentlemen,—We notice, in the issue of "The British Journal of Photography" for January 31, 1908, page 79, that you publish an article on the paper read by us before the Royal Photographic Society in December last. Perhaps a few notes referring to your remarks may be of interest.

The method suggested by you for filtering the agar-agar should do admirably; we tried to obtain a small centrifugal machine for experiments, but were unable to do so. We will, however, fit up a centrifugal apparatus and allow the hot agar solution to set in it. We will communicate the results to you, giving details of speed, etc.

You say that, at the present time, the value of agar will be as a vehicle for papers; in this we entirely agree with you, and we would mention that we have coated several batches of 2 to 4 litres on a machine (of the Flinch (?) type) actually used for the manufacture of large quantities of paper in a factory. In this work, straining through linen was found to be quite sufficient. At first we used bainsook, but this left suspended matter in the agar, so that, on drying, the paper showed glistening specks on the surface. We feel convinced that the question of filtering is not a difficult one for the purpose of manufacturing papers; the only English agar paper on the market shows no marks caused by insufficient filtering. We suggested the use of filter paper for those purposes where a perfectly

clear solution is needed, such as work on plates and films, or for chemical work. In these experiments on a large machine, we coated several lengths of paper, some measuring about 100ft. and some less; it was festooned, dried, reeled, and cut up, in an actual factory, precisely as is done with gelatine papers. The papers showed no cracks whatever, but on the contrary seemed to be coated most perfectly.

With regard to rapid drying, though most of our batches are dried in half an hour to an hour, nevertheless we have had some coatings wet for fifteen to twenty hours, without any signs of cracking. The only trouble we have had has been due to the curling of the edges of the paper; but, as will be seen later on, we use special paper, and this is of importance. The wet solution which has been allowed to set on glass, does crack when pushed with the finger, as you say; it is what may be termed "short" and tender. But we have never noticed any tendency whatever to crack on paper, in any stage; nor will the film crack on glass when once it has been dried. We have been attempting to make long films of agar, and have found that it was very difficult to manipulate the wet film; when once dried, its tensile strength is considerable.

You mention the peculiarity of agar, that when deposited on a glass plate, it causes a film of water to separate out between the plate and the pellicle; we found this also, but when once the pellicle has dried on the glass, or even partly dried, it adheres to it very firmly, and can then be washed with hot water and treated somewhat roughly. Indeed, sometimes the pellicle cannot be removed from the glass, except by boiling with aqua regia.

With regard to your remarks on maturing, we are making a series of experiments, the results of which we shall communicate later. The bromide paper which we showed had a speed equal to that of Nikko, and it was obtained by heating our emulsion to 100 deg. C. for five minutes; we believe that this is a greater speed than would have been obtained if gelatine had been used.

To refer again to coating on paper. The quality of the paper itself is a subject to which a considerable amount of attention has been given, as upon it depends much of the success of using agar. Paper upon which an emulsion, whether in gelatine or agar, is laid, consists of a basis carrying a layer which should be impermeable. The basis, even in some of the best papers, consists largely of wood pulp, and often starch. The impermeable layer contains pigments which are composed of various substances; the object of this layer, we take it, is partly to obtain a surface free from marks or specks, and partly to prevent the chemicals from "wandering" into the basis. If they do so wander, the paper and the chemicals interact and the P.O.P., as such, is spoilt. The impermeability of the second layer is obtained by us by coating a plain paper with a solution of agar, and drying. Wood pulp consists of a class of cellulose—lignocellulose—which is very much more reactive than pure cellulose, and which is much more liable to deterioration, therefore, than pure cellulose. On this account we tried to obtain some papers for P.O.P. emulsions made of pure rag pulp; being unable to do so, however, we had some plain paper made specially for us. This is liable to contain specks of iron, but the presence of these marks can be obviated by replacing the iron beaters used in the manufacture of the pulp by others made of different material; so that this should not cause trouble. We tried using this plain paper without any second layer, but it was too porous.

Our paper is made of nearly pure rag pulp, specially sized, coated with a solution of agar, dried, and reeled; this is then coated with the emulsion and dried in the usual manner. One of us has taken out a patent covering this, and for that reason no mention of any work on papers was made when reading our paper before the Royal Photographic Society. This may appear to have been an omission, but we thought it undesirable to discuss work in which we had a commercial interest.

This paper was adopted as a result of our attempts to get a paper least likely to "go wrong." We find that it is superior to any other, dries quicker, keeps well, and holds the emulsion better than any other we have tried. Of the samples of paper as ordinarily used which we have tried, some gave good results and others bad, using the same emulsion; some were hard and others soaked up the emulsion or water as though the surface was all chalk; moreover we heard that it was impossible to obtain a supply of the best paper. Since adopting this special paper, it has been found out that agar emulsions on papers ordinarily used for emulsions, are liable to give bubbles when toned, etc. We have not examined this yet, but we

note that very few of our experimental coatings show it. The expansion of agar on soaking is not great; a piece of film, dried at 100 deg. C., then soaked in water for two days, expanded 1.8 per cent. in linear dimensions; this is less than gelatine.—We are, Gentlemen, yours faithfully,

W. F. COOPER, B.A., F.C.S.

W. H. NUTTALL, F.C.S., F.I.C.

#### GLAZING P.O.P. PRINTS.

To the Editors.

Gentlemen,—Noticing recently that several of your readers have complained of gelatine prints sticking to the glass when being glazed I may add a little of my experience. Until I treated my prints or postcards (P.O.P., bromide, and gaslight) in the following manner I frequently had trouble in glazing, but now I never find one to stick. After washing the prints thoroughly from free silver (in the case of P.O.P.), I place them in an alum bath of 8oz. to 80oz. of water. In this they remain ten minutes, and I then wash and tone them in the usual way, drying them completely before passing to the glazing process. The plate glasses for this latter are prepared as follows. A small piece of cotton wool is well soaked with methylated spirit and the glass cleaned with this, rubbing over with a clean cloth. In wetting the cotton wool with spirit I simply hold the wool to the neck of the spirit bottle, give the latter a shake, and clean the plate with the quantity of spirit thus absorbed. I then French chalk the glass and rub clean with another cloth. Water from the tap is now allowed to run all over the glass two or three times, and without wiping but straight from the tap the glass is placed handy for the prints to be placed on it. These are then squeezed firmly down and left to dry. The secret lies in letting the tap run on the glass after polishing with French chalk. I have polished some thousands and never had a single one stick after using the above method. I am sure of those of your readers who have had misfortunes in this direction will try this method, they will find that it guarantees success.—Yours truly,

56, Castle Road,  
St. Albans.

JOHN DE VOIL.

#### MR. FREDK. H. EVANS'S PHOTOGRAPHS AT RUSSELL SQUARE.

To the Editors.

Gentlemen,—Your kindly critic on my R.P.S. exhibition says there are no new things there. May I point out that there are sixteen prints now exhibited for the first time, and that nearly all the sixty on the walls have been specially mounted for this exhibition to show as great a variety as possible in this method of mounting.—Yours, etc.,

FREDERICK H. EVANS.

34, Fox Hill, Upper Norwood, S.E.

#### THE "B.J." IN ASIA MINOR—AND ELSEWHERE.

To the Editors.

Gentlemen,—We notice one of your advertisers mentions this week that they have received a reply to an advertisement from Turkey-in-Asia, and, peculiar to relate, we received one reply from Kania and one from Amassia, both in Asia Minor, and also inquiries from Columbia and British Guiana and Peking, all this week. This seems to show that the "British Journal," as far as we can see, practically holds the sway the world over, as we receive hundreds of foreign communications every year as the result of our advertising. The above refers to the "British Journal of Photography."—Yours truly,

THE HALIFAX PHOTOGRAPHIC COMPANY.

Halifax, February 3, 1907.

**DEATH OF A VETERAN PHOTOGRAPHER.**—Mr. Henry Gordon, who for many years carried on business as a photographer in Aberdeen, died on January 31 at the residence of his daughter. Mr. Gordon was in early life a gamekeeper, but while employed in Perthshire he took up the study of photography, and prosecuted it with considerable success. In 1858 he commenced business as a photographer in Aberdeen, first in Union Terrace, and subsequently at establishments in other parts of the city. Mr. Gordon was eighty-six years of age.

## Answers to Correspondents.

#### PHOTOGRAPHS REGISTERED:—

A. C. Milne, The Studio, Brechin. *Two Photographs of the Rt. Hon. James Alexander Campbell, M.P.*

W. Skewes, 1, Park Crescent, Wigan. *Photograph of the Wigan Football Club.*

G. de B. Porter-Higgins, Leighton Studios, Redcliffe Road, South Kensington. *Photograph of Geo. Belcher.*

A. Russell, 6, Wild Street, Liverpool. *Photograph of Fred. Lindsay, Champion Whip Manipulator.*

**DYE MORDANTS.**—I wish to coat glass thinly with gelatine, dye it, and then, without varnishing, render the dye waterproof. Can you inform me (1) what dye or mixture of dyes will give me a good orange red shade, (2) what dye or mixture of dyes will give me a good blue, and (3) what mordant to use in each case?—JUVENIS.

(1) Filtered (Hoechst), or tartrazine and rose Bengal, bolam red, Biébrich scarlet, fast red, azo red, etc. (2) Methylene blue, victoria blue, naphthylamine blue, patent blue, etc. (3) It is impossible to answer this question satisfactorily without knowing exactly the dye that is to be used. We cannot say which dye will answer our querist's requirements, because we do not know what he is aiming at. We would suggest that a careful study of the handbooks on dyes and dyeing, to be found in the Patent Office Library, which is open free from 10 to 10 daily, would enable our correspondent to find the correct mordant to use when he has found the dye that will suit his work. We have only mentioned a few dyes, but there are hundreds of red and blue dyes which will dye gelatine, and we cannot spare the space to enumerate them all with the necessary mordants. Naturally, it occurs to us that it would be possible to render the dyed gelatine insoluble and impermeable by the aid of any of the well-known hardening agents.

M. S.—The instrument is a very well made meter of the "extinction" type. It is a question whether this is preferable to others of the sensitive paper pattern.

J. W. D'A.—A most reliable method is that on p. 808 of the "Almanac."

**TESTS FOR HYPO.**—1. Will you be good enough to give me one or two simple tests of detecting the presence of hypo in water solution and raw paper? 2. Also the test for iron? 3. Could you tell me where I could obtain a book containing simple chemical tests not too complicated for one not having much chemical knowledge.—SAM JONES.

We prefer the iodide test. Boil a fragment of starch in water to a clear solution, and when cool add a drop of tincture of iodine. The solution is dark blue. A test tube of water, tinted blue with a drop of this iodine-starch solution, will be decolourised by solution containing hypo. Another test is the "permanganate": Dissolve 2 grs. potass permanganate and 20 grs. potass carbonate in 40 ozs. of water, and similarly tinge a test tube of water pink with this stock solution. The colour is discharged on adding solution containing hypo. In the case of raw papers, soak in water, and test as above. 2. Solution of potass sulphocyanide gives a red coloration. 3. We should say one of the books on raw papers would be of service to you, but tests applied without some experience in chemical testing are not likely to be of much use.

**ENAMEL TABLETS.**—Could you inform me where I could obtain the enamel tablets for use in connection with your article, "Profitable Forms of Carbon Printing," in issue dated January 24?—SEEKER.

The enamel tablets may be had from Messrs. Lecherlin Barbe, Ltd., 95, Jermyn Street, London, S.W.

E. W.—Contrary to our custom to make distinctions in such general terms as you suggest. If you can name the specific class of work for which you propose, we might be able to assist you.

**FORMULÆ.**—(1) Will you kindly give me a recipe for making ink for a metal stamp which, when dry, will be glazed or enamelled in appearance, similar to the impression from a printer's copper plate, which is used for notepaper? The ink for the above metal monogram was made according to your recipe for ink for rubber stamps, page 840, "B.J. Almanac," only I used aniline green dye. (2) Also re ground glass varnish (page 807, "B.J. Almanac"), does the increase of benzole give a finer and thinner matt surface, and may aniline dyes be used for tinting? (3) Also, would you tell me whether malachite green, aurantia, etc., are dyes, and if about the same price as aniline dyes?—C. W.

(1) You must not expect to get the same effect from an ordinary stamp as is obtained on the embossed headings of notepaper. For



hose a special ink, of a fatty nature, is employed. It may be had from any of the houses that supply printer's materials. Possibly, if you were to add some gum to the ink you are using you would get a higher gloss. (2) The increase of benzole adds to the coarseness of the grain. (3) They are, and about the same price.

**PLEX.**—Of the cameras, K and M are practically the same instrument, and a very strong and reliable one, too. L is perhaps more used than any other camera of the kind, and is the best, in our judgment, for hard professional work. The latest pattern (with new pattern shutter) is as perfect as can well be. N is a beautiful instrument, but not quite as strong as V, and not quite as convenient, for your purposes. Of the lenses, we should advise one that can be worked at  $f/4.5$  when required, and should advise D or F. I is equally good, but its separability into two single lenses is not an actual gain upon such a camera. E, at a somewhat smaller aperture, is also in every respect a suitable lens. We advise you to select a half-plate size for press work, and a focal length of 8 to 9 inches, not more than the latter.

**ING.**—The formula as you have made it up is practically the same as that given by Namias. The article stated that the bath in question had not the same rapidity of action as others with more chrome alum in them. We suggest that the slowness of your negatives in drying has not been due to the bath, but to the recent cold and damp weather.

**ERTURE.**—The great aperture is obtained by air spaces in the lenses, a construction which calls for more careful shielding of the lenses from direct strong light than is the case with cemented double lenses such as the second one you name. This constitutes the most important point to be considered. As a rule, the large-aperture lens will be equal, if not superior, to the  $f/6$  lens when stopped down to this latter aperture.

**W.**—1. It does not follow that the omission of mention is a proof of non-popularity. It is usually a question of discount and profit to the wholesaler or retailer. You would not be correct in supposing that the instruments are less suitable for their purpose. They are certainly of a very high order. 2. Of the two we should select E.

**E.**—It is a very good lamp, and has been much used by the best flashlight workers, but you will not find much difference as regards smoke compared with other good powders, though less than with the powder blown through a flame.

**P. A.**—The address of the secretary of the Professional Photographers' Association is 89, Albany Street, London, N.W.

**DIUM SULPHIDE.**—1. Can you please tell me how much of the saturated solution of sodium sulphide I should take to equal 1 oz. of the dry crystals? I find it impossible to keep this salt dry. 2. Re the instructions recently given for making lantern slides by the albumen process, can the albumen be bought ready prepared? If so, where? 3. Should the eggs used for the purpose be new-laid, fresh, shop, or cooking eggs?—CHARLES MARSHALL.

1. The best way is to make a solution of definite strength—say, one part of sulphide to two of water; then you know what you have got. That is better than relying upon "saturated" solutions. 2 and 3. Good fresh eggs are all that is necessary. It is not well to employ preserved eggs for the process.

**STUDIO.**—I have to build a new studio, as per sketch. I should be pleased to receive your advice as to height, shape, amount, and if my particular glass. I have a free hand, and can build as I like, but it must be in that position, and available for electric light.—NEW STUDIO.

We must refer you to pages 635 and 659 of our last volume, August 23 and 30 last year. In these articles you will find all the information you desire. It is very fully given—much more so than can be done in this column. The proportions 30 x 40 ft. will enable you to do all that is required in professional portraiture.

**ATE MARKING.**—1. Can you kindly tell me how the plate-mark impression on the enclosed card is done, and when—before glazing or after? 2. If I need a press, where could I buy one?—W. S.

1. The plate marking is done, after the glazing, as follows:—Have a plate of zinc or copper the size of the desired mark, lay that on the bed of a rolling press, place the print in position on it, and roll it through with a piece of thick india-rubber, or printers' blanketing, on the back. 2. At any of the dealers.

**ING RESIDUES.**—1. We have a quantity of silver waste, i.e.,

washing from silver prints before toning. Do you recommend rough salt or acid for throwing down before drawing the clear water off? Also, do you test same first with a weak solution of liver of sulphur, to see whether all the silver has been thrown down? 2. Also the silver waste from hypo fixing baths; do you throw this down with liver of sulphur, and test with the same?—W. B.

1. The common salt is usually employed. If the precipitate does not subside in a day or two, add a little hydrochloric acid and well stir. If the addition of a solution of salt to the clear liquid does not produce cloudiness you may know that all the silver has been precipitated. 2. Yes, in both cases.

**WAGES QUESTION.**—Kindly give me your answer to the following: Mr. —, of —, advertised for an operator and retoucher. I answered the advertisement, and sent specimens of my own operating and retouching, asking £2 2s. per week. I also gave references for two and a half years, and was engaged for the 20th of January. Of course, I left Manchester on the 18th. I was put to retouch at a window that is painted inside all over, and I asked him if he had not got a better place to retouch. Of course, he said that was all right. Well, I asked for a mirror, to make the best of it. But it was not a success. On the 21st, in the evening, he told me to quit work, and clear out. Now in that case I consider I am entitled to two weeks' wages. On Friday (24th) he sent me one week's wage, and considers this final. I am sure in all my experience I never had anything like it. I will abide by your opinion.—RETOUCHER.

It appears that probably the work did not suit, possibly it was not up to the specimens shown. It may be that the second week's wages might be recovered in the county court, but if the work done by the querist in his new berth was not equal to the specimens he submitted that is doubtful.

**STUDIO LIGHTING.**—My present studio light gives exactly the lighting I require for the majority of sitters without blinds. For brighter days in the near future I shall require to get the same effect while softening light for sitters' eyes. How can I do this without degrading the high lights? A reply in your esteemed journal will oblige.—SIMILARITY.

As no mention is made of the form of the studio or its aspect, we can give no advice. All we can say is that you use screens or blinds to stop out such light as is not required.

**PRINTS ON CHINA.**—I have an order to do some photographs on china plates. They must be transparent (but not carbons). I was told they were printed and toned in the ordinary way, either on collodion chloride or gelatine chloride—I do not know which. If you can assist me I will be very much indebted, as I do not know how to proceed. The only information I could get was that they were put down on glass, and when dry the paper was stripped off, leaving the film, which was then transferred to the plate. This is where I find the difficulty.—W. C.

As you describe the method we must confess we do not understand it. However, it must be a troublesome and roundabout way of doing the work. By far the simplest way is by the carbon process and the results not only the best, but are more permanent than those by any silver process.

**BLEACH-OUT PAPER.**—(2) I have been trying to find out how the Uto paper is made. Can you tell me what dyes are used? In the note on Uto paper in the "Almanac" it mentions turpentine, apparently as a sensitiser. Does it mean mixed with bichromate or chlorides? I suppose the dyes are coal tar, as they bleach out with benzole.—LILIAN E. BLAND.

(1) C/o The American Express Company, Waterloo Place, London, W. (2) Details of the manufacture were published in Dr. Smith's patent specification, published in the "B.J." for October 11, 1907. Turpentine as a sensitiser is quite independent of bichromate, as you will see on referring to the specification above quoted.

**THREE-COLOUR FILTERS.**—1. Under what name are the new rapid filter dyes of Messrs. Meister Lucius and Brünig sold? 2. Please give formulæ for filters, using the new rapid filter dyes—blue I., green I., and red I. 3. Do the formulæ issued with the old dyes apply to the new ones also? 4. Should not Prof. Novak's formulæ on p. 840, "B.J. Almanac, 1907," read: Water 150 ccs., instead of 1.50 ccs.? 5. Assuming 150 ccs. to be correct, the formula would figure about 1.31 grain of green dye and about 1.15 grain of red dye to the square inch of finished (cemented) screen, while the directions accompanying the dyes figure out 1.57 grain for the

green—about one-half the strength, and 1-72 grain per square inch finished filter for the red screen, about 1-5 the concentration of Prof. Novak's formulae. If both sets of formulae are correct, I do not quite understand how Novak's filters can transmit 33 per cent. more light. Will you kindly explain this if possible? 6. I send you small sections of flexible filters made substantially in accordance with the formulae sent out with the above dyes, a copy of which I enclose. Will you kindly give your opinion of them?—**PHOTO-COLOUR.**

1, 2, 3, 5, and 6. There is no reason to suppose that the dyes you have obtained are not correct. The filter strips seem to be the colours given by the new filter dyes of Meister's. We do not think they are the best for three-colour work, and we enclose you formulae for three-colour filters, which have given the best results in three-colour work. If you were to try these dyes—which you can easily obtain from the agents of Meister Lucius and Brüning—you would find them much more satisfactory. We should certainly advise you to test the filters on a spectrum camera if possible, or at least on a pocket spectroscope. You could buy Wratten's gelatine strip ready prepared and spectroscopically tested for 2d. per square inch.

#### FORMULÆ.

To coat 100 sq. cm., take 16 ccs. 10 per cent. gelatine, which should contain the following quantities of dyes for 100 sq. cm. glass:—

Red filter	Rose Bengal .....	.08	gm.
	Rapid filter K (yellow) ...	.08	gm.
	Gelatine .....	1.6	gm.
	Water .....	16.	ccs.
Green filter	R.F. green .....	.01	gm.
	Naphthol-green .....	.01	gm.
	Rapid filter K (yellow) ...	.01	gm.
	Gelatine .....	1.6	gm.
Blue filter	Water .....	16.	ccs.
	Victoria blue B .....	0.03	gm.
	Naphthol-green .....	.006	gm.
	Gelatine .....	1.6	gm.
	Water .....	16.	ccs.

4. The formula should read 150 ccs.

**FLASHLIGHT.**—I have read the JOURNAL for the past thirty years. This is the first time I have asked a favour of you, so trust you will be good enough to oblige me with any information you have on flashlight photography. I have used a "Slingsby's," and now have one lamp (large size) of "Todd-Forret." Can you say how many of the latter I require to photograph a group 40 feet wide, say 40 feet away from camera? Any advice will be welcome.—**H. F. J.**

We are afraid it is difficult to give precise information since so much depends on the colour of the surroundings, that is to say on the amount of reflected light. A very rough estimate is 300 grains of magnesium, using a lens at  $f/11$  and a plate of fair rapidity, about 200 H. and D. You can estimate from this and from the average charge of your lamp the number of lamps necessary. A more practical method would be to use a long-trail of a good flash powder, such as Agfa, making one or two experiments beforehand. The powder should be laid in a shallow trough made from a piece of tin plate.

**CIGARETTE PHOTOGRAPHS.**—Last September a firm applied to me for a group photograph of West Ham United football team (1907-8), same as you registered for me. They stated they required it for box stiffeners. I supplied them with a copy of same. Now I find a cigarette firm have issued with their cigarettes separate photographs of some of the prominent players copied from my group, which they say the above firm has done for them. These photographs form no part of a box whatever, but are individual photographs quite separate from the box, a sample of which I am sending you. What do you advise in this matter?—**A. J. REEVES.**

It is apparently a case of infringement. We take it that you did not sell the sole copyright in the photograph to the first firm, but only granted them the limited use of it for the purpose specified. In these circumstances the firm has no right to make other use of the photograph or of parts of it, and their action, as also that of the cigarette makers, is an infringement. We should advise you to write to the cigarette firm pointing out your proprietorship in the photograph, and asking them what they propose doing in the matter. It is possible they are innocent

infringers, and though that is no legal extenuation, it is often advisable to agree to, say, double the reproduction fee which would have been paid in the usual course. You should, however, make any offer in first writing them.

**DRAWING-UP LEASE.**—I intend altering premises I now occupy and taking same on lease. Would it be legal for myself and landlady to write out the lease or agreement without a solicitor, provided it was properly stamped and witnessed?—**LANDLORD.**

Yes; it would be quite legal to do so. But unless the conditions of the lease are properly specified it may lead to future litigation. There is an old aphorism: "The man who acts through his own lawyer has a fool for a client."

**J. E. GUBBINS.**—We think you will find what you want in Goetz Zeiss price lists. The lens you mention in the next size larger will cover a bigger circle than you require. Why not get this instead of the 3½ inch? A 13 inch circle is rather large for a 4¾ inch lens and not many will cover it.

**PARAMIDOPHENOL.**—(1) Please oblige us by informing us, through "B.J.," why the paramidophenol developer—

Potassium metabisulphite .....	300	gms.
Water, distilled .....	1,000	gms.
Paramidophenol .....	100	gms.

to which we add a saturated solution of caustic soda, does not develop so well and does not develop so well as the original rodinal developer. (2) In the "Almanac" is said caustic soda or potash. We suppose this to be "solution." (3) It has been said that there is some special precaution to take by mixing this developer. We would be of the kindness to inform us whether our developer is quite the same as rodinal—**VIKING (Copenhagen).**

(1 and 3) We cannot say whether this formula is the same as that used in preparing the commercial solution of rodinal. Probably it is not, if it does not keep as well. (2) This should be a saturated solution of caustic soda or potash.

**WOGHT.**—We have no objection to answering queries which call for looking up the literature of photography, but to answer you in detail would mean a week's work. Fancy a world deprived of seven days of the "British Journal"! If you will let us know the specific paper of Carey Lea (he wrote scores) we will look up for you. As for Hurter and Driffield, we must refer you to the references in Mees and Sheppard's "Investigations in the Theory of Photographic Processes" (Longmans, 6s. 6d.). The reference to Roscoe is "Phil. Trans.," 1857, p. 355-601.

**PHOTOGRAPHING FURNITURE.**—Will you be kind enough to answer the following queries in Correspondent's Column? (1) Do you know of any book published on photographing antique furniture, china, etc., or articles on this subject in any paper? (2) Can you suggest something to rub over highly-polished furniture to do away with extreme high-lights and reflections, and which can easily be removed?—**ANTIQUE.**

(1) No book is published on the subject. (2) Photographs, taken for illustrating furniture catalogues, are usually made before the furniture is polished. With antique furniture, as a rule, there is not sufficient polish on it to give trouble to the photographer, if it is lighted with diffused light, subdued. We have heard of good bodied stout being used to subdue gloss, but we have had no experience with it ourselves. It could easily be removed with wet sponge.

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## SUMMARY.

Royal Photographic Society.—The names of the new officers appear on page 127. We are pleased to say that Mr. J. C. S. Murnery has consented to accept the Presidency for another year. (P. 127.)

Mr. Thomas Bedding is announced as joint-editor of the "Photofinisture." (P. 113.)

Sepia Bromide.—A secret process again figures in the county-court. (P. 128.)

The common law rights in unpublished drawings was the subject of an interesting case in the High Court last week. (P. 122.)

The status of the photographer as a professional man is the subject of several letters from correspondents. (P. 128.)

Mr. Tilney's review of two exhibitions of paintings of London points to the enormous field still unexplored by photographers. (P. 123.)

Mr. H. E. Smith contributes some notes on his new thiomolybdate toner (p. 117), which has now appeared on the market. (P. 126.)

Mr. W. H. Smith, at the Croydon Camera Club, has some useful hints to give on platinum printing. (P. 117.)

Pinhole aperture numbers, glazing P.O.P., the development of autochromes, sepia-platinum paper, and photographic matters in the Near East are other subjects discussed in our correspondence columns. (P. 129.)

Dr. Zschokke replies to the recent paper by Dr. Wandersleb on distortion in photographic lenses. (P. 115.)

The conclusion of Mr. R. J. Wallace's paper on the modern sensitizers appears on page 119.

The advantages of a diaphragm shutter which is rapid at its highest speed is emphasised by Mr. Chapman Jones. (P. 114.)

Arc lamps and daylight changing are among patents of the week. (P. 124.)

We draw attention to the need for further experiment in the bichromate processes. (P. 114.)

A French writer recommends the convenient and efficient box form of sky-shade. (P. 114.)

## EX CATHEDRA.

**Photographers** That the French theatre has its own *And* *médecin attiré*—a doctor by appointment **Playhouses.** —is perhaps well known to theatre-goers

in France, but it is news to hear that at least one Paris playhouse has a pharmacist of its own appointment, both arrangements being entered into for the convenience of any in the auditorium who may be taken ill. The practice suggests the possibility of a photographer, in a town possessing a theatre of sufficient importance, establishing within the building either a branch studio, or, in the event of the theatre forming part of a block, his regular business premises. The opportunity of being photographed during an entr'acte would certainly appeal to ladies, and the present facilities for artificial lighting have removed any technical obstacle from such a scheme. The conditions under which business might thus be secured are certain to be rare, but they may at times prove commercially feasible.

\* \* \*

**Mr. Thos. Bedding in America.**

The large number of photographers and members of the trade who knew Mr. Thomas Bedding during his able occupancy of the editorial chair of the "British Journal of Photography" will be interested in hearing that he is now associated with Mr. John A. Tennant in the editorship of the "Photo-miniature" of New York. Mr. Bedding sailed for the States a few weeks ago, and the photographic journals of that country have already borne evidence to the activity of his pen. His knowledge of photographic matters and personages in this country is bound to be of service to our small, but energetic—and, we would say, respected—contemporary, and American readers and editors alike may be congratulated on the coming of "T. B." among them. Whether the fame of the oft-repeated "parrot story" has preceded Mr. Bedding across the Atlantic we cannot say, but our mention of it will perhaps cause it to be called for. Meanwhile, his many friends in this country will, we are sure, be of one mind in wishing Mr. Bedding all prosperity in his journalistic enterprises in New York.

\* \* \*

**A Simple Sky Shade.**

The value of a sky shade to cut off light that would otherwise be reflected on to the plate from the bottom of the camera and from the lens mount is appreciated by all photographers of experience, though it is a device that is used only by a few. By elaborating the form slightly it can be turned into a more effective shade that not only screens off light from the sky, but also protects the sides and top of the inside of the camera and lens mount from stray, useless light. In the "Photo Revue," a writer suggests a very

simple form of shade that must obviously be very effective. He takes a small cardboard box, of a kind easily obtained from a chemist or jeweller, and cuts a circular hole in one side to fit the lens and a rectangular aperture in the opposite side to admit the light. If blackened inside this should be quite as efficient as the most elaborate contrivance that a camera-maker could construct, while its cost will be next to nothing. For a lens of 3 cms. he selects a box that is 6 cms. high, 5 wide, and 4 deep, when placed in position on the lens. The aperture for the lens is cut in the centre of one of the 6 x 5 sides, and on the opposite corresponding side an aperture 3 cms. high and 2½ cms. wide admits the light to the lens. This is, of course, the arrangement suited to a vertical plate. With a horizontal plate the box is turned through 90 degrees so that the aperture will correspond in form with the plate. If the aperture for the lens is made through a piece of cork glued to the back of the box a very good fit is easily secured, and the result should then be as effective and as convenient as one could wish.

\* \* \*

#### Changing-Boxes in the Studio.

Most of the modern studio cameras are fitted with dark slides holding two, and in some cases four, plates, and it is often difficult for the operator with a troublesome child sitter, or a nervous adult, to be sure which was the last plate exposed. A number of single slides, each of which may be removed from the camera as soon as exposed and placed by themselves, solves the difficulty, but slides are expensive, and the cost of half a dozen or eight is no inconsiderable trifle. There is no reason why a good changing-box should not be used instead of dark slides. With landscape cameras the difficulty of register presents itself, the register having to correspond with that of the dark slides also used, necessitating a special arrangement for lifting the plate and inserting it in front of, or behind, the remainder. As portability is not so important in studio work, the register may be even as much as an inch, and the lifting of plates for changing is thus simplified. As soon as an exposure had been made the plate would be changed, and the question need never arise as to which plate was last exposed. A possible objection to the use of the changing-box is that holding twelve plates, it would not be convenient to develop an odd exposure or two while the sitter waited. If, however, the plates lifted from front to back the exposed plates would be readily accessible. Further, it is increasingly the practice to reserve development till the end of the day, it being found that much greater uniformity of negatives results when they are handled in batches than when the operator passes from the well-lighted studio to the dimly-lighted dark-room, and attempts to judge density by visual examination.

\* \* \*

#### Standard Flanges.

Years ago the thread on the lens and the corresponding thread of the flange were most usually of quite arbitrary size, and it was a very small chance that any lens would fit any other flange but its own. During the last ten or twelve years the standardisation of lens screw threads has made great progress. A large number of manufacturers have adopted the standard threads, and have so organised their workshops that such threads can be cut with a degree of accuracy enabling lenses to be screwed readily into any flange of the same size, yet to hold firmly. The convenience of this standardising is very considerable to the photographer, for it enables him to employ any of his lenses on any of his cameras, provided, naturally, that the lens is not too large or too heavy, and this by the aid of a few brass adapters which are not expensive luxuries.

The inconvenience of spare panels, and the necessity for cutting a circular opening in such before the lens can be attached for testing purposes, or for any work of an unusual character, is considerable. When contemplating the purchase of a new lens it may be well to note whether the screw thread is a standard one, in which case it will probably fit an existing flange or an adapter. Lenses which have odd-sized threads may readily have an adapter fitted, the outside screw of such adapter being the smallest possible standard screw. In this way, at a cost of two or three shillings, the convenient use of the lens is very greatly enhanced.

\* \* \*

#### The Efficiency of Diaphragm Shutters.

Mr. Chapman Jones draws attention in "Knowledge" to a point respecting the efficiency of diaphragm shutters that is, perhaps, not generally realised. It is that the higher the highest speed of the shutter, then, generally, the greater is its efficiency at lower exposures. For example, if we have two shutters, one with a highest speed of 1/100 sec., and the other with a highest speed of 1/200 sec., then, if both are set to 1/100 the latter shutter will be more efficient than the other by fifty per cent. The reason for this is very simple. The opening and closing of shutters of this type is effected by springs, and they are held open by a brake. If the speed of opening and closing is always the same, and variations in exposure are only made by keeping the brake on for a longer or shorter time, it is obvious that the higher the speed of opening and closing, the more efficient is the shutter. This speed fixes the shortest exposure that the shutter will give; therefore, the shorter the exposure the more efficient is the shutter. This is a matter often overlooked by those who study the efficiency of shutters from the mathematical point of view, without paying any regard to the details of the mechanism.

#### THE NEED FOR RESEARCH IN THE ACTION OF SILVER AND OTHER IMAGES ON BICHROMATE.

Processes that depend upon the hardening action of light on bichromated gelatine have long been of very great importance in photography, but of late years other methods of producing similar effects without the agency of light have been introduced, and though these newer methods are in very common use, we know little or nothing of the mechanism of the processes employed. Three important examples of these processes are Ozobrome, Bromoil, and Carbohydr. In all these bichromate is used, and it has therefore been assumed, somewhat hastily, that the final result is an image in bichromated gelatine similar to that produced by the agency of light. Though chromium compounds have been found to exist in the final image, and such a compound also exists in the light-affected image produced on bichromated gelatine, it does not follow that the compounds are the same, nor yet that their production by chemical action will necessarily harden the gelatine. A notable instance in which no hardening takes place is that of the process of intensification with chromium. In this case a silver image is bleached with a solution of potassium bichromate to which a few drops of hydrochloric acid have been added. If the acid is not in large excess a considerable quantity of a chromium compound is deposited in the image, but no hardening of the gelatine takes place.

The third of the three processes we have mentioned, Carbohydr, is essentially different from the other two. In it the gelatine is hardened by the application of a so-called "sensitising bath" of bichromate and alum, that



parently effects its purpose without producing any change in the silver image. In this case the silver is supposed to act as a catalyser, but in that of Ozobromol Bromoil it is clear that the action is not simply catalytic, for the silver is converted into a silver salt during the action of the hardening bath. The bleaching agent in the hardening bath is a mixture of potassium ferri-cyanide and potassium bromide, which is added to a solution of potassium bichromate, and the theory put forward to explain the result is that the ferrocyanide which is formed reduces the bichromate and so produces a chromium compound in the gelatine. This theory is plausible, but it depends rather obviously on the assumption that the gelatine will necessarily be hardened by a chemically reduced chromium compound, and it ignores, or, at any rate, does not account for, the fact that alum and other ingredients apparently aid the effect.

In bromoil the ozobromol solution is again used as a bleacher, but with the addition of an extra considerable quantity of alum, which addition appears to be necessary. The bleaching stage is followed by immersion in a 5 per cent. sulphuric acid bath, and this, from the theoretical point of view, is an interesting and important feature of the process. As all the chromium oxide compounds in the state of hydrates are readily soluble in mineral acids it naturally follows that this acid bath must remove a very large proportion of the chromium compound formed in the bleaching process. It is, in fact, obvious, from mere observation, that it does so, but nevertheless the gelatine in the image is not softened. This fact does not perhaps prove very much, seeing that a light-formed image of bichromated gelatine is not very materially softened by similar acid treatment. It appears, however, that the bromoil image is the more resistant of the two, and very usual testing reveals the important fact that the final bromoil image contains a considerable proportion of chromium compound. This is not the case in an image bleached by ferri-cyanide and bromide alone, and the fact that it is so with one bleached with those ingredients in the presence of bichromate points to some unfamiliar action that is not readily explained. Whether a similar compound exists in the ozobromol image is not yet clear. It is, of course, known that in certain circumstances gelatine is precipitated and hardened by ferrocyanic acid, but the matter is obscure. In considering the theory of bromoil and ozobromol, this is, however, one of the possi-

bilities to be looked for, while the action of the alum and of the organic acids generally used in the bleaching and hardening solutions must also be considered. The fact that a large excess of alum is essential to the bromoil process is certainly suggestive that it aids in the hardening process.

At present both the ozobromol and the bromoil processes are in the empiric stage. The methods employed are simply those that by dint of trial and repeated experiments have proved to be effective. The lack of any accurate knowledge of the theory prevents either process from being put on a sounder basis, and hinders the adoption of what might be valuable simplifications. A thorough investigation might lead to important improvements, and also suggest useful similar methods of producing images in hardened gelatine or other colloids.

Incidentally we have referred to the chromium compound produced in the gelatine as a hydrate, while every practical worker is familiar with the fact that the compound produced by light is brown in colour. This being so, it is curious that so many writers should refer to it as chromic oxide, which it obviously cannot be. Some Continental writers, we believe, have described it as chromic hydrate, but we do not know that they have actually identified it by analysis. As a matter of fact, it is very doubtful if simple chromic hydrate is formed at all. In the case of an image bleached with bichromate and hydrochloric acid the compound formed has been identified, as far as identification is apparently possible, with the mysterious brown hydrate called chromium tetroxide. This is only one out of a great variety of brown hydrates that no chemist knows very much about. Simple chromic hydrate, which is green, and not brown in colour, can be identified with certainty, but the others defy analysis, and it is a very open question whether some of them are not really salts of chromium. In these circumstances nothing is gained by jumping to conclusions and rashly classing the unknown products formed in the gelatine as chromic oxide. Some attempt should be made to isolate the product and to determine what known compound it is most nearly allied to.

It is obvious that the investigation of these processes is not a task to be attempted lightly, or one to be rushed through carelessly, but in our opinion it is a work that should be started without unnecessary delay, as it is clear that information of considerable photographic importance may be the result.

## DISTORTION IN SYMMETRICAL AND UNSYMMETRICAL PHOTOGRAPHIC OBJECTIVES.

DR. WANDERSLEB, of Jena, has undoubtedly earned the thanks of all those interested by the thorough and industrious manner in which he has graphically compared the distortion of sixty-four photographic lenses, his results being published in the *Zeitschrift für Instrumentenkunde*, 1907. But when he publishes his results in journals among whose readers will be found many of us, I may call the laity, a description of a portion of his work, in which he compares those unsymmetrical lenses which give the greatest freedom from distortion with symmetrical lenses which for the most part show distortion, it may disturb the minds of those already in possession of a symmetrical lens. In order to calm these fears and to place in a correct light the nature of the distortion given by symmetrical lenses, so that workers to whom practical results are of more importance than theory, may be able to properly judge the matter, I write these few lines.

At the outset I cannot agree with Dr. Wandersleb that the ab-

solute freedom from distortion of the symmetrical lens is a commonly acknowledged dogma. In those cases where an absolutely accurate representation comes into question, as in photogrammetry, the distortion of symmetrical lenses has long been known. I refer Dr. Wandersleb to a paper by Professor Dörge in the *"Photographischen Mitteilungen,"* 1886, in which the distortion of three lenses (Pantoscope, Euryscope, and Landscape Aplanat) are given, as well as to an article by Herr Bohlan in the *"Zeitschrift für Vermessungswesen,"* 1904, wherein results of tests of the Goerz Hypergon Double Anastigmat in truthful angular rendering were published.

Further, I attribute a greater importance than Dr. Wandersleb appears to do to the excellent work by Dr. M. von Rohr, *"Theorie und Geschichte des Photographischen Objectives,"* in which the orthoscopic conditions are dealt with. In my opinion, this book has done very much to explain the theory of photographic optics. I believe, therefore, Dr. Wandersleb's assertion that the

above-mentioned dogma is to-day generally acknowledged, proves his ignorance of the opinions held by the qualified optician, seeing that it has already for ten years past been proved to be not the case in reality.

As a proof of his assertion, Dr. Wandersleb publishes an extract from a book, the title of which he does not mention. The source not being named, the extract loses much of its force, and its value is still more diminished when it is known that the book referred to is "Das Objectiv im Dienste der Photographie," by Dr. E. Holm. Those acquainted with this book know that it was written entirely for practical workers, a point emphasised twice in the preface. Now, Dr. von Rohr writes in his book, page 53, "and one can rightly consider such symmetrical lenses

According to the sketch of Dr. Wandersleb, this lens draws a line, which passes through the middle of the plate, and which appears to him to be under 35 deg. of the optical axis, one hundredth-and-fiftieth too large. In the accompanying illustration, therefore, the chimney must, if it is to be absolutely accurate, be one two-hundredth-and-fiftieth of its height short. Dr. Wandersleb says that one can in practice easily see the result of the distortion; the perpendiculars of the house, for example, which may be at the edge of the plate, may be seen to have a very determined curvature. This statement is in contradiction to the extract given above from Dr. von Rohr.

In the accompanying illustration the perpendiculars of the house are, as Dr. Wandersleb desires, at the edge of the field,



as being practically free from distortion, through which the errors of the older optical system finds its explanation." When Dr. von Rohr in a work devoted to theory pens such a statement, then surely can Dr. Holm in a book written only for practical workers represent the symmetrical lens as being perfectly free from distortion.

How great is the distortion given by rapid symmetrical lenses? In any case so small that Dr. Wandersleb has to very strongly enlarge them in order merely to demonstrate them graphically. How it shows itself in practice shall here be shown, from an exposure made with a rapid symmetrical lens, the Goerz Dagor F.6.8.

I leave it to the reader to decide whether these lines show a "very determined curvature" or not.

Dr. Wandersleb's reproaches to those opticians who describe the symmetrical lens in their commercial literature as being free from distortion, are, in the light of the example just given, too weak for serious consideration. I may add that the C. P. Goerz Optical Works have already issued almost a quarter of a million symmetrical lenses, which are in use in all parts of the world, and up to the present they have never had a single complaint that one of the lenses showed distortion.

W. ZSCHOKKE,

Of the Scientific Staff of the C. P. Goerz Optical Works

**HACKNEY PHOTOGRAPHIC SOCIETY.**—The members of this society entertained their friends and each other on the occasion of their annual concert last week in their usual hearty manner, a special welcome being given to ladies. After a varied musical programme

had come to a conclusion, "The Man in Possession," a musical farce by Mr. Harold Lane, was introduced, and, as is not usual with that member of the community, obtained a hearty welcome, two of the leading parts being taken by Mr. Walter Selfe and his daughter.



## A NOTE ON THIOMOLYBDATE SULPHIDE-SUBSTITUTE IN SEPIA TONING.

The methods of "sulphide" toning being now in process of being improved by the provision of less odorous bodies than the sodium sulphide used as the darkening bath, the following further notes on one of the new compounds—thiomolybdate should be studied in conjunction with the instructions and formulæ of the inventor already given in our issue of October 25, 1907. Here Mr. Smith adds some further items from his experience.—Eds. "B.J."]

As mentioned in Watts' "Dictionary of Chemistry" that solutions of thiomolybdates when diluted, and especially in presence of free alkali, become turbid, and break up. Simple aqueous solutions of thiomolybdates certainly do not keep very well, and that reason in "The Photographic Journal," October, 1907, page 361, I did not recommend that a dilute solution of ammonium thiomolybdate should be kept for long. In "Watts," however, no time is mentioned in which the decomposition of these solutions take place.

In Fremy's "Encyclopédie" it is stated that dilute solutions of thiomolybdates, if neutral, decompose very slowly if exposed to the air. Concentrated solutions keep well in the air. Dilute solutions gradually decompose, but the changes take a long time.

Considerable experience with these solutions has shown me that (somewhat contrary to the statement in "Watts") dilute solutions of ammonium thiomolybdate  $(\text{NH}_4)_2 \text{MoS}_4$  for example, keep extremely well when made alkaline with their own alkali, in this case, of course, ammonia. For instance, a toning solution of 60 minims of a 1 per cent. solution of  $(\text{NH}_4)_2 \text{MoS}_4$ , one ounce of water, made alkaline with five minims of .380 ammonia, after being kept for six weeks in full daylight in a white glass loosely-stoppered bottle, half full of the solution, and a bleached bromide print sepia satisfactorily. After toning, this solution was replaced in the bottle, and again kept in full daylight for seven weeks, when it was again tested for toning properties. By this time (over three months) this very toning solution had become somewhat decomposed; and while, allowing it plenty of time (about twenty minutes), it still toned a bleached print a good sepia colour, towards the end of the toning the shadows of the print became toned with a bright silvery metallic deposit, which was not apparently a sulphide of molybdenum, but presumably the metal itself.

I have noticed this metallic deposit before, when toning with stale dilute thiomolybdate solutions to which no ammonia had been added at the time of making up. The tendency in the absence of ammonia was for the metallic deposit to be of a golden yellow colour, and I noticed the same effect on a piece of bright silver immersed in the solution. However, this metallic deposit does not appear to be of any immediate interest, but I think that the fact that such very dilute solutions of this type of thiomolybdate, when alkaline, keep so well as regards their toning properties, is of interest, since, as one would naturally expect, I find that reasonably concentrated solutions made alkaline in this way, keep excellently.

As regards freedom from odour, one can hardly call such solutions odourless, since they smell of ammonia. However, in using an alkaline toning solution of this type the odour of sulphuretted hydrogen is practically negligible; in fact, there is no free sulphuretted hydrogen. A concentrated alkaline solution of this sort seems preferable to the pure crystals as regards freedom from odour, as, unless very freshly prepared, the crystals are apt to give off sufficient smell of, first ammonia, and afterwards sulphuretted hydrogen, to be quite in evidence on opening the bottle, though on dissolving the crystals to form a toning solution with ammonia the sulphuretted hydrogen is difficult to detect.

Oxygen from the air is presumably the prime factor in the decomposition of thiomolybdate solutions, since other re-agents will apparently retard decomposition, such as sodium sulphite, which appears to act in much the same way as it does with organic developers. Metabisulphites, however seem to break up thiomolybdates with some rapidity. A 1 per cent. solution of ammonium thiomolybdate with sodium sulphite, kept in a loosely-corked test-tube, at the end of three months well retained its orange-red colour though a little sulphuretted hydrogen could be detected on removing the cork. H. E. SMITH.

## PRACTICAL PLATINOTYPE.

"Variations in platinotype" formed the title of a thoroughly practical and exhaustive demonstration given by Mr. W. H. Smith at the Croydon Camera Club on the 5th inst. Apart from the ordinary procedure, more or less familiar, several points were dealt with which, in practice, might be overlooked, and therefore may be usefully recorded.—Eds. "B.J."]

In opening his remarks, Mr. Smith said that, to obtain the very best results, no doubt, a good negative was essential; an observation applicable to all processes, though perhaps a little more so with platinotype than with others. This fact, however, was soon hurled at him by way of reproach, and was significant, as it clearly showed that the average amateur photographer too frequently realised his inability to produce other than second-grade work. Perhaps the art of "faking" and dodging, which they had heard so much about at the Croydon Camera Club recently, was partly responsible for this. An enthusiastic operator thought nothing of spending hours in manipulating negative and print to produce a result which in many cases might, either whole or in part, have been obtained in the first instance. He suggested that some of this superfluous energy might be usefully expended in trying to produce a better negative to start with. Compared with gum-bichromate and similar processes,

platinotype could not be said to be suitable for many modern pictorialists; it was, on the other hand, eminently suitable for a good "pictorial negative."

### Sundry Misconceptions.

A complaint occasionally made was that platinotype papers were dear. He dissented. They were expensive, doubtless, and so were gold and metallic platinum. Still another grumble he had encountered viz., that winter-time was unsuitable for platinotype printing. The reverse was the case, and obviously so; at 62 deg. Fahr. the water vapour in the air, when saturated, was nearly three times greater than at freezing point. In cold weather, if the room in which the prints were loaded had a fire in it, so that its temperature was above that outside, then the air in the room had a distinct drying action. In this connection, under certain conditions, air at 32 deg. Fahr. might be heated

to 62 deg., and such a degree of dryness obtained as to be intolerable to the human frame. Care should be taken that the negative and rubber-pad be quite dry, and the sensitive paper, being then isolated from moisture, might be exposed all day without detriment. On the other hand, a damp hot summer's day was the most dangerous of all. This "bogey" was in a large measure a relic of the past, for fifteen years ago the paper was undoubtedly very much affected by damp. In those days it would only keep three months or so, now its keeping properties were considerable, and paper that would keep longer always stood damp better. At no time, however, was there any necessity to expose the paper needlessly to the action of the air.

#### The "Glycerine" Method.

Mr. Smith at this stage developed several prints of the respectable size of 36 by 20 inches and downwards with a glycerined developer, and pointed out that dishes the size of the print were not essential: a smaller dish would do, provided it was a little longer than the prints were broad. Such prints might be developed by passing them through the developer, and then carefully doubling them over, to allow of insertion in the clearing and washing baths. Sometimes, in text-books and articles on glycerine development, it was recommended to slow down the action by the addition of a certain proportion of water to the glycerine and developer. This was a mistake; if protracted action was desired, this should be controlled by the proportion of glycerine. A good normal developer would be equal parts of a saturated solution of oxalate of potash with addition of oxalic acid and glycerine. He also cautioned his hearers against local acceleration of the image by the application of *plain* developer. This might cause a distinct difference in tone. The better plan to adopt was to keep back those parts requiring suppression, by gently removing the developer with a piece of clean cambric or other material, followed, if necessary, by the application of pure glycerine; the other portions of the print would then slowly gain in intensity until the right effect was obtained.

#### Discussion.

The President, Mr. J. M. Sellors, an old platinotype worker, said he could confirm Mr. Smith's observations as regards the "bogey of damp." Only the other day, owing to the badness of the light, and the density of the particular negative, he had a frame out for a week; the platinotype print showed no ill effects. Occasionally he had troubles with bubbles, which left recording marks behind them; he had also now and then found markings due to the platinum black washing away.

Mr. S. H. Wratten said he had found the Japine paper most useful, "and now used no other"; the power to render increased contrast by the addition of glycerine had enabled him to obtain

satisfactory prints from negatives which were too thin to be adequately rendered by any other process. He, too, at intervals had been troubled with stains due to platinum black coming away. In one case, that of a print from a negative taken on an "ordinary" plate, rendering the sky in the print as an expanse of white paper, some black hats against a clear sky radiating platinum black.

Mr. Terry warned beginners against attempting to remove a bubble by an application of a finger wet after immersion in an acid bath. The result was not pleasing.

Dr. Mees, referring to an observation of Mr. Smith's earlier in the evening, "that the knack of judging the depth of the image was easily acquired," asked the lecturer whether he had personally printed the platinotype pictures before them, and also inquired whether Mr. Smith could give an indication as to what exposure would be required for enlarging two diameters on platinotype paper by means of an arc lamp.

Mr. Dollond said he should regard with pleasure an even tone on toning platinotype prints. Years ago, when he worked on his formula for toning platinotypes with gold he invariably found it certain and regular in its action. Latterly uniform results were not obtained, and he inquired the reason.

Mr. Smith, in reply, said that as regards "bubbles," a little care would prevent these occurring; if they did, however, they should be immediately touched with the finger, when, in some cases, they would disappear without leaving any mark behind, in other cases the contrary would prevail.

As to the pigment washing off and causing markings, the latter feature was entirely due to errors in manipulation. If a print was floated, and then picked up and examined in the hand, the developer would flow off in lines, and the possibility of staining by platinum black arose. The proper course was to float the print, and when down give a slight wriggling motion to the next to lift one end of the print, and then the other, to see if any bubbles had been formed; if so, they should be at once moved, and the print allowed to fall back on the surface of the developer. If the print was only raised for a short time there was no danger of the pigment running and adhering to the paper. In reference to Dr. Mees' questions, he had not personally printed the specimens developed, but he had been in the habit at that time of printing hundreds of platinotypes each day. As to enlarging direct; under the conditions stated, twenty minutes would be about right; a good deal, of course, depended upon the power of the arc and the density of the negative. In reply to Mr. Dollond, Mr. Smith said that the toning action of gold possibly depended upon a minute trace of iron incorporated with the image. A thorough clearing in the acid baths would probably render toning by this method more difficult. Mr. Dollond's formula, in consequence, might form a good test for any residual iron.

## THE EXHIBITION OF THE PROFESSIONAL PHOTOGRAPHERS' ASSOCIATION.

We much regret that our critic, by the merest oversight, omitted to refer to the works of Mr. Fellows Willson, when reviewing the exhibition of the Professional Photographers' Association. Mr. Fellows Willson himself, as well as the numerous admirers of his work, will not need our assurances that photographic portraits such as these are highly esteemed by our critic. He particularly admires the fine head and shoulders of the gentleman's portrait, though the reflected light is, in his opinion, a thought too bright upon the collar. Three ovals with borders, in the miniature frame pattern, contain charming heads of young ladies, while the "placing" and filling of the oval space is tastefully managed. A Court dress piece and a

theatrical portrait show Mr. Fellows Willson's manner of giving grace to a figure, and keeping the uttermost stitch of silk and satin well displayed.

From the Press notices of the exhibitions which have appeared, we may quote the following: The "Times" says: "One has only to recall the character of the prints with which the now almost extinct portrait album was furnished to realise to how great an extent the example set by the more accomplished amateurs in photography has influenced the work of their professional contemporaries. The highly polished and too intensely vivid representation of stiff and awkwardly posed people which satisfied a quarter of a century ago, and doubtless still produced in places where public taste is less fastidious."



us; but there is reason to be grateful that there are photographers such as Alfred Ellis, Martin Jacquette, and that famous photographer of Royalties, William Downey, to mention three represented in the present exhibition, who can produce realistic likenesses which possess more than a little of the idealisation of the portrait painter. There are also shown several examples of the work of Mr. Fellows Willson, all of which exhibit creditable craftsmanship; but perhaps the first place must be given to the work of Messrs. Drummond, Young and Watson, of Edinburgh. Miss Wall Smith, who is the only lady exhibitor, shows some powerful clever work."

The "Morning Post" writes:—"The amateur may get hints from

it as to the most effective manner of posing and lighting a model; the professional will furthermore learn much by studying the style and the mannerism of several of the leading portrait photographers; while those who are merely interested in photography as customers may find the exhibition—to which entrance is obtainable free of charge—useful in helping them to choose a firm which turns out likenesses in accordance with their notions of what is approvable. For instance, there are the 'catchy' picture portraits of Messrs. Ellis and Walery, the engraving-like presentation plates of Mr. Mendelssohn, and the dainty and fanciful little prints of Messrs. Young and Watson, with many more of equal distinction to engage attention."

## ORTHOCHROMATISM BY BATHING.—A SENSITOMETRIC STUDY.

The following is the full text of a further communication in the series of researches by Mr. R. J. Wallace, of the Yerkes Observatory, appearing as "Studies in Sensitometry." The same author's first published experiments on a system of daylight sensitometry appeared last year, and were reprinted in our columns from proofs specially prepared, as was the present paper, by Mr. Wallace, for "The British Journal of Photography." Our acknowledgments are therefore equally due to Mr. Wallace and to the "Astrophysical Journal," in which the papers have first appeared.—Eds., "B.J."]

### III.

*Pinacyanol + pinaverdol + homoccol.*—This combination, when made in an aqueous ammoniacal bath and without supplementary washing, sensitises a "27" plate for practically the entire visible spectrum, extending easily to  $\lambda$  7,200. The usual gap in the blue-green is entirely closed and the curve is fairly smooth throughout. Wash the plate in water after staining, although increasing the speed, does not add anything to the chromatic value of the plate; a slight improvement is effected by an alcohol washing-bath. If the dye is made up with alcohol+ammonia the sensitising action is weak and ill-defined, and possesses no value whatever.

The staining-bath be made up with dilute ethyl alcohol and ammonia we obtain a most excellent plate, with a markedly high sensitiveness and evenness of action. A brief washing in alcohol seems to be also very beneficial, no apparent difference being (after exposure and development) whether this washing be continued for 20 seconds or 5 minutes.

If all results obtained, this plate is decidedly the best, and for evenness of working and general freedom from fog it leaves little to be desired. The bathing formula is as follows:—

Pinacyanol	1:1000	50 minims
Pinaverdol	1:1000	40 minims
Homoccol	1:1000	40 minims
Ammonia		120 minims
Alcohol		3 oz.
Water		4 oz.

Exposure time 4 minutes; alcohol washing 20 seconds.

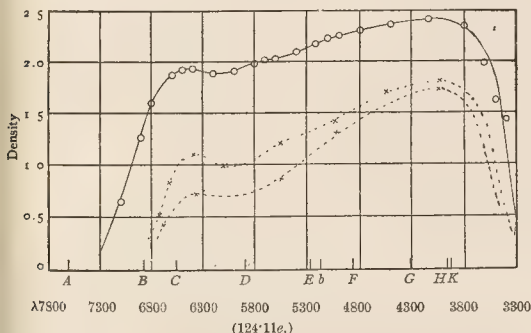


Fig. 7.

Fig. 7 shows the measured curve of this plate together with two under-exposure curves showing the relative chromatic effect with

reduced exposures; development, of course, remaining constant. Speed dif. = 0.17.

TYPE 124. 11. x

$\lambda$	6800	6300	5900	5500	5100
Exposure					
Normal .....	1.51	1.26	1.24	1.18	1.09
A .....	4.72	1.65	1.80	1.45	1.29
B .....	8.75	2.42	2.41	1.92	1.43

Speed difference = 13 p.c. in favour of the "27."

*Pinacyanol + pinaverdol + dicyanine* in ammoniacal water bath gives also a very good plate, although the cation of the dicyanine seems to reduce greatly the general integral sensitiveness.<sup>21</sup> The blue-green insensitive gap is closed and the chromatic sensitiveness-curve descends toward the red in a good flowing sweep, the action extending to  $\lambda$  7,200 with normal exposure but may easily be forced below Fraunhofer's A; on several plates the action is carried distinctly lower than  $\lambda$  8,400. Washing does not appear to influence the selective action in any way.

When the plate is treated to conform to .11 the sensitiveness to the red at  $\lambda$  6,500 and to the green at  $\lambda$  5,700 is increased, which

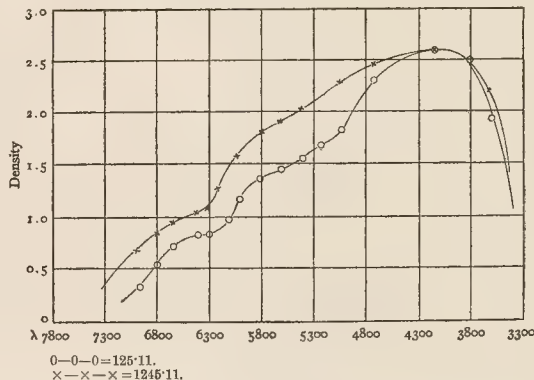


Fig. 8.

adds materially to the value of the plate in general, although this increase is at the expense of the blue-green, which loses somewhat

<sup>21</sup> This lowering of the general plate sensitiveness is noticed and commented upon by Monpillard, *Bull. Soc. Franc. Phot.* (2), 22, 1906; also *Journ. Roy. Phot. Soc.* 46, 261, 1906.

in sensitiveness. The plate works clean and bright, but does not keep. For sensitiveness-curve see Fig. 8. Speed dif.=1.64.

Type 125.11.					
At $\lambda = 6800$	6300	5900	5500	5100	
$\chi = 4.72$	3.07	2.00	1.76	1.49	

The bath formula was as follows:—

Pinacyanol	1:1000	30 minims
Pinaverdol	1:1000	60 minims
Dicyanine	1:1000	40 minims
Ammonia		120 minims
Alcohol		3 oz.
Water		4 oz.

Bathing-time—3 minutes; washing-time—30 seconds; temperature—23 deg. C.

silver salts, but subsequent experiments seem to point instead to the action of the combined dyes as being the main factor influencing the reduction. This opinion must, however, be accepted with reserve, as sufficient work was not performed to confirm it, the type not being in direct line with the object sought.

The normal sensitiveness extends to  $\lambda$  7200, although with a slight increase of exposure the great A group is clearly improved. The plate is foggy if kept over a few days, and must therefore be used immediately after preparation. A continued water wash after bathing gives a cleaner and better keeping plate, but considerably reduces the speed. It may be mentioned that if the dye bath is made up with an aqueous ammoniacal solution (.7) and the plate be washed after bathing, the same lowering of  $\gamma\omega\beta$  may be observed. Speed dif.=0.62.

TABLE II,  
Values of  $\chi = \frac{D\beta}{D\lambda_n}$

Type.	Dyestuffs.	At $\lambda$ 6800	At $\lambda$ 6300	At $\lambda$ 5900	At $\lambda$ 5500	At $\lambda$ 5100	Sensitiveness Limit (Normal Exposure)	Speed Reduction.
15.11 .....	Pinacyanol + Dicyanine	6.52	4.10	2.75	2.65	2.11	7600	0.73
123.11 .....	Pinacyanol + Pinaverdol + Pinachrom	5.49	3.18	2.20	1.66	1.48	6950	0.23
12345.11 .....	Pinacyanol + Pinaverdol + Pinachrom + Homocol + Dicyanine	4.22	3.36	2.43	1.83	1.48	7200	1.3
134.11 .....	Pinacyanol + Pinachrom + Homocol	2.82	2.44	1.79	1.60	1.47	6950	0.19
135.11 .....	Pinacyanol + Pinachrom + Dicyanine	4.10	2.90	1.14	1.36	1.52	7200	1.25
1234.11 .....	Pinacyanol + Pinaverdol + Pinachrom + Homocol	5.40	3.13	2.17	1.71	1.38	7200	0.8
1345.11 .....	Pinacyanol + Pinaverdol + Homocol + Dicyanine	5.10	3.36	2.01	1.66	1.42	7500	1.0
1235.11 .....	Pinacyanol + Pinaverdol + Pinachrom + Dicyanine	3.95	3.33	2.31	1.81	1.31	7500	0.42
245.11 .....	Pinaverdol + Homocol + Dicyanine	5.01	4.07	1.83	1.47	1.07	7300	.61
235.11 .....	Pinaverdol + Pinachrom + Dicyanine	6.30	3.67	1.87	1.45	1.37	7400	.71
234.11 .....	Pinaverdol + Pinachrom + Homocol	3.95	2.79	2.14	1.62	1.37	7000	.63
25.11 .....	Pinaverdol + Dicyanine	5.80	5.75	2.31	1.65	1.37	7100	.81
24.11 .....	Pinaverdol + Homocol		3.36	1.65	1.38	1.14	6600	.41
23.11 .....	Pinaverdol + Pinachrom	4.11	3.47	2.0	1.52	1.43	6850	.62
34.11 .....	Pinachrom + Homocol		3.18	1.82	1.46	1.31	6300	.62
35.11 .....	Pinachrom + Dicyanine	10.2	5.04	2.82	1.65	1.54	7300	1.14
345.11 .....	Pinachrom + Dicyanine + Homocol	11.4	5.11	4.0	2.34	1.52	7500	1.11
45.11 .....	Homocol + Dicyanine	5.45	3.58	2.14	1.65	1.17	7500	
13.9 .....	Pinacyanol + Pinachrom	3.36	2.81	1.77	1.55	1.48	6900	1.27
5.11 .....	Dicyanine	10.0	12.50	11.32	17.15	4.12	7300	0.94
8.9 .....	Orthochrom T.		11.5	1.62	1.55	1.27	6100	.19
9.11 .....	Tetraiodofluorescein			13.4	1.74	3.65	5900	.39
0.7 .....	Ethyl Cyanin T.	11.2	1.99	1.65	1.46	1.54	(Too low to be definitely stated)	.76
64.11 .....	Orthochrom T. + Homocol		10.4	2.09	1.38	1.48	6400	.41
61.11 .....	Orthochrom T. + Pinacyanol	6.42	3.71	2.17	1.79	1.51	6900	.24
614.11 .....	Orthochrom T. + Pinacyanol + Homocol	3.10	2.0	1.55	1.66	1.38	7200	.27

\* Approximate exposure-time increase to equal Seed "27."

*Pinacyanol + pinaverdol + homocol + dicyanine.*—The introduction of homocol to the previous bath increases to a marked degree the general panchromatic quality, and the sensitiveness is rendered much more even, although at the expense of speed (see Fig. 8). Speed dif.=0.91.

Type 1245.11.					
At $\lambda = 6800$	6300	5900	5500	5100	
$\chi = 5.07$	2.36	1.53	1.33	1.15	

*Pinacyanol + homocol + dicyanine.*—The use of homocol in place of the pinaverdol in a type .11 bath and with a bathing-time of 4 minutes produces also a very good plate, with a distinct lowering in the value  $\gamma\omega\beta$ . This lowering of the density in the blue region was at first considered due to the solvent action of the ammonia on the

Type 145.11. $\chi$					
At $\lambda = 6800$	6300	5900	5500	5100	
$\chi = 3.34$	2.32	1.82	1.66	1.38	

Table II. contains the  $\chi$  values for the remaining plates of interest.

#### Commercial Bathed Plates.

Wratten "spectrum panchromatic."<sup>22</sup>—The consideration of orthochromatism by methods of bathing would be incomplete without notice of this comparatively recent addition to the commercial plate-market. Undoubtedly, to the individual without previous experience in plate-bathing there is a certain amount of technical skill required for the

<sup>22</sup> Wratten and Wainwright, Ltd., Croydon, Surrey, England.



successful production of bathed plates of uniform quality. Besides, there is the question of necessary accommodations, such as bathing-tubs and drying-cabinet, which very often prevent the taking-up of work, more particularly by the individual who has only occasional use for such a product.

It is with the purpose of meeting just such conditions that these plates are prepared, and as they are bathed plates, it is proper that their consideration should find a place here.

These panchromatic plates are made in two grades: "fast" and "slow," and from a series of spectrum exposures, handled in precisely

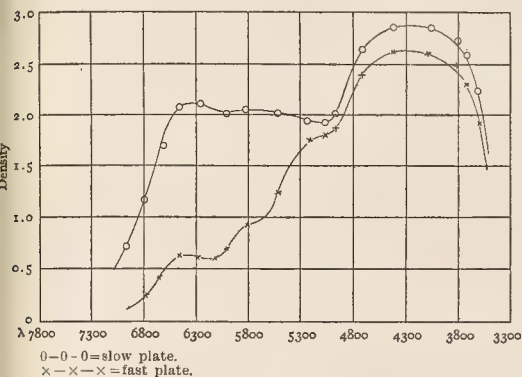


Fig. 9.

In the same manner as the plates previously referred to, a series of measurements was made from which were plotted the curves shown in Fig. 9.<sup>23</sup>

#### X FOR WRATTEN "PANCHROMATIC."

Type.	At $\lambda$ 6800	6300	5000	5500	5100
Fast .....	11.6	4.80	3.30	2.12	1.47
Slow .....	2.41	1.37	1.42	1.42	1.5

When reasonably fresh, the "fast" grade works with vigour and brilliancy, together with good freedom from fog; but, like all bathed plates, suffers deterioration as it is kept. The sensitiveness is good, and at normal exposure pursues a fairly smooth curve extending beyond  $\lambda$  6870; with increased exposure to beyond  $\lambda$  7200. A normally exposed plate shows three distinct maxima, situated at  $\lambda$  6150,  $\lambda$  4850, and  $\lambda$  6400. The slow panchromatic is characterised by a remarkably low  $\gamma \propto \beta$ . There is somewhat of a drop in the blue-violet from  $\lambda$  4360-5150, but from that point the curve rises with great evenness to  $\lambda$  6500, whence it continues with gradually varying sensitiveness on to about  $\lambda$  7500. A is obtained with increased exposure. Unquestionably these are the finest panchromatic plates at present commercially obtainable, and the scientist or three-colour worker who cannot prepare his own plates is certainly greatly indebted for the enterprise manifested by their production. The inclusion here of their curves of spectral sensitiveness is necessary for purposes of direct comparison with other types under identical conditions.<sup>24</sup>

From the foregoing description and curves it will be seen that by the best approximation to isochromatism is obtained in type "A.11." Further observation upon the behaviour of the plate after a long time shows that it follows the general rule by suffering a decline in relative chromatic sensitiveness as its age increases. This retrograde action, however, is but slight for the first period (extending over several weeks), although distinctly noticeable after the lapse of a few months. Measurement of a plate bathed at the same time as that

plotted in Fig. 7, but kept for 60 days before exposure, shows a  $\chi$ -difference as follows:—

At $\lambda$ = 6800	6300	5900	5500	5100
$\Delta\chi$ = 3.09	0.39	.56	.25	.03

from which it follows that in order to obtain the very best effect the plates should be used when fresh.<sup>25</sup>

#### Compensation Filter.

While the curve shown in Fig. 7 represents the best approximation to a true isochromatic value by means of the judicious selection of plate and dye bath, yet to be absolutely correct this curve should be a straight horizontal line. The advantages of a plate possessing such a curve of sensitiveness to those engaged in recording scientific data is sufficiently evident without detailed exposition. To approach this straight-line condition two courses are open: (1) the introduction to the film of a chemically inert dye, whose function consists in staining the gelatine and thus acting as a colour filter; or (2) the use of a separate colour-filter in the path of the incident light. This latter is (for the present purpose) decidedly the better method, because in the former case the integral speed of the plate is considerably lowered.

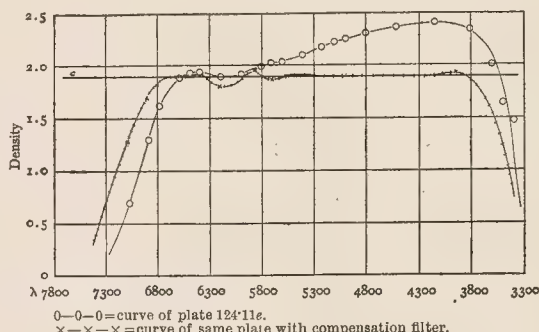


Fig. 10.

Repeating in Fig. 10 the sensitiveness-curve of Fig. 7, and drawing the horizontal path of the new (desired) sensitiveness-curve, we may obtain the extinction coefficient-curve of the colour-filter necessary, by means of the simple formula

$$\frac{D-c}{\gamma} = e,$$

where  $D$  = density of the plate at any given wave-length,  $c$  = the proposed new curve of sensitiveness,  $\gamma$  = the development factor, and  $e$  = the extinction-co-efficient of the filter sought. As  $c$  in this instance is represented by a perfectly horizontal line, it is therefore sufficient to accept everything above that line as an absorption record of the filter required, if we now consider  $c$  as representing zero density.<sup>26</sup>

In the dye tartrazine we obtain the best agent for the selective absorption of the excessive density in the blue-violet; and ultra-violet as far as  $\lambda$  3300, which is practically the limit of glass transmission. A spectrum photograph through an adjusted solution of this dye still leaves much to be desired with reference to the red end, the drop at  $\lambda$  6200 being quite apparent; this is, however, considerably improved by the introduction to the filter of a very small amount of naphthylamine brown.

The best proportionate strength of solution yet arrived at is

A. Tartrazine	0.1 gram.
Water	100.0 cc.
B. Naphthylamine Brown	0.01 gram.
Water	100.0 cc.

Compensation filter = A. 10 cc.  
Water 120 cc.

B. 40.0 cc. in a thickness of 5 mm.

The new curve of sensitiveness is shown in Fig. 10. The intro-

<sup>23</sup> The writer here desires to express his thanks and appreciation to Dr. Mees, who courteously presented the plates.

<sup>24</sup> The curve of the "fast" panchromatic, together with the  $\chi$  value for the same, is comparable with that plotted by Mees (*Brit. Jour. Phot.*, 53, 430, 1906), but on  $\lambda$  4700 to the limit of the red-sensitiveness. Owing (presumably) to the course, Mees' curve does not represent the true point of maximum sensitiveness, which should be at  $\lambda$  4150 instead of  $\lambda$  4700, the usual maximum for *AgBr*.

<sup>25</sup> For several months past this plate has been in almost constant use at this observatory in the records for the photographic photometry of coloured variables, with results in every way satisfactory.

<sup>26</sup> In an able paper by André Callier the function and preparation of colour-filters is very exhaustively treated, but while the methods and ideas therein expressed are deserving of the highest commendation, yet it must not be lost sight of that some of the curves and measurements are of prismatic spectra.—A. Callier, "Ecrans colorés," *Revue des sciences photographiques*, No. 10, 1906.

duction of this filter, however, increases the exposure time by the factor  $\times 2.2$ . For solar or laboratory absorption spectra this increase is a matter of no consequence. With bright-line emission spectra the use of the filter is unnecessary.

ROBERT JAMES WALLACE.

#### PHOTOGRAPHIC COPIES OF UNPUBLISHED ADVERTISEMENT PICTURES.

A CASE heard before Mr. Justice Swinfen Eady in the Chancery Division of the High Courts, on January 20 and 21, was concluded last week, when the reserved judgment was delivered. The parties to the action were Mansell (plaintiff) and the Valley Printing Company and Rankine (defendants). The case contains elements which relate it to many others liable to occur in the illustrative trades, and we therefore quote extensively from the judgment of the learned judge as reported in the *Times* of February 7.

The action was for damages for infringement of the plaintiff's common law right of property in unpublished pictures. The pictures had been copied by an employee who sold the copies as his own to a firm of printers, and they in good faith published them.

Mr. Justice Swinfen Eady read the following judgment:—The plaintiff is an artists' colour and general printer and publisher, and for the purpose of his business he employs artists to make for him pictures and designs suitable for use as artistic advertisements. The exclusive property in all these pictures and designs is in the plaintiff, and they are produced by persons in his employ, to whom he pays regular weekly wages. The plaintiff usually retains the copyright in these, after publication, and makes a profit by printing in colour from them for use in various methods of advertisement. Sometimes he sells the copyright outright, usually, as one of the terms of sale, obtaining the order for the printing. Amongst other employees, he had in his service between 1902 and 1905 a Mr. Higham, who received a salary of £8 a week and a bonus, and the defendant Rankine, who was latterly paid £3 a week. Amongst the pictures and designs made by Higham for the plaintiff were three of those mentioned in the statement of claim, namely, "Three figures walking" (No. 3); "A girl in summer dress with roses in large fancy hat" (No. 4); and "A head and shoulders in large fancy hat" (No. 5). The other three pictures mentioned in the statement of claim were withdrawn during the hearing for various reasons and need not be further considered. None of the three drawings numbered 3, 4, and 5 have ever been published by the plaintiff, and until the matters complained of they were entirely unpublished. The defendant D. H. Rankine left the plaintiff's employ in July, 1905. He subsequently sold to the Valley Printing Company certain drawings; and the question is whether three of these drawings are copies or colourable imitations of Higham's three drawings in question, owned by the plaintiff.

The matter was brought to the plaintiff's notice in this way. A representative of Dent and Co., Limited, engravers and etchers, called on the plaintiff and submitted to him as a specimen of their work a proof of a design, and the plaintiff immediately recognised in the proof, or thought he did, a colourable imitation of his drawing No. 5. Inquiries led to the information that the work had been done by Dent and Co., Limited, for the Valley Printing Company. The plaintiff went to their offices, and immediately recognised on their premises other drawings which he considered were copies or colourable imitations of other drawings of Higham's which belonged to himself. Mr. Oliver Pearce, who carries on business as a fashion printer, under the style of the Valley Printing Company, at Cleckheaton, in Yorkshire, and in London, gave to the plaintiff every information and assistance, and said that he had purchased the drawings from a Mr. D. S. Hay, who lived near Diss, in Norfolk. The plaintiff described the appearance of the defendant Rankine to Mr. Pearce, and the latter said "That fits the artist named Hay from whom I bought the drawings"; whereupon the plaintiff said, "Your Hay is my Rankine." The plaintiff then went to Diss, with his manager, Mr. Simms, saw the defendant Rankine and his wife, and, according to the plaintiff's evidence, Rankine made a confession of what he had done, and asked for forgiveness. He ultimately allowed the plaintiff to examine a portfolio in his studio, where the plaintiff found some fifty photographs of Higham's drawings and pictures belonging to the plaintiff, including two of those now in question, and also two original drawings of Higham's belonging to

the plaintiff, and three tracings of Higham's drawings. All these were taken away by the plaintiff with Rankine's consent. . . . It is clear that Rankine, while in the plaintiff's employ, in an underhand manner, during the dinner hour, when the other employees were absent from the plaintiff's studio, surreptitiously made photographs of Higham's drawings. . . . I am clearly of opinion that the three drawings Nos. 3, 4, and 5 are copies or colourable imitations of the plaintiff's three drawings. . . . The defendant Rankine did not deny—that is really only too obvious—that he used his surreptitious materials to assist him in his drawings, but he alleged that he did not "actually copy" Higham's drawings, only took suggestions from them. In my opinion Rankine's Nos. 3, 4, and 5 are copies or colourable imitations of plaintiff's Nos. 3, 4, and 5; but no damages are claimed in respect of No. 3, as that has not been published by the Valley Printing Company. Nos. 4 and 5 have been published, and the damage which the plaintiff has sustained is the loss of what these drawings cost him—as to No. 4, £18, and as to No. 5, £25, making together £43.

The value of these drawings for advertising purposes lies in their originality, and it appears by the evidence that after a drawing or any copy or colourable imitation of it, has once been published the value of it for advertising purposes is destroyed; it will be quite impossible for the plaintiff in the future to deal with their No. 3, or No. 5 as original and unpublished drawings. There must, therefore, be an injunction as prayed against the defendant Rankine with £43 damages and costs.

With regard to the Valley Printing Company, it was contended that they were affected with notice that the designs had been improperly obtained by Rankine. This contention failed, and, indeed, was not persisted in at the end. The only ground put forward in support of it was an alleged insufficient price paid to Rankine for the drawings, but on the evidence this wholly failed. I am quite satisfied that the Valley Printing Company acted in good faith from beginning to end; they acquired the drawings in the ordinary way of business, and paid full value for them; they dealt with Rankine under the name of D. S. Hay, believing that to be his real name when they were approached by the plaintiff they at once gave all the information in their power, showed the plaintiff all the drawings of Rankine's which they had, and, when they learnt the circumstances, agreed not to make any further use, not only of the drawings complained of, but of any further drawings of Rankine's which they had; and I deal with the case, so far as they are concerned, upon the footing that they are innocent parties. They have, however, converted to their own use (although innocently) the property of another. It was insisted on their behalf that, having acted innocently, and not having taken any physical thing belonging to the plaintiff, they were not under any liability for damages; and it was urged that no authority whatever could be produced in support of the proposition that they were under any legal liability for what they had done.

The present case is not one of copyright, which is statutory, and arises upon publication; the plaintiff has an undoubted right of property at common law. As Lord St. Leonards pointed out in "*Jefferys v. Boosey*" (1854, 4 H. L. Cas., at p. 979), nothing can be more distinct than these two things. He said: "The common law does give a man who has composed a work a right to that composition, just as he has a right to any other part of his personal property; but the question of the right of excluding all the world from copying, and of himself claiming the exclusive right of forever copying his own composition, after he has published it to the world, is a totally different thing." Lord Brougham also pointed out (at p. 962) that the right of the author before publication was unquestioned. Mr. Justice Erle, in giving his opinion upon the question submitted to the judges, stated what that right was. He said (p. 867): "The nature of the right of an author in his works is analogous to the rights of ownership in other personal property, and is far more extensive than the control of copying after publication in print, which is the limited meaning of copyright in its common acceptance, and which is the right of an author, to which the statute of Anne relates. Thus, if after composition the author chooses to keep his writings private, he has the remedies for wrongful abstraction of copies analogous to those of an owner of personal property in the like case. He may prevent publication; he may require back the copies wrongfully made; he may sue for damages



any are sustained." Now, the remedies "of an owner of personality in the like case" are clear and well-established. Any person who, however innocently, obtains possession of the goods of a person who has been fraudulently deprived of them, and disposes of them, whether for his own benefit or that of any other person, is guilty of a conversion. See "*Hollins v. Fowler*" (1874, L.R. 9 H.L., 757, 795).

So far as regards the common law right of property in unpublished works, no distinction can be drawn between a literary work and an artistic work. "The property," said Lord Cottenham in "*Prince v. Newitt*" (1849, 1 Mac. and G., at p. 42), "of an author or composer of any work, whether of literature, art, or science, in which work unpublished and kept for his private use or pleasure, cannot be disputed after the many decisions in which that proposition has been affirmed or assumed." And on the final hearing of the same case Vice-Chancellor Knight Bruce said (2 De G. and J., at pp. 695, 696): "Upon the principle, therefore, of protecting property, it is that the common law, in cases not aided nor prejudiced by statute, shelters the privacy and seclusion of thoughts and sentiments committed to writing, and desired by the author to remain not generally known. . . . Such, then, being, as I believe, the nature and foundation of the common law as to manuscripts, independently of Parliamentary additions and subtractions, its operation cannot of necessity be confined to literary subjects. That would be to limit the rule by the example. Wherever the produce of labour is liable to invasion in an analogous manner, there must, I propose, be a title to analogous protection or redress." The right of an author of an unpublished literary production or work of art not confined to the paper or canvas or other material upon which the work is written or placed. His right is an exclusive right to publish or refrain from publishing it, as he may please, and anyone who publishes it without his consent infringes his legal right, and the act which is actionable *per se*. It matters not how the wronger obtained the production which he publishes, whether he took away the author's original material, or whether he only copied it, or whether some third person copied it and passed the copy on to him. In "*Miller v. Taylor*" (1769, 4 Burr., 2,303) the question determined was as to the existence of any common law right of property, after publication by the author, and after the expiration of the statutory period of copyright under the Act of Parliament (Ann., c. 19. The effect of the decision of the Court of King's Bench in that case was afterwards reversed by the House of Lords in "*Donaldsons v. Beckett*" (1774, 4 Burr., 2,408), which decided that after due publication, and the expiration of the statutory copyright, the author's sole right of printing and publishing is at an end. But in both those cases the nature of the common law right before publication and the remedy for the violation of that right were considered. In the former case Lord Mansfield, at p. 2,396, stated that the common law right in unpublished works was "equally detached from the manuscript or any other physical distance whatsoever"; that the common law right was violated by another person printing it without the author's consent; and that the proper remedy was by an action on the case for damages. In "*Donaldsons v. Beckett*" (*ubi supra*) the question was raised whether an innocent violation of the common law right would give rise to an action for damages. The Judges were directed by the House of Lords to give their opinion upon five questions, of which the first was: "Whether at common law an author of any book or literary composition had the sole right of first printing and publishing the same for sale, and might bring an action against any person who printed, published, and sold the same without his consent?" Of the twelve Judges, eleven gave a formal opinion, and eight of them, including the Lord Chief Justice of the Common Pleas and the Lord Chief Baron, answered the question so put in the affirmative; two of them (Mr. Baron Perrott and Mr. Baron Alderson) answered the question by saying that at common law an author had the sole right as mentioned, but could not bring an action against any person who printed, published, and sold the same, unless such person obtained the copy by fraud or violence; and one Judge (Mr. Baron Eyre) answered the first question in the negative. The remaining Judge was Lord Mansfield, and it appears from "*Burr.*, 2,417, that Lord Mansfield concurred with the eight Judges in the first question. The result, therefore, was that, in the opinion of nine of the twelve Judges, an action lay for the infringement of

the common law right against a person who infringed although innocently and without any fraud or violence. This view was acted upon by the Court of Exchequer in 1862. In "*Mayall v. Higby*" (1 H. and C., 148), the defendant was the innocent purchaser of some unpublished photographs belonging to the plaintiff, and which the vendors were not entitled to sell to the defendant. The defendant took fresh negatives of these photographs, and printed from the negatives so obtained. The plaintiff at the trial obtained not only judgment for the return of the photographs or payment of their value, but also 40s. damages for the injury done to him by taking the copies, and an injunction restraining the defendant from selling the copies so obtained and from making any more. The Court of Exchequer upheld the judgment, the Lord Chief Baron stating that the 40s. damages were in respect of the infringement of the plaintiff's right. Baron Bramwell pointed out during the course of the argument that the wrongful act of which the plaintiff complained was a compound one—namely, copying the plaintiff's works and selling the copies. Thus the defendant who had innocently invaded the plaintiff's right by making copies of unpublished photographs, and by publishing and selling the copies so made, was held liable to damages for the invasion of the plaintiff's rights.

In the present case the plaintiff has, in my opinion, a right to recover against the defendants, the Valley Printing Company, although those defendants have not converted anything physical belonging to the plaintiff, and although they have acted innocently. The plaintiff, therefore, recovers judgment against the Valley Printing Company as well as against the defendant Rankine for £43 damages. With regard to the costs, the plaintiff raised against the Valley Printing Company an issue upon which he failed—namely, he alleged that those defendants acquired the pictures with knowledge that the same had been improperly obtained by the defendant Rankine. Although this allegation was not persisted in to the end, the Valley Printing Company were brought into court to defend it, and are entitled to be relieved in respect of it from some portion of the costs of the action. The proper course will be to let the plaintiff's costs be taxed, and let him recover two-thirds of the amount against the Valley Printing Company. There will be an order for delivery up to the plaintiff on oath of all copies and colourable imitations (if any) of his pictures and designs in the defendants' possession.

## Exhibitions.

### LONDON PICTURES.

When one considers the altogether unique effects that London presents, the wonder is great that artists living in the midst of its varied charms do not more often make it the theme of their pictorial efforts. No place on earth is exactly like it. All other large towns at home and abroad are large towns. London is a world. Foreign artists have fallen before its fascination more frequently, perhaps, than have English painters. Possibly they are on the look out, and are receptive by intention, whilst the native is callous as to what has been his everyday environment from infancy. Nevertheless, one would think that the stately massiveness of a Thames bridge, swarming with traffic, under the glare of sunlight, need not have waited for Pissarro's eye and hand.

There have been plenty of London sketchers making pretty drawings of "old bits," "quaint bits," and so on; but that is not seizing the spirit of unique London. Paris or Nuremberg would furnish better hunting grounds for such subjects. Latterly one or two talented men have caught the spirit of its romantic dreariness in scaffolding subjects and street vistas, and these certainly approach a step or two nearer to the proper point of view. But, on the whole, London is as yet un painted.

For the fact is that sketching in London is hemmed around with deterrents and difficulties. Where life and commerce teems, the constable is inexorable, and that functionary is instructed to regard a standing figure as an obstruction, to say nothing of an easel or even a box and stool. Window space is hard to command at any price, and if it were not, the preliminaries necessary are quite enough to damp the enthusiasm of a man who likes to do his work upon the immediate impulse. An omnibus seat is almost the only good point

of vantage open to an observer, and from such a transient standpoint his work, when it has been ultimately accomplished, is performed not more than an impression in the strictest sense of the word. A few minutes watching is all that is available, and the artist must in that time store his memory with a thousand differing facts if he is to turn out a masterpiece. Only consummate power with a lifelong habit and knowledge can hope to succeed under such conditions.

Due to that fact, without doubt, is the slight feeling of disappointment that follows an examination of most of the works that have London views as subject. Few seem to show sufficient subtlety in observation either of London air or London light. There is a crudeness and want of *nuance* never found in actual London views, which are generally broad, delicate, and full of gradation. In pictures where a quiet and all but permanent position for work has been possible, as in river scenes, these drawbacks should be non-existent. Further, there is no excuse in such cases, either for ill-digested observation, or for wanton carelessness in the putting down of the forms of such well-known landmarks as St. Paul's or the Houses of Parliament, buildings which were lamentably treated in a recent show of London pictures at the New Dudley Gallery.

The photographer scores in the matter of form, however matter-of-fact his picture may be as regards subtleties of tone (I am, of course, speaking of the works of artistic amateurs), he does not produce a St. Paul's that at a first glance might be mistaken for the New Old Bailey or for the church of the Salute at Venice. It is generally taken for granted that a painter in the heat of getting an impression is justified in ignoring the claims of form when they divert his attention from the seizure of more elusive things. But there are one or two points to be considered in a matter like the present. The first is whether a hit-or-miss regard of form is not sometimes an indulgence and nothing more, or an adventitious way of putting a false value upon colour and tone. A good draughtsman does not use up any appreciable amount of energy in putting down his forms calmly and with due regard to proportion. In the hastiest sketches of Sargent, for instance, his drawing is perfect, and that is one reason why his impressions are so convincing. Another point is, whether, in such an avowed object as the painting of London as London, not as mere exercise in paint, the artist is not under some obligation to represent its landmarks with something more of familiar truth, as Guardi and the Canaletti and the Dutchmen represented their own cities. Mere detail is another matter, and is better suggested than made out; but it ought to be there, in suggestion. The masses and forms of the great London buildings being, for the most part, fine in themselves, a wanton and regrettable sacrifice of beauty is involved when such faults occur as the painting of the dome of St. Paul's here egg-shaped, there globular, at another place like a hard felt hat, and again, toppling into the street below, or with exaggerated orders and mouldings in one place and with none at all to speak of in another.

It is only fair to say in this connection, that of all the pictures in recent exhibitions, the London impressions now on view at the Fine Art Society's rooms, painted in water-colours by Mr. W. Walcot, combine most successfully a perfect impression and adequate drawing. That is to say, that the buildings, vehicles, etc., are put down with a deftness and sureness of touch that seems in no way to rob from the true effect of colour and tone. Tone, perhaps, is more Mr. Walcot's *forte* than colour; but his sense of proportion is always respected. He never allows himself to play fast and loose with these demands of realism; in fact, it is easy to see in one or two of the charming renderings of Westminster Abbey that he has ruled the lines that were to guide him in depicting certain architectural features.

The result is a sense of solidity in his buildings which the generality of artists do not achieve. Certainly the majority of the New Dudley Gallery drawings did not achieve it. There is just a suggestion that photographs have been of some service to Mr. Walcot in working out his drawings from rough colour notes. It may be. But no fault should be found with such a resource if the final result gains so distinctly, and loses nothing that belongs to a true impression.

Readers may remember a reference to the London pictures of Mr. Talmage in these columns recently. They are also conscientious in a different way, though scarcely so much an attempt to render the romance and glamour of London as an attempt to reproduce with fidelity certain phenomena of London lighting. Much more poetic are the works of Mr. A. Carruthers Gould, R.B.A., who respects the proportions of our buildings, and gives fine colour schemes into the bargain.

His view of Cannon Street Station seen from an arch or bridge, is a beautiful nocturne. The tone of the sky and the colours of the lights of signals and trains, and the play of all upon smoke and steam, is well observed, and makes a beautiful subject. A similar "Nocturne," where electric lights upon the water shine, perhaps, a thought too brilliantly for pictorial purposes, if not for truth, together with another work of barges in snow, are perhaps the best of his series, which are all characterised by earnestness of purpose and poetic vision. Mr. Tatton Winter, R.B.A., paints vigorous water-colours in a direct method. His "London Bridge," with its slight screen of vaporous air and its wheeling sea gulls, is an excellent work, and his view of the Serpentine is broad and fine in effect.

Mr. Edgar Down's idea of London is largely confined to its horses, which are smartly enough painted; but are scarcely London. Half a dozen of his pictures have excellent effects, nevertheless, and his "Night effect," a "road up" scene, only too well known to Londoners, is new and arresting, if not beautiful. Most of the skies of Mr. Owen Bowen, A.R.C.A., are heavy with storm cloud. He brings his buildings out light against them in rather a mannered way.

London as a place beautiful, is appealing more and more to its artistic inhabitants, and photographers are not even upon the fringe of the subject yet. They could not have better guidance and suggestion than that afforded by the examples of the small group of artists who are attracted by the unique charm lying in the vaporous breadth and tender colouring of the great metropolis; the city of certain characteristics which other cities do not share.

F. C. TILNEY.

## Patent News.

*Process patents—applications and specifications—are treated in 'Photo Mechanical Notes.'*

The following applications for patents were received between January 27 and February 1:—

**COPYING.**—No. 2,076. Improved mechanism for the production of photographic copies and the like. Jakob Röttgen and Julius Frey, 322, High Holborn, London.

**CAMERAS.**—No. 2,142. Improvements in stereoscopic cameras. Jules Richard, 53, Chancery Lane, London.

**COLOUR PHOTOGRAPHY.**—No. 2,213. Improvements in and relating to three-colour reticules for colour photography. Robert Krayn, 33, Cannon Street, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

**ARC LAMPS.**—No. 19,014, 1907. The invention relates to electric lamps in which the light rays are concentrated by enclosing the source of light in a cylinder having a longitudinal slot, or opening, which may be closed to any desired degree by employing therewith an internal or external, cylindrical slide, or shutter, movable upon a concentric axis, and the invention consists of improvements in lamps of this class which are more especially intended to produce powerful illuminating effects in rooms where photographs are taken.

A cylinder is provided consisting of two portions forming shutters, which can be rotated so that one portion slides over the other (or each may be rotated), giving a maximum aperture of 180 deg. Within the cylinder is an arc light, the two electrodes of which are adjustably mounted one at each end of the cylinder.

The part 1 carrying the source of light is connected by a ball-and-socket joint 2 to the support consisting of a pillar 3 and a base 4. The source of light is an arc light, 5 and 6 being the electrodes to which electric current is supplied by means of the terminals 7 and 8. The electrodes 5 and 6 are clamped, by means of screws 9 and 10, between jaws 11 and 12. The light is produced within a cylinder 1 consisting of two portions, or shutters, 13 and 14, mounted so that they can be partly rotated; or either of the shutters, 13, 14, can be stationary and the other movable. By means of the shutters the illuminating effect can be regu-



lated as required, these shutters enabling an opening, or slit, of any desired width to be obtained for the passage of the light.

The arc light can be adjusted in any convenient way, such as by operating by hand a regulating spindle 15 provided with right and left hand screws, and shifting, when it is turned, the electrode holders 11 and 12, which are supported by a guiding rod 16 and provided with nuts to engage the said screws.

On a semi-circular piece, 17, of metal, or other suitable material,

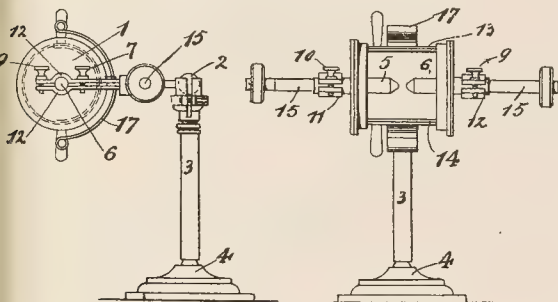


Fig. 1.

Fig. 2.

a shade-holder can be mounted to carry a shade when it is desired to use the lamp as a table lamp. The ball-and-socket joint 2 enables the lamp proper to be adjusted to any required position.

J. Y. Johnson, for the Jupiter Elektrophotographische Gesellschaft, m.b.H., of 38, Schlossstrasse, Bockenheim, Frankfurt-on-Main.

**DAYLIGHT CHANGING AND DEVELOPING.**—No. 1,404, 1907. The first claim is "for the daylight production of photographic negatives from dry plates or cut films, the combination comprising a magazine camera and dark cell or plate-box fitted with means for cutting out each plate singly and after exposure discharging same into a similar plate-box in the lower part of the camera and a daylight developing appliance or box with which the box of exposed plates is made to engage in a light-tight manner and to discharge each plate singly into the interior." The twelve drawings of the apparatus and the descriptions thereof are necessary for a proper explanation of the apparatus. George Wishart, of High Bushmill, Cambuslang, and Frederick MacKenzie, 17, Douglas Street, Glasgow.

The following complete specification is open to public inspection before acceptance under the Patents Act, 1901:—

**OPYING.**—No. 1,615 Apparatus for reproducing at a distance graphic documents (photographs, blocks, drawings, etc.). Belin.

## New Trade Names.

**DEVOLVINE.**—No. 299,289. Photographic developers. Reitmeyer and Co., 63, Crutched Friars, London, E.C. January 4, 1908.

**DEVOLIN.**—No. 299,290. Photographic developers. Reitmeyer and Co., 63, Crutched Friars, London, E.C. January 4, 1908.

**ENCRO.**—No. 299,047. Postcards, photographs, and printed matter in the nature of booklets and circulars. Jack Benn and George Cronin trading as Benn and Cronin, 149, Great Titchfield Street, London, W. December 21, 1907.

**CLAPHAM CARLTON CAMERA CLUB.**—At a recent meeting of the Clapham Carlton Club it was decided to form a photographic section or those members interested in photography, thirty of whom have already been enrolled and the following officers elected:—President, Major F. Johnson; vice-president, Mr. James Arrow; committee, Messrs. H. E. Fuller (chairman), G. Bennison, A. E. Lomax, F. Van Neck, and B. Watson. The hon. secretary and treasurer is Mr. Herbert Tozer, to whom all communications should be addressed at Preston House, South Side, Clapham Common, S.W., and from whom all particulars as to membership, etc., may be obtained.

## Analecta.

### Diffusion Screen for Bromide Enlargements.

For some time past (writes Mr. R. Berry, in "The Photographic News") I have successfully used a coarser kind of muslin or butter cloth, which I attach to a light wooden picture frame of about 15 x 12 size. The muslin is first damped and afterwards tacked round the frame, a layer of stout drawing-paper equal to the width of the frame being superposed so as to increase the tacking surface. Of course, the cloth is pulled fairly taut during this operation, and when the screen is dry it will be found quite tightly stretched and without sag. The method of using the diffusing screen, from which, I think, the most pleasing results are to be obtained, is to interpose it about half-way between the lens of the enlarger and the bromide paper, keeping it in constant motion during the exposure. More diffusion can be obtained by using the screen nearer the paper, and vice-versa. The use of the screen will increase the exposure from one and a half to twice that which would be given without it. It should be remembered that when using bolting silk or any such screen, we may use it for two somewhat different purposes. First, to impart a dot-like half-tone block effect by using it close to the paper; second, to employ it to give a general softening effect by the method above described.

### A Delicate Test for Mercuric Chloride.

An interesting method of detecting minute traces of mercuric chloride (corrosive sublimate) (writes "Knowledge") has recently been devised by Herren Kof and Haechn. It is based upon the fact that if a sensitive photographic plate be placed film downwards at a distance of 5 to 10 millimetres from the surface of a dilute solution of the salt, the subsequent development of the plate is retarded. By placing a narrow strip of glass across the top of the beaker containing the solution, that portion of the photographic plate covered by it is protected from the radiation, and it is possible, after sufficient exposure in the dark-room to obtain subsequently an image of this protecting diaphragm upon the plate. This action of the mercuric chloride solution on the plate may be prevented by adding common salt in such proportions that a considerable amount remains undissolved, an inactive double compound apparently being formed. If now, however, a solution of tin chloride be introduced, dissociation and reduction of the mercury compound begins, and the photographic plate is again affected, but with this difference, that an image of a diaphragm between appears as a positive instead of as a negative on development. The reaction is obtained with solutions containing from 0.01 to 6 per cent. of mercuric chloride, but not with a 0.001 per cent. solution. In comparative experiments, in which a beaker containing a 2 per cent. solution was covered with moist absorbent paper, it was found that the mercury salt volatilised at the rate of 0.000000011 gramme per square centimetre of paper in thirty minutes (the time after which the first faint reaction could be observed on a photographic plate). These values were found by saturating similar pieces of paper with solutions of mercuric chloride of known strength, and comparing the stains given by these, on exposure to sulphuretted hydrogen, with those given under the same conditions by paper exposed at a distance of 5 to 10 millimetres above the test solution. If a drop of a 0.01 per cent. solution be placed in a cavity in an object glass and the film of a plate exposed to its action at the distance stated for 24 hours in the dark-room, the image of the drop will appear as a white spot upon the plate after development.

**GERMAN TARIFFS.**—It is announced that the duty on "lichtpaus" paper—that is, papers such as ferro-prussiate and others used for the copying of plans—is 10s. per 100 kilogrammes.

**THE SCOTTISH NATIONAL SALON**, which is being held this year in the Art Gallery, Aberdeen, will be opened at noon to-morrow, February 15, by the Very Reverend John Marshall Lang, C.V.O., Principal of the University of Aberdeen, and will remain open till the evening of March 7. A musical entertainment, a lantern exhibition or a lecture (illustrated by lantern views), has been arranged for each evening during the three weeks the Salon is to remain open. The exhibition will be open daily from 12 to 5.30 and 7 to 10, Saturdays 11 to 10, the special entertainments commencing each evening at 8 o'clock.

## New Apparatus, &c.

The Cuckoo House. Sold by Marion and Co., Ltd., Soho Square, London, W.

Messrs. Marion have just introduced this studio toy for the delectation of the infant mind. It consists of what is described as a "cuckoo house," though whether the edifice answers correctly to the description, our knowledge of the subject, we regret to say, is not



sufficient for us to speak authoritatively. At any rate it is enough to state that pressure upon a lever, which projects from the "basement" of the "cuckoo house," causes the bird to appear at its front door, and to announce its presence with a loud "cuckoo." Four shillings and sixpence will purchase this phenomenon and pay the carriage on it.

## New Materials, &c.

"Cubrome" Thiomolybdate Sepia Toner. Made by Edmund and Co., 3, Ezra Street, Columbia Road, London, E.

A new departure in the sepia toning of bromide and gaslight prints, frequently described as the sulphide process, is made in the issue of this preparation. Readers of Mr. H. E. Smith's communications in reference to the process will be familiar with the chemical fact upon which it is based, namely, the use of a solution of thiomolybdate in place of that of sodium sulphide. Apart from the comparative absence of any odour due to the sulphuretted hydrogen, the method has certain advantages claimed for it which in our experience of it have been quite borne out. As sent out by Messrs. Edmund, the preparation consists of a bleaching solution, which is diluted with an equal quantity of water for use, and of a toning liquid, 5 minims of which are added to two ounces of water. A bromide print of average intensity bleaches in something less than a minute, is washed for one to two minutes, and is then immersed in the toner for a full five minutes. A final washing of twenty minutes in running water completes the process. The proper length of time in the toner should be insisted on, as the full depth of brown colour is not obtained by shorter immersion. If, owing to prints being removed too soon, the tone is not sufficiently brown, the prints may be re-immersed in the bleacher for five minutes, washed and toned again, or they may be placed in a weak bath of ammonia, 3 per cent., for two or three minutes. Either treatment will improve the brownness of the tone. The first advantage which the process is seen to have is that it gives a slight—very slight—intensification to the print. Although its tendency in this respect is not enough to require a print of less intensity to start with, yet it has the effect of giving sparkle and brilliancy to the print owing to the fact that the lesser colouring power of the toned image is compensated for by the slight increase in the deposit. A comparison of a print toned by thiomolybdate and with sulphide will show the advantage of the former method in this respect.

Our own trials have been made with bromide prints, but in regard

to gaslight the makers claim that the thiomolybdate does not produce the yellowish shade of tone which is not uncommonly the result of sulphide toning. As regards the permanence of the result, the silver sulphide formed is certainly as permanent as that produced by the ordinary sulphide process. The proportion of molybdenum sulphide which enters into the composition of the image is at any rate no less permanent than silver sulphide. There certainly seems good chemical reason for the permanency of the toned prints, and the method is altogether one which will re-intensify the popularity of sepia-toned bromides.

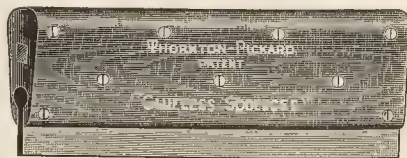
A circular of instructions has been issued by Messrs. Edmund and gives the precise manipulation advised by them for their patented process. The solutions themselves, our results with which we have just described, are sold in packets, price one shilling, and will be obtainable immediately from Messrs. Edmund or from photographic dealers.

"Graysinn" Matt C.C. Paper. Sold by F. E. Jones and Co., 22, Gray's Inn Road, London, W.C.

From samples of this paper which we have had under trial it has been evident to us that amongst the products which Messrs. Jones supply specially for the purposes of the professional photographer, their collodion paper is one which can be commended. Collodion-chloride, on account of the rich appearance of the prints and the fine tones obtained on it by gold *plus* platinum toning, is so largely in favour that a professional has certainly to decide upon some brand or other of it unless his business caters for none but the cheapest, or, on the other hand, the highest type of sitter, who will have sepia, platinum, or carbon. For the great average, however, collodion-chloride provides a handsome and reasonably inexpensive print, all to the credit of which are the close imitations of its character by some of the makers of gaslight paper. As we have found it, the "Graysinn" paper tones readily and to a series of satisfactory colours. It is free from curling and cracking tendency when handled with ordinary precautions, and may thus be said to answer all the requirements demanded of a C.C. paper. It is made in the following four grades: "Smooth white, thin," "smooth cream, thin," "rough cream or white, thick," samples of which are obtainable on application to 22, Gray's Inn Road, W.C. Messrs. Jones have shown us a remarkably fine series of prints made by professional users of the papers, a selection of which could no doubt be examined by any professional photographer applying to them.

The "Glueless" Squeegee.—Made by the Thornton-Pickard Manufacturing Co., Ltd., Altrincham.

The name of Thornton-Pickard having long been the hallmark of efficiency in camera and shutter construction, it is satisfactory to find that the firm is not to restrict its energies to these branches of the photographic wood-working trade, but, as evidenced by its first introduction of a minor accessory, aims to supply the photographer with the smaller but equally essential tools. In the "Glueless"



squeegee the rubber blade is provided with the dumb-bell-shaped end seen on the right of the drawing, and is thus held in the specially grooved handle without glueing. The handle itself is of a specially convenient rounded form, and the rubber blade is screwed in it, so that in the case of a new rubber being required it can be inserted by simply removing a couple of screws and taking out the worn-out rubber. The squeegee is certainly a most workmanlike article for hard wear, and is obtainable in five sizes from 6 to 18 inches in length, prices from 2s. to 6s. each. New rubbers are obtainable at prices from 1s. to 3s. each.

LETO GREEN TONER.—In reference to our review last week of a green-toning preparation, the Leto Photo-Materials Company, 3, Rangoon Street, E.C., remind us that a pair of solutions for the same purpose is supplied by them with other Leto toners. We must admit that the fact escaped us when writing of the new preparation, but



we have since renewed our acquaintance with the active properties of the solution, which we can say allow of the rapid toning of bromide prints. The composition of the Leto toner evidently differs from that of the preparation which we have reviewed, and it will doubtless interest those desirous of obtaining a range of green tones to compare the results by the two solutions side by side.

### CATALOGUES AND TRADE NOTICES.

**TRESS SPECIALTIES.**—A new catalogue issued by the Tress Co., of 4, Rathbone Place, Oxford Street, London, W., is, like other publications of this firm, stocked with particulars and illustrations of novelties of essentially professional interest, all at most moderate prices. It contains, among other items, details as to a new studio gas portrait lamp, dry-mounting machine, panel repeater, and numerous accessories, frames and backgrounds. It is most emphatically a list which the professional photographer should have by him for reference.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

FRIDAY, FEBRUARY 14.

Sutton Photographic Club. "Photographic Tiles and Platinotype on Linen." E. A. Salt.  
Lancaster Photographic Society. "A.P.' Prize Slides."

MONDAY, FEBRUARY 17.

Southampton Camera Club. Lecturette Competition.  
Lancaster Photographic Society. "Development of Autochrome Plates." R. W. Waring.  
Bradford Photographic Society. "Genre and Figure Studies." T. Lee Syms, F.R.P.S.  
Scarborough and District Photographic Society. Focus Prize Slides.  
Stafford Photographic Society. "Lantern Slide Making." W. Kirkham.  
Kidderminster and District Photographic Society. "P.O.P. Toning." W. Thompson.  
Harrow District Photographic and Scientific Society. "Platinotype." J. Richardson.  
Workington Photographic Society. "Tabloid" Photographic Chemicals.  
Catford and Forest Hill Photographic Society. Monthly Competition—Criticism.  
Dr. A. R. F. Evershed.  
Canterbury Camera Club. Rotary Carbograph Paper.

TUESDAY, FEBRUARY 18.

Royal Photographic Society. "London in the Eighteenth Century." A. H. Blake, M.A.  
Epsom and District Literary and Scientific Society. "After Treatment of the Negative."  
Hackney Photographic Society. Annual Dinner.  
Birmingham Photographic Society. "Amongst the Foothills of the Eastern Alps." J. Dudley Johnston.  
Working Camera Club. "Hford Lantern Plates." Algernon Brooker.  
Wimbleton and District Camera Club. "Flower and Fruit Photography." Edward Seymour.  
Sheffield Photographic Society. "The Theory and Practice of Time Development." W. F. Slater, F.R.P.S.  
Elaiogorie and District Photographic Association. Annual General Meeting.  
Maldstone and Institute Photographic Society. Rotary Carbograph Paper.

WEDNESDAY, FEBRUARY 19.

Borough Polytechnic Photographic Society. "Flower and Fruit Photography." E. Seymour.  
North Middlesex Photographic Society. "Bromide Printing and Toning." E. R. Mattocks.  
Central Technical College Photographic Society. "The Pinatype Process." A. Rogers.  
South Suburban Photographic Society. "Combination Printing and Printing." Ernest Human.  
Mill Camera Club. "Copying." W. Mansfield and W. Richardson.  
Woodford Photographic Society. "Rawlins Oil Pigment Process." J. J. Griffin & Sons.  
Leeds Camera Club. "Further Experiments in Bromide Toning." Fred. J. Webster.  
Bristol Photographic Club. "A Description of Hand Cameras and their Use." J. S. Guthrie.  
Croydon Camera Club. "Hints on Mounting Prints." E. A. Salt.  
Lancaster Photographic Society. Annual Supper.  
Margate Photographic Society. Rotary Carbograph Paper.

THURSDAY, FEBRUARY 20.

Bath Photographic Society. "Sutting the Printing Process to the Negative." S. R. Lewin.  
Handsworth Photographic Society. "Midland Federation Portfolio."  
Hull Photographic Society. "Theory and Practice of Time Development." W. F. Slater.  
L.C.C. School of Photo-Engraving and Lithography. "Lettering." A. E. R. Gill.  
Richmond Camera Club. Affiliation 1907 Prize Slides.  
London and Provincial Photographic Association. "A Photo Mechanical Process." Archer Clarke.  
Liverpool Amateur Photographic Association. "Magnesium Light Photography." F. J. Mortimer, F.R.P.S.  
Midlothian Photographic Association. "Ozobrome." Geo. Cleland. "One Man Show." E. L. Brown.  
Chelsea and District Photographic Society. Annual General Meeting.

Rugby Photographic Society. "Lantern Slide Making." B. B. Dickinson, M.A.  
Leek Photographic Society. "Tabloid" Photographic Chemicals.  
Dover Institute Photographic Society. Rotary Carbograph Paper.

### ROYAL PHOTOGRAPHIC SOCIETY.

THE annual general meeting was held on Tuesday last, the President, Mr. J. C. S. Mummery, in the chair.

The deaths were announced of Mr. F. Dunsterville and Mr. E. R. Cassells, Fellows of the Society.

The presentation of the Progress Medal (1908) was made to Mr. J. Sterry, upon whom has also been conferred by the Council the Honorary Fellowship of the Society.

In discussing the report of the Council Mr. H. Maclean suggested with regard to the "Journal" that the notices of new apparatus and materials were incomplete. He would discourage the continuance of such notices; it was best to do reviewing thoroughly or not at all.

In reference to the exhibition, Mr. Maclean put a resolution that the pictorial section committee each year should include two members who had not previously served. This was seconded, but was lost on being put to the meeting.

The President drew attention to the omission from the report that the thanks of the Society were due to Mr. E. O. Hoppe for his valuable aid in obtaining the foreign exhibits at the Society's exhibition.

Arising out of the Council's reference to the library, Mr. E. J. Wall thought that an effort should be made to arrange the books according to subject. The President stated that the intention was to appoint a small committee to deal with the library.

In reference to the Society's museum, the Rev. F. C. Lambert asked whether a catalogue could not be published. The longer such a duty was postponed the more difficult it became to discharge it. Mr. Oliver Dawson suggested that the catalogue should be illustrated; it should be, he thought, a scientific work. Dr. C. E. K. Mees put forward the suggestion that the museum might be added to by gifts from exhibitors in the technical section of the Society's annual exhibition.

Some discussion took place as to the formation by the Society of a national photographic portrait gallery. It was explained that such a collection would consist of photographic portraits, very carefully selected, of British celebrities.

In regard to the affiliation it was stated that 157 societies in the United Kingdom, and thirteen in the colonies, were now affiliated. The cost of the affiliation to the R. P. S. included certain office work, the use of rooms, a copy of the "Journal" to each society, and admission at half-price to the exhibition. It was stated that 4,796 half-price tickets, representing £120, were presented at the last exhibition. One speaker suggested that the Society was £120 out of pocket on this transaction, but another member, who appeared to voice the general opinion of the meeting, thought that the greater portion of these tickets were paid for by persons who otherwise would not have visited the exhibition.

Votes of thanks to the various officers of the Society and a special vote to the treasurer concluded the discussion of the report.

The following have been elected officers for the present year:—

President: Mr. J. C. S. Mummery; Vice-presidents: Sir W. de W. Abney, The Earl of Crawford, Sir Joseph W. Swan, Major-General J. Waterhouse; Treasurer: John Sterry; Council: T. Thorne Baker, A. W. W. Bartlett, Henry W. Bennett, Leslie E. Clift, Douglas English, T. E. Freshwater, John H. Gear, E. T. Holding, G. Lindsay Johnson, Rev. F. C. Lambert, Furley Lewis, Ernest Marriage, A. Marshall, F. Martin Duncan, C. E. K. Mees, F. J. Mortimer, C. Welborne Piper, E. Sanger-Shepherd, H. Snowden Ward, B. Gay Wilkinson.

**LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.**—On Thursday, February 6, a large number of members and friends gathered at the house-warming social of the L. and P. at the Olde Napier Tavern, 25, High Holborn. Mr. T. E. Freshwater (in the chair), addressed words of welcome to all, saying that the Association had passed its twenty-fifth birthday, and that the officers had hopes of it living at least another twenty-five years. They had long been dissatisfied with the old meeting-room, where they had been stationed some thirteen to fourteen years, and he thought all would admit

that present quarters were more comfortable than the old one. An interesting musical programme followed.

**EDINBURGH PHOTOGRAPHIC SOCIETY.**—At a meeting on February 5 a lecture, entitled "With Motor and Camera in Normandy and Touraine," was given by Mr. John Warrack. In commenting on the beauty and charm of the old churches and cathedrals which are such an interesting feature of the neighbourhood of Rouen, Caen, and Blois, Mr. Warrack said that the spirit which, 700 years ago, led men to plan "those long-drawn aisles and fretted vaults," was now largely diverted into the more secular and unromantic channels of applied science and mechanics. Excellent lantern slides from Mr. Warrack's own negatives showed the photographic possibilities of Normandy and Touraine.

**CENTRAL TECHNICAL COLLEGE PHOTOGRAPHIC SOCIETY.**—"Gum-Bichromate" was the subject of a very interesting lecture given by Mr. D. R. Pimock on Wednesday, February 5. Following the lecture a demonstration of the process was given, when several excellent results were obtained. Further prints were handed round, illustrating amateur and professional work on "Page-Croft" pigment paper.

**SOUTHAMPTON CAMERA CLUB.**—Mr. A. E. Henley gave his lecture, entitled "Some Cathedrals I have visited," at the Philharmonic (small hall), on Monday evening last before a large audience.

## Commercial & Legal Intelligence.

**SEPIA BROMIDE IN THE COUNTY COURT.**—In the Birmingham County Court on February 7, an interpleader action to recover a formula relating to a secret photographic process was brought by the Page Croft Paper Company, the nominal defendant being W. Harold Kimpton, solicitor, of Birmingham, and the claimant John H. Gillard, photographic expert, of Watford. Mr. J. G. Hurst (instructed by Mr. W. H. Stoddard) appeared for the plaintiffs. The claimant did not appear, and the defendant stated that he had no objection to giving up the formula. Mr. Hurst explained that Mr. Gillard was the inventor of a secret process in connection with a brown sepia bromide paper for direct development without subsequent toning. He agreed with the plaintiffs to deposit the formula with Mr. Kimpton pending the formation of a company, and to continue his experiments at the plaintiffs' works. He had failed to complete his experiments and to comply with other terms of his agreement with the plaintiffs, and in consequence of the breach of agreement the plaintiffs were entitled to take possession of the formula. After hearing formal evidence, the Judge made an order for the formula to be handed over to the plaintiffs, and barred the claimant from making any claim against Mr. Kimpton in respect of it.

**PHOTOGRAPHER AND MINING SPECULATIONS.**—In the King's Bench Division on February 7, Mr. Justice Bray and a common jury concluded the hearing of the action in which Mr. Henry Bown, formerly a photographer in business in New Kent Road, S.E., claimed £1,000 from Mr. Thomas Isaac Grimes, accountant, of 32, Great St. Helens, which, he said, he advanced as a loan. The defendant, a director of the Nigel Main Reef, Ltd., denied liability or that the £1,000 was a loan, and said that the sum was placed at their joint account at plaintiff's bank for purposes in connection with the company. The jury found for the plaintiff, and his lordship gave judgment for the amount claimed, with costs.

**NORWICH BANKRUPTCY.**—The first meeting of the creditors of Percy John Swain, of 37, Earlham Road, Norwich, carrying on business under the style of John Percy, at 2a, Davey Place, Norwich, formerly also carrying on business at the same place, and at Oxford Place, Norwich, in partnership with Louis Smith, as Louis Smith and Co., photographer, was held at the offices of the Official Receiver at Norwich on Monday. Debtor's statement of affairs showed twenty-eight unsecured creditors for £243 12s. 9d., and one contingent liability to rank against the estate of £15. The deficiency is £164 11s. 1d. The causes of failure, as alleged by the debtor, are insufficient earnings at Hastings to meet expenses. The Official Receiver reported that the debtor started at White Rock, Hastings, as a photographer,

in 1902, with a capital of £25. The business was unsuccessful, and in January, 1906, all his effects were sold under a distress for rent and an execution, which left him with liabilities amounting to over £100. Between January 1906, and March, 1907, debtor has held situations in the photographic business at Hartlepool, Humstanton, and Boney, N.B.

The Official Receiver will wind up the estate under a summary order.

### NEW COMPANIES.

**DISSOLUTION OF PARTNERSHIP.**—The partnership between William Edward Hailstone and Thomas Knight, photographers, of High Street, Hadlow, Kent, has been dissolved by mutual consent.

**LEGAL NOTICES.**—Creditors of the Pictorial Postcard Company Ltd. (in liquidation), are requested to send their claims to E. H. Stringer, chartered accountant, of 110, Cannon Street, E.C., by February 9.

A receiving order has been made against Sidney Butt and Josiah Butt, photographers, of 35, Tabernacle Road, Skewen, Glamorgan.

A first and final dividend of 2s. 11d. in the £ is to be paid in the bankrupt estate of John Edward Reeves, photographer, of 48 and 50, Hermit Road, Canning Town. Payment will be made at Bankruptcy Buildings, Carey Street.

**WILLIAM TYLAR (ASTON).**—This company has just been registered with a capital of £5,000 in £1 shares (1,000 6 per cent. cumulative preference), to take over the business of a photographic apparatus manufacturer carried on by W. Tylar at 41, High Street, Aston, Birmingham. The subscribers are: W. Tylar, Mrs. C. Starkey, B. Starkey, A. I. Knutton, J. T. E. Roberts, Mrs. K. Fletcher and Mrs. L. Phillips.

## Correspondence.

\* \* We do not undertake responsibility for the opinions expressed by our correspondents.

\* \* Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

### PHOTOGRAPHERS AS PROFESSIONAL MEN.

To the Editors.

Gentlemen,—As one of the midget men, those common people who have no purpose in living, and yet, seemingly, have no great inclination to die, may I make a few remarks on this question of "Photographers as professional men"?

I have been interested and not a little amused by the correspondence, but my amusement reached its height when I read Mr. Goodyer's letter last Friday.

Now, I have no doubt that Mr. Goodyer is an artist with a large amount of "soul" (as he terms it) in his work, and has accordingly "no cause to complain of his social position," but I want to ask is there not a good deal of humbug and snobbishness in this idea of his of weeding out what he is pleased to call "the unfit"?

Now, by Providence, I am a photographer, as he and your other correspondents are. They may take cabinets, put "soul" into their work, gain the glory, and if that's the main reason for them keeping open their shops (I beg pardon! I mean "studios")—no brass plate, please!—verily, they have their reward.

But I am an unfortunate individual. I open my shop for a living—for bread and butter. I take midgets, sticky-backs, anything that a camera will take. I may not raise the standard of photography—I don't want to. I open my shop for something to eat, and I cannot eat glory, but I can eat bread and butter, and, verily, I have my reward!

Now, why should Mr. Goodyer want to weed out what he so superciliously calls the unfit. If, as he says, "the work of an artist will always meet with its reward"—i.e., glory and social status—why worry about weeding out poor me? Why waste his "soul" on that? No, he knows better. He knows that the midget man is making money, retiring early, and putting his soul into his motor car, while



and his confrères are still at it plenty of merit, plenty of social position, but precious little of the very useful £ s. d.

Well, I repeat myself—verily, they have their reward, and they are welcome to it says

ONE OF THE UNFIT.

February 9, 1908.

To the Editors.

Gentlemen,—With regard to Mr. Goodyer's contention in last week's "B.J.," that the subject of the status of photographers is being taken too seriously, I would point out that one's status is intimately connected with the amount of business done. Take the case of a doctor. If his social standing is improved his practice improves also. One can easily see that a doctor who is, socially speaking, in a good position, has a better chance of succeeding than one who is "not known," or not recognised by the well-to-do people. It is much the same with a photographer. If he has the social tact to be able to meet his clientele on an equal footing, socially, he is almost certain to benefit by it, for he will be introduced to their friends, who will possibly become his clients. This is more noticeable in smaller towns where the photographers are perhaps not more than four in number. All four may be capable of turning out work of excellent quality, but the one who is greatest, socially speaking, will do the best business.

Personally, I think photographers would benefit greatly if they could, by examination, attain a degree. Most other professions have this advantage, an advantage which gives them a certain amount of social standing. It would also touch very closely the question of "fit and unfit."—I am, yours faithfully,

ALFRED WRATE.

The Avenue Studio, Lumley Avenue, Skegness,  
February 8, 1908.

To the Editors.

Gentlemen,—Many of the readers of your valuable journal will no doubt have been interested to read the letters and articles of your various correspondents relating to the status of professional photography and how to raise it.

I think the reason for the present state of affairs lies in the fact that the vast majority of photographers, contrary to the general opinion, are not an intellectual class, from whence come all the petty jealousies and narrow-mindedness one so often sees exhibited by photographers. Look at all the other trades and professions; it does not matter how low they may be from a social standpoint, yet they nearly all have their societies or trade unions, but the better-class photographers have not sufficient intelligence or comradeship to organise themselves properly.

However, the question now is, how to raise the status of professional photography, and having had experience of practical professional photography in several countries, I have come to the conclusion that the only way to improve the state of affairs is the following:—

In the first place, all the professional photographers must be organised—employers and employees. Secondly, no photographer should be allowed to take an apprentice. The apprenticeship system should be abolished, and instead everybody desirous of becoming a professional photographer should, so to say, be obliged to take his degree in photography, like a doctor or lawyer, which could be arranged at several universities—for instance, at Edinburgh, Birmingham, or London, where special courses could be given in optics, chemistry, book-keeping, art and practical lessons in all branches of photography; and, say, after a three years' training in one of these universities, or a special university for photographers, and having been duly qualified by exam., then, and only then, should the would-be photographer be granted a licence to carry on business as a professional photographer; and also, before being admitted to this training, the novice must have passed a certain standard in other schools. In this way, in about twenty years' time the photographer would reach the same sort of position as the doctors and lawyers, there would be much less competition, and the standard of work generally would be on a higher level. Also, it would not harm the faddists or amateurs; they would still be able to make their art studies to their hearts' content, only they would not be able to sell them, not having the necessary licence. When a student of photo-

graphy shall have received his diploma he would find at once well-paid employment. Owing to the fact that it would cost nearly as much to become a photographer as a lawyer or any other profession, the class would consequently be greatly improved socially. Just think, in twenty or thirty years' time, if this system was adopted, there would not be canvassing, or free sittings, etc., it would be looked upon as being too unprofessional, and photographers would be looked up to as a highly respectable class.

In regard to assistants they should be allowed to frequent evening schools in order to obtain the diploma, practical knowledge being allowed to count to a certain extent in place of theory.

Press photographers should be classed apart, but should be obliged to have a licence in order to sell their work.

I think you will see that the general idea of this is to prevent the two or three weeks' old amateur setting up as a photographer, and so causing unnecessary competition and bringing discredit on professionals generally.

In conclusion, please excuse me for taking up your valuable time, but I should be only too pleased if I could do something to help the profession towards a higher level, because sometimes I feel ashamed to say I am a photographer. One is always looked upon with just a little suspicion. I suppose people think they are going to be asked to come and have a free sitting, with a high-class finish enlargement thrown in, and as in this world nobody ever gives something for nothing, naturally the suspicion.—I remain, yours truly,

12, Via Dante, Milan, Italy,

ALBERT E. ELSY.

February 5, 1908.

[We are afraid our last correspondent is altogether too optimistic. If he makes a list of the professions which can be practised only by those with diplomas, he will find them very few indeed. It is not likely that powers will be obtainable to secure such protection for professions which do not involve danger to life or limb, and even dentists practise unhindered as "teeth institutes," unpossessed of a qualifying diploma. We regard the examination qualification as totally impracticable in the case of professional photography, and we regard the correspondence on this subject as confirming our own contention that the most advisable position for a photographer to aspire to is that of a maker and seller of portraits. of a craftsman ready to work according to a tariff of prices. We should like to hear of forcible arguments to move us from this opinion, but we cannot discover that they have been put forward so far in the present correspondence.—Eds., "B.J."]

## PINHOLE APERTURE NUMBERS.

To the Editors.

Gentlemen,—In the issue of December 20 I note a letter from Mr. Alfred Watkins in reference to priority or credit for the system of calculating pinhole exposures, published by me in "Camera Craft" in 1902, and later explained fully in my monograph on pinhole photography, No. 70 of the "Photo-Miniature" Series. I have noted from time to time discussion in the photographic press concerning claims Mr. Watkins was alleged to have made, but took no heed of them, believing that all disputes concerning priority are profitless and vexatious, and I would not have written this letter were it not to correct errors, manifest or implied, in that of Mr. Watkins. Mr. Watkins writes: "The fact is that it is a modification, and a very happy one, of a system originated by me. I devised the plan to name the pinhole aperture as if it were sixty times the real area, so that a calculation made in seconds will be correct if given in minutes, and Dr. Power adopted this plan."

These words seem to imply that I got the basis of my system from the writing of Mr. Watkins. The fact is, when I published my formula I had never heard of Mr. Watkins in connection with pinhole work, nor have I ever read a line that he has written on the subject. Furthermore, I do not consider that the relation of seconds to minutes is the important part of my formula. When I took up the problem of finding a quick and simple method of determining a pinhole exposure I found nothing in the field but complicated tables or formulae that called for the use of paper and pencil. Pinhole photography to be useful must allow of long or short extension of bellows (according to desired size of object or angle of view), and the use of several sizes of holes (which determine the quality of definition). No formula which does not allow for these is satisfactory.

When I standardised and named the holes by numbers, that, these multiplied by the camera extension in inches, gave the *f*/ value as a quotient, I produced a formula that a tyro could use under any circumstances. That the quotient requires multiplying by sixty is a minor detail, on which I laid no stress. It is for this simple method of obtaining the exposure under all conditions of extension and pinhole size for which I believe myself entitled to credit. That is my claim, and I have not seen as yet anything to invalidate it. I stated that Mr. Watkins' letter contained an error of fact. I refer to his statement that my No. 4 pinhole is 1/38 of an inch in diameter. It is about 1/75 of an inch, being 0.38 of a millimetre.

In conclusion, let me reiterate my lack of interest in all priority fights—they are of no value to science—and whether I or Mr. Watkins first solved this exposure problem is immaterial so long as it is solved; but this much is certain, if we both solved it, we did so independently. The historian will take care of us both—in the usual manner.—Yours,

H. D'ARCY POWER.

San Francisco, California.

January 14, 1908.

## PHOTOGRAPHIC MATTERS IN CAIRO AND TURKEY.

To the Editors.

Gentlemen,—In "The British Journal of Photography" the week before last there appeared items of news about trade in Cairo and the "B.J." in Asia Minor. Both were particularly brief, and it may therefore be of interest if I enlarge upon these.

First of all, let me deal with Cairo. A "B.J." correspondent wanted to know how the photographic trade stood in that Egyptian town, and whether it would not be well to commence business out there. As a one-time inhabitant of the place, let me say at once that there is no room for any more photographic dealers there. What few there are do, I have every reason to believe, a passably good trade, but a new beginner, and a Britisher in the bargain, would meet with many rebuffs, which I need not take up space to refer to here.

That there is an enormous amount of photography done nowadays in that picturesque land I will not deny, but it must be remembered that the majority is done by tourists who, as a rule, arrive, fully equipped with cameras and spools of film. Plates are not used to the extent one would think, and some boxes I saw in a window there looked, judging from the jaundiced label, as if they had been there in the days of Pharaoh. It is, however, film spools that have the largest sale among visitors, and, although these keep fairly well, one cannot be surprised at some going wrong now and then in such a climate. I thought of commencing a dealer's business out there, but after making many inquiries decided not to do so, as I preferred to lose my money—if it was to be lost—here in England.

If anyone really wants to start business in the Near East that way I should recommend Jerusalem. In this city there is not—or was not, a short time ago—a really up-to-date dealer. Plates, etc., were sold by a professional, who did not forget to charge. I was asked 7s. 6d. for a box of half-plates, and paid it. Jerusalem is so full of subjects for the camera that, however well a visitor arrives supplied with plates or films, he is almost sure to run short, and as the visitors, as a rule, have money to spend they do not mind paying a good price for what they want rather than leave the country without exposures.

The second item in the issue of the "B.J." referred to was to the effect that an advertiser secured business from that part of the world. I can assure advertisers that they would get plenty business from announcements in the "B.J." if the Customs authorities were more sane and gentlemanly in manners. During my residence in the East I frequently heard the "B.J." referred to, and myself saw it in many places, amongst them being Constantinople, Jerusalem, Athens, Beyrout, and Nazareth. An English-speaking Arab photographer at the latter place has quite a photographic library, and is as up-to-date as the laws of his country permit him to be. Probably he is now awaiting the result of the R.P.S. election. In Constantinople I know of two photographers who make their own plates and prepare their own paper, but those of the better class, I am glad to say, are—in spite of the Sultan and his dislike for photography—using British plates and papers.

The mention of papers reminds me of an incident. I saw in the

window of a photographic dealer at Beyrout a show-card, advertising a certain British printing-out paper; the card had a specimen print upon it. As it hung in the full glare of an Eastern sun I suggested to the man in charge that it would be better for his business if he hung the print in the shade. "Have no fear," said he, "that show-card has been hanging there for two years." The print was as bright and as good as when it left the factory, an excellent testimony to the quality of British goods.

I don't suppose the Editor of the "B.J." has any instances of "Journal" being seized by the Turkish postal authorities. If he has not, he can take it from me that scientific and technical papers are often stopped. If there is something in them the Turkish officers whose work it is to look them over, does not understand, the matter is blacked out, or, more often than not, the paper confiscated and destroyed. There is an old story of a certain scientific book being stopped there because it contained the chemical symbol for water (H<sub>2</sub>O), which the wideawake Turkish censor interpreted as follows:—"Hamid the Second is O—a cypher—a nobody." Such being the case, one dreads to think what effect an article, say, by Dr. Mees would have upon him.

MINARDI EFFENDI.

## GLAZING P.O.P.

To the Editors.

Gentlemen,—Simplicity, speed, and accuracy is the desideratum of all who have much glazing of prints to do, and I would recommend to workers the following treatment, which I have never found to fail.

Prepare your glasses (I use old 12 x 10 plates) by freely cleaning with petrol and lightly polishing with a soft rag. After prints have been immersed in alum bath, wash for a few minutes, then lay off glasses, pass over blotting paper a roller squeegee, and the whole process is complete. Points:—

Never dry quickly.

Dry in warm room.

When using glasses for the first time use plenty of petrol.

If glazed at night the prints are fit to strip next morning, without delay.

French chalk is objectionable in several ways, and cannot be compared with petrol for speed and efficiency.

I glaze thousands, and rarely have a failure. Glass should always be placed on end, not flat.—Yours,

A. G.

35, Southgate Street, Winchester, February 8, 1908.

## A SIMPLIFIED SYSTEM OF DEVELOPING AUTOCHROMES.

To the Editors.

Gentlemen,—I have for some time past been using the Lumière Autochrome plates and making experiments with a view to simplifying the process of developing them, being by nature somewhat lazy. Perhaps some of the conclusions I have arrived at may be of interest to your readers, and I am therefore sending you for inspection three Autochromes—not perhaps the best I could select, but sufficiently good to show that the treatment I am about to describe is not entirely a failure. The best of the three was only treated with two solutions, and was finished and dried in ten minutes. I consider that it is better than it would have been had I followed the instructions for the use of the plates. Now to secure a good Autochrome it is necessary first to abstract from the film the salts acted upon by the light, and afterwards to render as opaque as possible the remaining salts. The developer recommended by Messrs Lumière is a frightful nuisance owing to its rapid oxidation, its staining qualities, the odour of the ammonia, and the use of alcohol, which tends to frilling. I therefore use Rodinal, rather strong (about 1 in 10) in order to lessen the time of immersion. The strength of the Rodinal, the amount of bromide (if any), and the time of immersion, may easily be found. Personally, I look at the plate by weak red light after it has become thoroughly wetted, and thus lost some of its sensitiveness, and develop until any white part of the object photographed shows quite black. The C solution is then applied, and reversal takes place, after which I again develop in the Rodinal developer, and the Autochrome only then requires two minutes rinsing and drying rapidly. The Rodinal should for the second



ment be used very strong indeed, for preference, as it then gives a blacker image. There is not the slightest need for intensification, which only increases the brilliancy of the colours at the expense of the transparency, and generally makes a mess of the prints in the majority of cases. The enclosed plate, representing a match box, etc., was treated exactly as I have described. One representing two glasses with the light coming directly through them was afterwards intensified very slightly, and the other developed in the pyro-ammonia, re-developed with Rodinal, and afterwards intensified considerably. The total cost of the chemicals necessary to work Autochromes in the way I have indicated is very indeed. Only two bottles are necessary. There is no staining of fingers, no nasty smell, the fixing, clearing, oxidising, etc., are rendered unnecessary, the time is reduced, and personally I obtain better results. Rodinal is a grand developer, when no fixing is used. It gives an image intensely black when used very concentrated, keeps well, is ready at a moment's notice, and I advise Autochrome workers to give it a trial, at all events for the re-development.—Yours, etc.,

WILLIAM E. CLIFTON.

Peter's Chambers, Nottingham, February 5, 1908.

Regarding the specimens sent by our correspondent, that of the box and the three glasses are a good deal beyond what one can aim at as the correct density. If this density is usually obtained by the method there is no need for intensification, but we can see whether there is the same control in adjusting the density by our correspondent's method which one has when using the acid-silver intensification.—Eds. "B.J."]

WILLIAM TYLAR, LTD.

To the Editors.

Gentlemen,—You will notice I have formed my business into a limited company. I would like through you to tell your readers that as managing director of the same, I shall extend still to their business that personal supervision that has had such good results in the past. Also that the professional section will have placed before them many novelties designed for their especial benefit. One of my objects—in fact, the main object—is to get even better results from my employees, many of whom will have a personal interest in the well-being of the company.—Yours truly,

W. TYLAR.

SEPIA PLATINUM PAPERS.

To the Editors.

Gentlemen,—I ask your usual courtesy in presenting to the photographic fraternity the danger lurking in some of the papers sold, by name at least, as sepia platinum papers, mostly of the cold development type.

I have in my possession several prints on the same, and have dozens of others that are in various stages of fading after a short period, much shorter than some of the bad cases of fading of silver prints. Now these are not platinum papers, at least they contain an appreciable amount of that metal, for a pure platinum print does not fade under hardly any circumstances; it may turn yellow or brown, sometimes from insufficient fixing.

Those who sell such prints to their patrons as permanent platinum prints commit an unconscious fraud and injure their own business, as much as that of the profession.

The absolute permanence of platinum prints, as well as their artistic quality, has done more to advance the profession in late years than any one cause, enabling photographers to obtain high prices for their supposedly permanent prints. I have only found this with cold development sepia papers. The only sepia paper sold for platinum development stood the tests I gave was the Willis and Clement's paper, made by the Platinotype Company.

The test for a platinum paper is very simple. A solution of cyanide of potassium of 5 to 10 per cent. will quickly bleach out the old development sepia papers that are not largely composed of platinum, but will have no effect on real platinum papers. The photographic dealers of most influence in this country are so much under the influence of trusts that they will not publish such facts as these.—Very truly,

D. BACHRACH.

London, February 1, 1908.

## Answers to Correspondents.

- \* All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.
- \* Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.
- \* Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., 24, Wellington Street, Strand, London, W.C.
- \* For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.

### PHOTOGRAPHS REGISTERED:—

J. Caddick, 166, Penn Road, Wolverhampton. Two Photographs of "Lord George Sanger outside the Circus Ring at the Olympic Fun City, Kensington."  
W. Findlay, 110, Leadside Road, Aberdeen. Photograph entitled, "A Silvery Path to the Silver City."

LENS QUERY.—Would you please state a fair price for a half-plate applanan lens (f/8)? This lens is fitted with iris diaphragm. There is also offered me a half-plate. They are both in good condition. FILLINGHAM.

It is impossible for us to express an opinion on the merits of lenses we have not seen or tested, particularly as we have never heard either of the names mentioned as makers of lenses. The best way for you to estimate their worth to you is to test them by taking a negative with each and see how they answer your requirements. The actual market value of the instruments is probably not more than a few shillings each.

RECOVERY OF DEBT.—I should be much obliged if you could inform me: (1) If I can claim the price of photographs taken but not delivered. A gentleman called on me and asked if I could take a wedding group of his son and party and asked the price. I showed him some specimens, and he said that he would have 1-1 plates at 15s. per dozen, or for less than a dozen 1s. 6d. each. Now, I have made a dozen, but I cannot get them to call for them. Can I claim the money? (2) Am I charging too much?—T. C. F. (North Wales).

(1) You should send the photographs to the customer's house together with the account. If it is not paid you must sue in the county court, when you will recover, providing the pictures you have taken are equal to the specimens you submitted to the customer in obtaining the order. It is possible that they are not satisfactory, and that is why they are not called for. (2) No. If your work is really good the charge is too little.

SITUATION IN FRANCE.—(1) Is it possible for a young Englishman (with slight knowledge of French) to secure a position in France or Belgium as operator, retoucher, miniature painter, etc.? (2) If so, through what medium would he be best able to obtain that situation? Also (3) what would be the average wage at a good class studio for assistant operator, retoucher, and finisher?—ASTICOT.

(1) English assistants are to be found in Continental studios. (2) "Photo-Revue," 112, Rue d'Assas, Paris. (3) It varies as much as it does here.

F. H.—So far as we know no gravity number is taken as a test of bisulphite lye. Obviously it would be of little value, since any sulphate present instead of sulphite would be reckoned as the latter. Perhaps the Lumière Co., Great Russell Street, W.C., who issue the solution, may be able to help you.

BICROMATE SENSITIZING.—Will you be kind enough to inform me if it is possible to treat an ordinary dry plate so that the silver may be removed from it in order that it can be sensitized in a

bichromate of potash solution, and used for the simplified collotype process such as the Sinop and others?—A. R.

The silver can be removed in hypo solution, the latter washed out and the plate then used for the purpose described.

JOHN MCGARITY (New York).—Joly-MacDonough screens are not now obtainable commercially. As regards the other process, you can get into communication by addressing c/o of the American Express Co., Waterloo Place, London, W.

A. M. NICOLSON.—You had better obtain a handbook on photo-micrography, such as that by F. Martin-Duncan, published by the "Amateur Photographer," 52, Long Acre, W.C.

H. W. C.—The gentleman is a Fellow of the Royal Photographic Society, and therefore a letter addressed to him at the Society's house, 66, Russell Square, W.C., will probably reach him.

VELETA.—The letters denote Hefner (lamp)-metre-seconds—i.e., the HMS is the exposure of one Hefner lamp for one second at one metre distant.

P. B. L.—Camera and lens are excellent for the purpose. The double extension is a great advantage for your flower photography, otherwise we should suggest the Sybil camera of Newman and Guardia as even more portable.

SNAPSHOT CAMERA.—Will you kindly inform me if it is possible to buy the "snapshot camera for the use of artists" described by Mr. Nelson K. Cherrill in your issue for June 28, 1907? If so, where can I obtain the instrument?—D. THEODORE TIMINS, Bordighera, Italy.

There is nothing of the kind on the market. The nearest approach is the Hales camera of the Hales Camera Co, Ridgewood, N.J., U.S.A.

LIVERPOOL.—(1) The blocking-out of the machinery is done with a fine brush charged with Indian ink, or with a draughtsman's steel pen. (2) Messrs. Dawbarn and Ward, 6, Farringdon Avenue, could possibly supply you.

E. HIGGS.—We are unable to suggest any cause beyond that mentioned in our first reply. We have tried the samples of paper you sent us with perfect success, and without any trace of spots. Faulty manipulation is no doubt the reason of your failure.

VARIOUS.—(1) Can you enlighten me as to the best filter to use to get a violet plate for colour printing—from a water-colour drawing or sketch? (2) Can you inform me of an invisible writing fluid that will show visible when exposed to light for two or three minutes?—DASH.

(1) If you mean a filter for the blue printer (red-sensation negative), a suitable dye is Biebrich scarlet, used with a Lumière C plate, or you can use a mixture of Fast red (2 parts) and tartrazin (1 part). (2) We should think the sepia sensitiser, as given in the "Almanac," page 833, would answer the purpose. It is slightly coloured, but if applied to a cream paper would be invisible. It will not, of course, fade after once being exposed.

P. W.—For the limited sum you propose to spend we do not see that you can do anything different from what is shown in the sketch. But you must bear in mind that your sitters will be illumined by a direct front light, which the small amount of side light will not materially influence. It would be preferable to have what glass there is at the north side. The corrugated roof would not give uneven lighting. The best way of utilising the erection will be to place the background diagonally at the south side, and have a curtain coming nearly to the ground from the roof at that side, which can be drawn so as to subdue some of the direct front light.

J. D. W.-P.—We presume the Hudson referred to is the late Mr. Hudson, of Ventnor. The business, we believe, is still being carried on under the title of Hudson and Son. Frith, photographic publisher, Reigate, is also dead.

ENQUIRER.—We would refer you to the reflex or B pattern of Newman and Guardia, Shaftesbury Avenue, W.

BOXING DAY.—1. We think your employer can insist that the notice is given on the day your wages are paid. 2. Certainly you can-

not. You must agree with your employer as to this. If you left without proper notice you cannot claim wages.

W. G. (Worthing).—Most certainly he cannot. There is no cleavage point among the legal matters of photography.

F. H. W. and others.—In our next.

C. HAWKINS.—They are very good, and the profile portrait may certainly be by daylight.

CHROMO.—Turpentine is usually used for thinning the balsam. We fear it will not be easy to cement a loose gelatine film. It is more usual to coat glass with a coloured gelatine solution and to cement a cover glass. This is done by pouring the balsam on the filter (warmed on an iron plate), gently superimposing the cover glass and allowing the latter by its own weight to press out the balsam.

NERNST PROJECTOR LAMP.—Messrs. Houghtons Limited have been appointed sole wholesale agents for the A. E. G. Nernst lamp, already reviewed in our columns. Messrs. Houghtons have the lamp got at 88-89, High Holborn, and they supply spare filaments and resistances at prices stated on a circular which is obtainable from them.

LONGRIDGE CAMERA CLUB.—Photographic interest has recently been awakened at Longridge, near Preston, with the result that a camera club has been formed for that district, of which we shall hope to give fuller particulars shortly. The first president and secretary are the Rev. R. W. Berry and Mr. J. Robinson respectively.

EDITORIAL CHANGE.—Dr. R. Neuhauss being about to start the Antipodes, Dr. Hans Knapp has consented to assume editorial superintendence of "Photographische Rundschau."

THE ENGLISH PLAY SOCIETY, of which Mr. Lyddell Sawyer, the well-known photographer, is chairman and hon. manager, have published a book of rules, in which the aims and objects of the society, together with the terms of membership and the advantages accruing therefrom, are fully set forth. A copy of the book may be obtained on application to Mr. Sawyer, at 153, Maida Vale, London, W.

THE DEATH took place at Blair Athol last week, of Mr. P. Cameron, for the last thirty-five years photographer at Pitlochry.

"VELOX" COMPETITIONS.—The awards in the December competition are as follows:—First prize (£2 2s.), J. P. Ettridge, Goldhawk Road, W. Second prize (£1 1s.), J. Smith, North Shields. Consolation prizes of 5s., W. Howard, Ilford; Mrs. Pearson, Keswick; R. Thurn, Helensburgh; Edgar Law, Croydon, Cambs; H. Barrie, Glasgow; Richard Miles, Hammersmith, W.; Alex. L. Bell, Hawick; Mrs. Percy Unsworth, Grange-over-Sands; H. A. Vokes, Scholings, Southampton; John S. Slack, Dewsbury; Edward D. S. Morton, Stirling; Miss V. Coates, Cheltenham. This competition completes the present series.

STREATHAM PHOTOGRAPHIC SOCIETY.—The second annual exhibition will be held on February 27, 28, and 29. Admission is free catalogue, to be obtained of F. E. Huson, 56, Salford Road, Streatham Hill, on receipt of stamp to defray postage.

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## SUMMARY.

**Sulphide Toning.**—Mr. Welborne Piper contributes a valuable article describing the new facilities provided by the sulphide constituents, thioisannate and thiomolybdate. (P. 135.)

**Sulphide Toning.**—Mr. H. T. Munkman finds that the important results in controlling the shade of sepia-toned prints are exposure and development. (P. 139.) We point out that in his experiments bleaching agents, such as acid-bichromate, which contribute to the faded image, are not included. Such bleachers appreciably affect the final colour. (P. 133.)

**Sulphide Toning.**—Methods of reducing sulphide-toned prints is the subject of a paper read before the South Suburban last week by Mr. H. E. Smith. (P. 137.)

Mr. R. E. Blake Smith contributes a paper on the theory of tint-out paper, which raises a number of new points and contains new practical information on the production of red tones. (P. 140.)

**Profitable Carbon Printing.**—We conclude the series of articles dealing with carbon miniatures on ivory, carbon prints on wood, and one or two other applications of the process. (P. 135.)

**Practical hints on photographing dogs** have been recently published by Mr. Thomas Fall, whose firm of Baker Street has long been noted for this branch of work. (P. 143.)

**The Scottish Salon.**—Some notes on the professional work appear on p. 144.

An editorial draws attention to the literature which should form the reading of a student of stereoscopy. (P. 134.)

A curious outcome of the present enthusiasm for co-operation among photographic societies is mentioned in the opposite column.

An interesting case of markings on negatives appears on p. 151.

Some further letters on professionalism in photography appear on p. 150.

An automatic shutter release is among the patents of the week. (P. 145.)

The Rev. H. W. Dick's method of systematising ozobromes is noted on p. 146 from this week's "Amateur Photographer."

Sir Henry Treman Wood asks for scientific exhibits for the photographic section of the Franco-British Exhibition. (P. 149.)

The case of a photographer who was heavily mulcted in damages for opening an assistant's letter is reported in "Commercial and Legal Intelligence." (P. 149.)

## EX CATHEDRA.

### Federation and Affiliation.

The combination and co-operation of photographic societies is being much talked about just now, but some of the opinions that are being expressed seem to show very strange ideas as to the advantages of federating or combining. Some time ago we pointed out in an "Ex Cathedra" note that a society that filled its programme with affiliation or federation lectures could not be considered to be in a very healthy condition. Neither did it show an appreciation of the proper use of co-operation. We now see that one unfortunate society that fills its programme with home-made lectures is being severely dropped on for being "parochial." Because out of fourteen subjects announced no less than eight are by local lecturers and only one by an outsider, this society is urgently recommended to join a "union" and make use of "union lectures" and "union lecturers." Apparently this society is prosperous, and its "parochial" lectures seem to be good ones. So far as we can see, it has no need whatever of bringing in outside lecturers, and, judging from the argument used, it seems to have very much less need for the Union than the Union has for its "parochial" lectures, which appear to be looked upon with a certain amount of envy. For our own part we have great respect for a society that can stand alone, fill its own programme, and be prosperous without the aid of "co-operation." If it cares to federate for the purpose of helping on the weaker societies, well and good; but it is absurd to blame it for being self-supporting. A very absurd development of the mania for federating is a proposal for the formation of a "British Photographic Association" that is apparently to include all existing societies. Setting aside the obvious impossibility of bringing all the existing societies into line on this proposal, it is pretty clear that the result would be a failure. We cannot imagine any possible benefit from such an organisation, and it is certain that new independent societies would immediately be formed to accommodate those who dissented from the Association.

\* \* \*

### Control in Sulphide Toning.

An article on another page by Mr. H. T. Munkman describes some interesting experiments on the conditions governing the tone obtained by sulphide toning. The conclusion arrived at is that the exposure and development of the bromide print are practically the only factors of consequence. Many other workers have, however, claimed that modifications can be produced by varying other conditions. As regards the bleachers, all those mentioned by Mr. Munkman may be described as simple bleachers; that is to say, they convert the silver into a silver salt without depositing any appreciable quantity of foreign compounds in the film. Others, such as bichromate with

a very little hydrochloric acid, or ozobrome solution, leave a fairly substantial deposit in the film, and our experience is that this deposit may appreciably affect the final colour. It is on account of this deposit that the colour obtained by using soda sulphide after bichromate and hydrochloric acid is generally less pleasing than that produced when ferriyanide and bromide forms the bleaching solution. Mr. Munkman refers to the use of pure sulphide. As a rule the sulphide used is very impure, and the tone it gives may be quite different from that produced with the pure compound, and still not be displeasing. We have obtained very good tones with a solution of commercial sulphide that has been boiled and filtered, and these tones are generally of a purer brown tint than the purplish tones produced by nearly pure sulphide. Probably the two conditions that we have mentioned have a good deal to do with the variable colours produced by different workers, but possibly also the brand of paper used affects the question to some extent. We have often experienced a difficulty in producing a strong tone on a very glossy paper, while some matt papers have shown a tendency to give an unpleasantly dark shade of colour.

\* \* \*

#### **Distortion in Lenses.**

In our last issue Dr. Zschokke criticised the recent article by Dr. Wandersleb on "Distortion in Symmetrical and Unsymmetrical Photographic Objectives." Dr. Zschokke takes special exception to Dr. Wandersleb's statement to the effect that symmetrical lenses are almost universally looked upon as necessarily free from distortion. Dr. Wandersleb, however, only stated that this idea was generally accepted "amongst photographers." This is undoubtedly the case, and the contrary is not proved by quoting the opinions of expert opticians, nor yet by making the impossible assumption that Dr. Wandersleb is ignorant of their opinions. We certainly consider Dr. Wandersleb's work on this subject to be of very great value, and anyone who makes a careful and unbiassed study of his full paper in the "Zeitschrift für Instrumentenkunde" and of the numerous diagrams that it contains, will, we believe, come to the same opinion. It is certainly of advantage to photographers to know that there are numerous symmetrical objectives that are not, strictly speaking, corrected for distortion at all. They are free from distortion when used for copying on a scale of full size just because, and only because, they are symmetrical. This condition is fulfilled automatically, and, as Dr. Wandersleb says, "without any assistance on the part of the constructor." The familiar R.R. lens is an example of such an objective, and in it no attempt whatever is made to "correct" distortion; if, however, a symmetrical objective is to be free from distortion when used in new symmetrical conditions then special correction methods must be applied. This is where the trouble actually comes in, for the optical condition that has to be fulfilled to correct distortion is opposed to that governing freedom from spherical aberration, and the attempt to correct for both aberrations at once leads to complications, especially with lenses of large aperture. Readers interested in this matter should study Chapter VI. of Lummers' "Optics," the translation by Dr. S. P. Thompson. Seeing that lenses are commonly used in unsymmetrical construction, many favour the attainment of an ideal freedom from distortion in practical working conditions, and this appears to be the view that Dr. Wandersleb wishes to convey.

\* \* \*

#### **The Photography of Noise.**

An apparatus for recording speech by photography has been constructed by Dr. Marage, of Paris, but the practical use of it is not yet apparent. Perhaps, however, it may be the forerunner of an instrument that is very much wanted

—that is, one for recording noise. Pretty well everything else can be recorded automatically by the aid of photographic instruments, but as yet there is no way of accurately recording noise at all, though a method of accomplishing this purpose would be of considerable value. At present there is only one very rough and unreliable method of measuring noise, and that is by placing reliance on the evidence of people whose nerves are fairly tense on account of it. Noise is bearable and harmless up to a certain limit, but beyond that limit it is unbearable and injurious, and there is no exact way of determining when the limit is reached. Economy makes it almost certain that photography must play a part, for a pencil of light and a piece of white paper form the cheapest writing instruments that can be used. The rest will be more or less a problem of mechanics, and as many photographers have shown aptitude in this direction, there is no reason why a photographer should not solve the problem. The main difficulty is, of course, that of rendering the instrument sensitive to trivial or pleasing sounds and only sensitive to discordant noises, but this should not be insurmountable.

#### **THE ENGLISH LITERATURE OF STEREOSCOPY.**

THE stereoscope being essentially an English invention, the English literature bearing upon the subject is of great interest, but owing to somewhat peculiar circumstances very few students probably know which are books of special importance. The modern books are nearly all foreign, and some of them have the fault of dealing with the subject on a purely mathematical basis, whereas as we have before pointed out, is misleading, and of little real value. The older books, with a few exceptions, are not this fault, and our experience has been that these are the books that are most suggestive of the true theory of stereoscopy.

These books may be divided into three classes. The first includes books upon the stereoscope and its theory; the second, books upon binocular vision, many of which have a most important bearing upon stereoscopy, though not devoted to the subject, and in many cases not even mentioning it. The third class is a somewhat remarkable one, to which it is difficult to find an exact parallel in other branches of science. It includes books treating upon stereoscopic vision, but written before the stereoscope was invented. Many of these books are quite disregarded by students, some because their titles convey no indication of the fact that they are valuable sources of information on the topic, and others because they were written long before the stereoscope was thought of, and are, therefore, probably thought to be useless. In the first class there are three very important books that no one should fail to study. These are by Brewster, Wheatstone, and Le Conte. The first, Brewster's "The Stereoscope," 1856, is the "classic" book on the subject, but it requires to be read with caution, as it contains many assumptions that will not bear investigation. Of equal importance are Wheatstone's papers, to be found in the "Philosophical Transactions" of 1838 and 1839, and in Wheatstone's "Scientific Papers," published in 1879. Le Conte's book is called "Sight," and was published in 1881. His ideas are original and most important to study; but we fear many neglect both Wheatstone and Le Conte, though both books are easily obtainable. These are the three most important English books dealing directly with the theory of stereoscopy, but Chadwick's "Stereoscopic Manual" and Brown's "Stereoscopic Phenomena of Light and Sight" should also be studied.

In the second class, a very old book of some importance is Harris's "Optics," 1775. This contains some notes and experiments on binocular vision that are very suggestive



Another is Coddington's book of 1830, forming Part II. of his "System of Optics," and entitled "On the Eye and Optical Instruments." Dr. Young's "Lectures" should also be consulted. There are also, of course, numerous modern books on the eye that deal with binocular vision, but perhaps the most important book on the subject is not in English but a French one, Professor Tscherning's "Physiological Optics." Another very important old book is Berkeley's Essay on Vision, the second edition of which was published in 1709.

In the third class there are two most remarkable books. The first is Dr. Smith's "Opticks," 1738, which includes Dr. Brewster's essay upon "Distinct and Indistinct Vision." No writer is so frequently quoted as Dr. Smith in reference to stereoscopy, though his book was published just one hundred years before the earliest of Wheatstone's papers. His experiments are classic, and should be studied first and foremost. The next is an even more remarkable book, Dr. Brewster's "Essay on Single Vision," which includes sundry experiments and observations on optical subjects. This was published in 1792 in one volume, and again in 1818 in a collection of "Papers." We have referred to this essay before as one that must not be neglected.

The books mentioned by no means exhaust the number of those to which reference may be made. Some of the most important facts with regard to the manner in which we see solid objects were elucidated as far back as 1613 by Aguilonius (or François d'Aguillon), and his theories are very well worth study at the present day, and we may even with advantage go back to the works of Galen and Euclid. We have not endeavoured to exhaust the subject, only to call attention to the more important English books upon it, some of which are very commonly neglected, and apparently almost unknown. We should also consider Brewster, Wheatstone, Le Conte, Dr. Young, and Dr. Wells as essential to students, while Dr. Smith, Harris, and Coddington should by no means be neglected. Few libraries possess all these books, but they can be bought secondhand at very low prices. Coddington is extremely rare and difficult to get, though low in price, but numerous copies of the others are to be obtained, and only last year we obtained the complete set for a total expenditure of £2 7s. 6d.

In connection with stereoscopy, the "B.J." should by no means be neglected. From the earliest days of the Journal this subject has received much attention in its pages, and a very notable and valuable contribution was made by Mr. R. H. Bow in 1864, consisting of a series of five articles on the stereoscope and stereoscopic vision.

A very important point to remember in connection with the literature of stereoscopy is the fact that even now the theory is by no means firmly established, and that there are many facts concerning it that as yet have no possible explanation. In any scientific subject it is never safe to trust entirely to one text-book or one authority, and in stereoscopy it is not safe to place absolute reliance on any. One very important error that is to be found in nearly all the books mentioned vitiates a great many of their arguments. This is the statement that "distance is seen as perfectly by children as by adults," as Brewster puts it. At the present day no doctor will admit this to be true, yet the effects that the blunder has had on the theory of stereoscopy still have a great influence. Its most important effect has been the creation of the idea that our appreciation of distance and solidity depends entirely on a kind of involuntary mechanical process. The fact that we have to learn to see just as we have to learn to walk and use our hands has been ignored, but it is the most important fact that has a very distinct bearing upon the problem of how we see distance and solidity in the stereoscope.

## PROFITABLE FORMS OF CARBON PRINTING.

### IV.

In the previous articles\* of this we have dealt with certain special applications of the carbon process which may prove remunerative to professional photographers. We must now conclude these chapters by giving the necessary instruction for the preparation of photographic prints on ivory, which can be worked up and coloured to any necessary extent. Ivory, we may explain, is a material which is not readily amenable to sensitising by a silver print-out process, and carbon is practically the only way of producing the base, on which the artists' work is done, or, if preferred, of giving a pigment picture alone. This and one or two other less known uses of carbon will now occupy us. Before describing the method, it is as well to say at once that the pictures must be made by the double transfer process, as if attempted by the single process the ivory would be stained by the bichromate in the tissue, and the stain could not be got rid of. The ivory used must be free from scratches, as it usually is when purchased from the dealers in artists' materials, but if it is not the scratches must be removed. This is done in the following way: The ivory is wetted with water, and a little very fine cuttlefish powder sprinkled over it. This is then ground over with a piece of cork, used as a muller, until the scratches are removed. After washing and wiping dry, the ivory is ready for use. The print is developed in the ordinary way on flexible support, alumed, and allowed to dry; it is then ready for transferring to the ivory, which is done as follows: A solution is made:—

Nelson No. 1 gelatine .....	1 ounce.
Water .....	1 pint.
Chrome alum in 1 oz. of hot water ...	12 grains.

This solution, kept at a temperature of about 140 deg. to 150 deg. Fahr., is put into a deep dish, and the picture on the support—which should be trimmed a little smaller than the ivory—is then introduced together with the ivory. After soaking for a minute or so, the two are brought into contact, removed, then squeezed together, and allowed to dry. When dry the flexible support is stripped off, and the surface of the picture rubbed over with a plectrum of cotton wool charged with benzole to remove all traces of the waxing compound which, if left, would prevent the artist's colour taking freely. In making photographs on ivory for miniature painting it is desirable to employ a negative somewhat thin and delicate in character. The tissue should contain a liberal proportion of colour, so as to get an image in as little relief as possible, since a high relief gives trouble to the artist in the finishing, and may possibly show in the finished picture. If the picture is to be highly worked up it is well to consult the artist who is to do the work, as to whether a light or an ordinary depth picture is preferred, and also as to the colour. We knew an artist some years ago who, when he had a silver photograph to finish as a miniature, would not have the print toned beyond a warm red-brown. He said that saved him a deal of trouble in the colouring when the picture was to have the higher finish.

Photographs on wood panels, for decorative purposes, might be made a profitable side line with some, and are not at all troublesome to produce. The wood should be of a light colour, or white. The surface may be made perfectly smooth with glass paper, working the latter always in the direction of the grain and finishing off with paper of the finest grade. The panel is then coated with the solution given above, which is applied fairly hot with a camel-hair brush. Two coatings will be necessary—the

\* "B.J." January 17 and 24, and February 7.

first to fill up the pores of the wood, the second to give an adhesive surface. With very porous wood three coatings may be required. The print is made on flexible support in the ordinary way and allowed to dry. To transfer it to the panel the coating on it is sponged over two or three times with tepid water to soften the gelatine slightly. The print on its support having been trimmed to size and shape, is put for a minute or so in the above solution, which should be made tolerably hot—170 deg. to 180 deg. Fahr. It is then laid in position on the panel and well squeegeed to it. When dry the temporary support is removed. The picture should then be varnished, or, better still, French polished, but before the polishing is commenced it will be well to give the panel a thin coat of a white varnish—such as a lac negative varnish. This will protect the picture from injury in the first stage of the polishing. It is needless to say that white French polish must be used for the work. Should the panel become warped during the operation it can be straightened when the picture is finished. If the reverse side is curved inward the back should be evenly sponged over with water and the panel put under pressure for a few hours. If it is outward the back is placed, at some distance, in front of the fire until it straightens out, then put under pressure for a day or so. But if the wood is well seasoned, as it should be, warping is not likely to occur.

Some little while back the method of enamelling silver prints with collodion was fully described in these columns. It is, however, far more troublesome to enamel silver prints than to produce enamelled carbon ones. Indeed, carbon is the easiest of all methods by which to produce enamelled photographs, while there is no question as to the stability of the pictures. A glass plate, after being waxed or rubbed over with French chalk, is coated with thick enamelling collodion. When this has well set the plate is put into cold water until all traces of the ether

and alcohol are washed away. The exposed tissue is then mounted as if it were ordinary flexible support, a piece of thin mackintosh cloth being laid over the plate to prevent the squeegee from tearing the collodion film at the margins. The image is then developed as usual and allowed to dry. When dry, the plate is put into water, a piece of softened double transfer paper is squeegeed upon it, and when dry, stripped off. We thus obtain a highly enamelled print without further trouble. If a second piece of transfer paper is squeegeed on, after the first has become surface dry, the picture is practically on thin cardboard.

Many photographers have a window with an unsightly outlook, or, possibly, a corridor that sitters have to pass through to the studio. This unpleasant outlook may be hidden by hanging in the windows carbon transparencies, portraits or landscapes—backed with ground glass, and framed in the light metal frames sold for transparencies. In this way an ugly outlook is converted into a pleasing and attractive one. As some customers may have window similarly circumstanced they may be induced to order transparencies to fill them. This would "bring grist to the mill" of the photographer.

Lastly, many may not be aware that the carbon process is utilised for the labels on druggists' bottles. The lettering is photographed to size so that when printed the letters show as white on a black ground. The negatives are made very strong. They are then printed in a dense black tissue and the image developed (single transfer) on the inside surface of a curved glass, of the same curvature as that of the bottle. The letters are then gilded, which need be only roughly done, and a gilded border put round. The curved glass is then cemented to the bottle, in a recess moulded for its reception. When the labels are produced in this way they are not injured by washing, scratched in the dusting, as the lettering or design is between the bottle and the glass.

## SOME EXPERIENCES WITH NEW METHODS OF SULPHIDE TONING.

HAVING had the opportunity of personally testing the effects of the two latest sulphide toners my experiences may be of some interest to readers of the "B.J." One of these new preparations is the sepia toner of Messrs. Burroughs and Wellcome, which is understood to be a thiostannate compound, while the other is the thiomolybdate sepia toner, worked out by Mr. H. E. Smith, and introduced to photographers by Messrs. Edmund and Co. Apparently the bleaching solutions sent out with the two toners are the same in all essential respects. Both seem to consist of the well-known mixture of potassium bromide and ferricyanide commonly used with sodium sulphide as the toner. The toning solutions are, however, essentially different, not only in composition but in effect. They give quite different colours and the thiomolybdate toner is capable of producing quite a long range of browns, all of which are distinctly different from the brown given by the thiostannate.

### Thiostannate Sulphide Substitute.

I tested the solutions in parallel conditions, comparing the results with each other and with the tones obtained by soda sulphide. Stating the results generally, I found that the thiostannate gave a tone closely resembling that produced by commercial soda sulphide when working at its best. That is to say, it is a soft brown very nearly approaching to sepia. As regards the advantages of the thiostannate over sodium sulphide they are fairly obvious. The smell of sulphuretted hydrogen is not nearly so strong, and a good colour is obtained with far greater certainty. Though much the same shade of brown is

produced as with the commercial soda sulphide the quality may be described as better. It is less inclined to be yellow, and is rather purer and stronger brown. It is a good brown, whereas the other is generally a bad one, and a remarkably fine rich effect is produced when the result is glazed.

### The Thiomolybdate Toner.

The results with thiomolybdate are quite different from those with thiostannate. The brown is of an altogether different kind, and the varieties obtainable may all be described as varieties of what photographers know as "photo-brown." Used in a certain way, the toner gives a capital imitation of the purplish tone of the best commercial hypo-alum toned prints.

The colour varies markedly with the time of toning, and the standard time of 5 minutes recommended by Mr. Smith results in a colour that when glazed can easily be mistaken for that of a brown gold toned P.O.P. print. It is a much richer and redder brown than the ordinary sulphide tone, and the image appears to be intensified to a certain extent. If only treated for 2½ minutes a slightly colder tone is obtained, while if the toning is prolonged for 20 minutes a browner—that is, less red—tone is obtained. The application of a strong hyposulphite bath has a similar but somewhat more marked effect, and this tone may be described as a brown midway between the thiostannate brown and the normal thiomolybdate colour.

### Reducers and "Sulphide" Tones.

All the tones obtained by sulphiding processes are amenable to reduction, and a strong Farmer's reducer, such as that used for



graph, has a very marked effect on the ordinary sulphide brown, or on the thiostannate brown, the effect of reduction is production of a very unpleasant yellow brown. The thiomolybdate "photo brown" is, however, changed to a simple brown of a good tone if the reduction is not carried too far. As to the effect of intensification before noted, the thiomolybdate prints will stand more reduction than the others, but the process must always be somewhat risky.

#### Thiomolybdate and Modified Bleachers.

The most striking changes of colour are, however, produced by intensifying the bleaching solution. It is well known that the ordinary sulphiding process can be modified by similar variations, but, unfortunately, no bleacher seems to give quite such satisfactory tones as the ferricyanide and bromide bath. The trouble is to get strong tones with soda sulphide, and the common fault of other bleachers is the production of weak, powdery browns. The thiomolybdate brown is, however, usually a very strong one, therefore, the bleachers that fail with sulphide may prove of value with the new reagent, especially where its intensifying action is not required. A very useful soft brown of great depth and transparency is produced if potassium bichromate is added to the bleaching bath, if ozobromine solution is used in place of the ordinary bleacher.

For a portrait, or similar subject, in which fine modelling and gradation must be preserved this appears to be an ideal bleaching method, and I can strongly recommend it. The tone is exceptional, and the brown is one of a kind that I never expected to get by way of sulphide toning.

Another bleaching bath also gives very striking results. This is a solution of mercuric chloride, which is quite useless for the soda sulphide or thiostannate toners as the resulting tones are black. The thiomolybdate toner, however, gives a very rich purplish

red brown. In using this bleacher the mercury should be followed by a soaking in weak hydrochloric acid, and this again must be followed by very complete and thorough washing, otherwise the whites will be badly stained.

All these toners work as well on gaslight papers as on bromides, but, like all the sulphiding processes, they tend to produce clogged-up heavy shadows on matt surfaces. This can, of course, be remedied by glazing, or waxing. The tones vary somewhat on different types of paper, and it does not seem possible to obtain the same depth of tone on a very glossy paper as on one of ordinary surface.

#### A Field for Further Experiments.

Many variations of method are possible, and in one case I attempted to intensify a rather weak print toned with thiostannate by treating it with mercuric chloride and thiomolybdate. The result was a rather striking strong red colour. Evidently the thiomolybdate solution offers possibilities in the way of intensifying weak toned prints, but the best way of so employing it is a matter for experiment.

It is worth mentioning that the thiomolybdate toner gives off hardly any sulphuretted hydrogen, and even when it has been in use for a long time the odour can barely be detected. After toning, the whites are generally slightly stained, but this stain washes out in from 20 to 30 minutes under the tap. When bichromate is used in the bleacher the print must also receive a good washing between bleaching and toning. The fine colour obtained after this bleacher is no doubt partly due to the presence of chromium and iron compounds in the image, and the softness of the result is probably due in part to the fact that in the presence of these compounds toning does not go so far as usual. The difference in contrast between results produced by this method and by the standard method is very striking.

C. WELBORNE PIPER.

## A NOTE ON REDUCERS FOR SEPIA-TONED BROMIDES.

(A Paper read before the South Suburban Camera Club on Wednesday, February 12.)

HAVING been asked by our energetic secretary to put together a short résumé on the subject of reducers for bromide prints toned with sepia by the sulphide process, I felt at the outset troubled by the difficulty that, although I try to make my photographic reading as wide as time will permit, I have very likely missed something that has been published on the subject, and, having done so, I can only say that I have included everything that I have found any reference to. I think that Mr. E. J. Hall was the first to mention that sulphided sepia prints could be to some extent altered. He did so when giving results of his experience with sanzol (the cobaltamine reducer) in "The British Journal of Photography" of February 2, 1906. The "British Journal" for February 16, 1906, in referring to Mr. Hall's article, mentioned that silver mono-sulphide is somewhat readily chlorised, and in its issue for March 9, 1906, stated that black silver mono-sulphide, prepared by precipitation from silver nitrate, was chlorised by potassium bichromate and hydrochloric acid, readily iodised by a solution of iodine in potassium iodide, and very rapidly attacked by bromine water; so, that it was found to be slowly affected by a solution of potassium ferricyanide and potassium bromide, while Farmer's reducer, ammonium persulphate, and chromic acid, all dissolved away from the black sulphide.

#### Reducers of Silver Sulphide Images.

We therefore owe to the "B.J." the fact that the sulphided image can be readily converted into a halogen salt of silver, and had I not most unfortunately missed the note in the

"British Journal" for March 9, I do not suppose that I should have done much work on the subject. However, in the "Photographic Journal" for June, 1907, having at that time been experimenting in this direction, as I had accumulated a number of over-dense sepia prints, I recommended some reagents for reducing sulphide-toned sepia prints, and I placed them tentatively in the following order of merit:—

1. Cupric chloride, and sodium chloride in aqueous solution.
2. Cupric bromide in aqueous solution.
3. Cupric chloride in aqueous solution.
4. Chlorine water.
5. Bromine water.
6. Iodine in aqueous solution of potassium iodide.
7. Iodine in aqueous solution.
8. Iodine in alcohol.
9. Solution of potassium permanganate acidified with sulphuric acid.

#### Farmer's, Cyanide, and Other Reducers.

I did not mention Farmer's reducer or the mixture of potassium bichromate and hydrochloric acid, as I was not aware at that time that they were of use, and had not tried them. I should not have put chlorine and bromine water fourth and fifth on the list but for their pungent odour, or iodine further down the list had not the formation of the blue iodide of starch in the print been somewhat troublesome, as it renders it in some cases a little difficult to judge of the true extent of the action at any given moment. Other references to

reducing sulphided bromide prints that I have seen are the following:—Mr. J. D. Kettle, in the "Amateur Photographer" for July 23, 1907, recommended potassium ferricyanide and sodium chloride for bleaching the sulphided image for re-toning.

I mentioned in a letter to the "Photographic News" for August 2, 1907, that a print that was too dark a sepia tone on drying might often be corrected by again treating with the ferricyanide-bromide bleacher for, say, five minutes, and then placing a second time in the sulphiding bath (the bleaching solution should, of course, be washed out before re-sulphiding). The result is generally a rich and much warmer tone. A correspondent writing to "The Photographic News" of August 23, 1907, recommends as a satisfactory method of reduction, to place the print in a hypo-alum bath, and heat, as one would treat a black bromide print by this process. The colour is stated to be if anything improved.

The Editors of "The Photographic Monthly" for September, 1907, mentioned the fact that they had been in the habit of using potassium cyanide for reducing sulphided bromide prints; and in the same number I called attention to the fact that sepia bromides that had been toned to a red chalk colour with a gold sulphocyanide bath, could be reduced with the copper chloride and sodium chloride mixture.

Regarding the solubility of silver mono-sulphide in potassium cyanide, three references that anyone interested might care to turn up are: (1) Hahn, "Chemisches Centralblatt," 1870, 240 (this reference is at the beginning of the third series of nineteen volumes); (2) Béchamp, "Journal für Praktische Chemie," 60-64; and (3) "Journal de Pharmacie," third series xxiii.—413. Hahn gives particulars of the treatment of an ore containing silver sulphide with potassium cyanide, with the amounts of silver left in the residues after the bulk of the sulphide had been dissolved. Béchamp states that, while silver sulphide had been held to be insoluble in potassium cyanide, and is in fact difficultly soluble, if precipitated, for instance, from a concentrated solution; on the other hand, if the silver sulphide is precipitated from a very dilute solution potassium cyanide dissolves it completely, and the liquid is quite colourless. The relative proportion of potassium cyanide present also is of importance. It is, therefore, evidently owing to the finely divided state of the silver sulphide compound in sepia prints that potassium cyanide can be used to reduce them.

Of the reducing agents mentioned, I am inclined to think that the cupric chloride and sodium chloride mixture is one of the best, as this, while reducing with satisfactory rapidity, only very slightly affects the tone of the print, and, moreover, can be used with advantage on the "red chalk" gold-toned sepia prints. In my experience it will reduce these without spoiling the red tone, while a reducer that I have quite recently tried, and refer to below, though it is more energetic in action, is apt to spoil the tone of the "red chalk" prints.

#### Residual Copper in Sepia Prints.

With regard to the question of copper being left in the print after reduction with the copper chloride and sodium chloride mixture, and fixing and washing the print, I have analysed a 12 in. by 10 in. sepia bromide reduced in this way, and found a small amount of copper. A very small amount of copper seems liable to give stains in the print when it is subsequently treated with the sulphiding solution, and therefore in this case I recommended (in the "Photographic Journal") that the copper should be cleared with dilute nitric acid first. Where these reagents are used for reduction only, however, I believe that a nitric acid bath is quite unnecessary.

If we were dealing with the black silver image with the cupric chloride mixture, we should no doubt have cuprous chloride left after reduction, which, though insoluble in water, is soluble in hypo (Clemens Winckler, "Journal für Praktische

Chemie 88—428), so that, after fixing and washing, we should have no copper left in the print. I have analysed one 12 in. by 10 in. black bromide print so reduced, and was unable to detect the presence of copper. I should be glad to see this confirmed.

We are, however, dealing with the sulphided image, and appears that in this case copper is left in the print as a sulphide, and I have recently found a reference to the action of cupric chloride and sodium chloride on metallic sulphides viz., Raschig ("Journal of the Chemical Society Abstracts," 1884-96; "Bérichte," 17, 697-698; and "Liebig's Annalen," 228, 1-28), whence it seems that the silver sulphide with cupric chloride and sodium chloride yields silver chloride and copper sub-sulphide. I think that we may assume; then, that the copper in the reduced sepia print is in the form of cuprous sulphide, and, since the copper is present as a sulphide, and moreover, cuprous sulphide is the more stable of the two copper sulphides (Watt's "Dictionary of Chemistry," II., 261), it does not seem to matter whether it is left in the print or not, as it is unlikely to affect the permanence of the image.

Indeed, there seem to be few solvents of cuprous sulphide. Most reagents that attack it require the aid of heat. Indeed only nitric acid seems to attack it in the cold, dissolving only copper and leaving cupric sulphide, so that when we clear a print with nitric acid, it seems likely that we do not remove all the copper, which brings us back to the old question: Are the reactions on the very finely divided compounds in a print the normal ones? To a large extent they seem to be similar, but it would appear that only a series of quantitative analyses of the toned and reduced prints can clear the matter up satisfactorily, and the analyses that I have found time to make so far show me that it would be no light matter.

#### A Formula for Practical Work.

Referring again to the new reducer that I mentioned for these sepia prints, it is:—

Cupric bromide .....	3 gms.
Sodium bromide .....	25 gms.
Water .....	100 ccs.

I find that this bleaches a sulphided print almost as readily as the ferricyanide-bromide mixture does a black silver print. The formula I have given may well be diluted with three parts of water for use, as it is rapid in action when used for reducing only. I have made a qualitative analysis of a 12 in. by 10 in. sepia print reduced with the cupric bromide mixture, and when the copper was separated I judged it to be considerably less than the amount obtained from the print reduced with the copper chloride mixture: judging, that is, from the bulk of the precipitate and also from the bath of the coloration on adding ammonia in excess, after dissolving the precipitate in nitric acid. The print analysed in this case was of the same subject, and as nearly as possible of the same density, as the one that I analysed after reducing with the copper chloride mixture; so that the results might be comparable, but, of course, an enlargement from a negative of graded scales would be much better, the enlargement after toning being accurately divided, and the two halves treated respectively with the chloride and bromide mixtures. I have very recently made some bromide enlargements in this way, for quantitative analysis, but have no results ready at present. I am not quite sure that a very little copper may not be volatilised in the burning off of the print and ash before analysis, but this should apply equally to both prints.

Regarding this cupric bromide mixture, I have searched without success for a reference to a cupric sodium bromide, after the type of the double salts that cupric chloride forms with potassium chloride, for instance, so that unless I have missed the reference I presume that no definite compound salt of this type can be formed in this mixture. The deep reddish



purple colour that may be observed on evaporating and crystallising this mixture is perhaps owing to the formation of a hydrobromide, as described by Sabatier ("Comptes Rendus," 118, 980-983).

To conclude, then, I should recommend for general efficiency in reducing bromide prints this cupric bromide mixture, and for the "red chalk" gold-toned variety, the cupric chloride mixture.  
HARRY E. SMITH.

## ON CONTROLLING THE SHADE OF SEPIA PRODUCED BY SULPHIDE TONING.

The sepia produced by the sulphide method of toning bromide prints vary from a very warm to a cold and almost black shade. So far as I have been able to ascertain, no one has given any directions which would enable a worker to produce any given shade of sepia. It would appear that the difference in final colour must arise in the emulsion, the negative, the exposure, the developer, the development, the bleaching agent, or the sulphuretting agent, and it was with a view to ascertaining which of these determined the final colour, and to what extent, that the following experiments were made.

Bromide papers of several makes were exposed behind a graded negative. These papers were developed, fixed, washed, and bleached, various bleachers being used, and various developers. Each strip was then cut into two pieces, the one sulphuretted in a strong solution and the other in a weak solution of sodium sulphide. The weak and the strong sulphuretting agents produced identical shades of sepia in each pair of papers. It is evident that if sodium sulphide be used the strength of the solution has no effect on the ultimate colour.

### Various Sulphiding Baths.

Strips were similarly identically treated up to the sulphuretting stage and were then cut each into three portions. These were sulphuretted in a solution of sulphuretted hydrogen, a solution of ammonium sulphide, and a solution of sodium sulphide respectively. The colours of each set of three proved to be again identical. It would therefore appear that the sulphuretting reagent, provided it be pure, for an impure sodium sulphide may produce a reduced and unpleasant yellow-brown image, is not a factor in determining the shade of sepia.

### The Bleaching Bath.

Various makes of papers were exposed behind the graded negative, developed, fixed, and washed together. They were then cut into strips and thoroughly bleached respectively in the baths consisting of potassium ferricyanide and ammonium bromide, potassium ferricyanide and potassium bromide, potassium ferricyanide and sodium chloride, potassium ferricyanide and ammonium hydrate, potassium bichromate, sulphuric acid and sodium chloride, copper sulphate, sulphuric acid and potassium bromide, each made up according to various published formulæ. These bleached strips were washed (the ones from the copper bleacher with the aid of dilute acid) and sulphuretted, and, though a little difference in shade of sepia was to be observed, it was not sufficient to be of any practical import. Strips were also treated with the usual iodine bath, cleared, washed, and sulphuretted, but showed no useful difference in colour.

Similarly prints cut and the one half bleached in strong solutions and the other in dilute solutions showed identical shades of sepia on finally sulphuretting.

It is therefore evident that neither the strength nor the composition of the bleaching solution has any useful effect on the final colour of the toned print. With certain bleachers, notably the ferricyanide and ammonium hydrate one, which converts the metallic silver to silver ferrocyanide, some reduction is apt to take place; and, when this is the case, an unpleasant yellow-brown image is given.

It is a well-known fact that the less completely the silver image is bleached the darker is the sepia obtained, and this

was fully borne out by experiments. I cannot, however, think that such a method of determining the final colour can be advisable, since the image will consist of a mixture of metallic silver and silver sulphide in the shadow parts of a print, and wholly of sulphide in the lighter half-tones. If this method is adopted the bleaching solution must, of course, be dilute, so that its action may be readily stopped at any desired point.

### Is it the Negative or the Developer?

Some workers hold that the "tone" resides in the negative, and, though this is usually said of P.O.P. toning, I have heard it remarked in regard to the Blake-Smith process for bromides. Papers were cut and exposed behind different portions of the negative, and proportionate exposures given, so that when developed out together equal densities were obtained. On toning these, identical colours were secured. Papers were also cut, and one portion exposed for a short time to a strong light, the other halves for a correspondingly longer time in a weaker light—i.e., further away from the source of light. These were developed, fixed, washed, and toned together, and gave no difference. These experiments prove that neither the negative nor the speed of printing has any influence on the final colour; though, of course, this is not the same as saying they have no effect upon a print, since they would alter the steepness of gradation, and consequently the general appearance. The mere colour, however, would be the same whatever the negative, and whatever the speed of printing.

Papers were exposed, cut into strips, and developed out in amidol, quinol, metol-hydroquinone, rodinal, glycin, and other developers, each of standard strength. After the subsequent operations they exhibited no difference of colour. Exposed papers were cut, and one half developed quickly in a standard solution, the other developed out to the same density in a dilute solution. After toning the slips developed in the dilute developer showed a slightly but distinctly colder shade of sepia. On similarly testing the effect of cold and warmer developers it was found that the slips developed in the cold reagents gave slightly colder sepia than the others.

Similar strips were developed in amidol without any potassium bromide and in amidol containing bromide. The former gave colder sepia than the latter, and within limits, at any rate, the greater the proportion of potassium bromide the warmer the sepia finally produced. Since, however, the increase of potassium bromide results in the destroying of the lighter half-tones in a print from a negative suitable for the process, this would not afford any practical means of control.

### Differences due to Exposure and Development.

Papers were cut and exposed so that strips received successively increased exposures. The strips were then developed so as to produce prints as nearly alike as possible; and, on completion, it was found that the greater the exposure the warmer the final colour. It is, of course, well known that an over-exposed print only yields an unsatisfactory yellow "toned" image, but it would also appear to be a fact that the warmth of the image, when a satisfactory sepia is obtained, depends upon the degree of completion to which development is carried. Sheets from the same batch were exposed behind a landscape negative for 30, 32, 34, 36, 38, and 40 seconds. They were then developed as in ordinary practice, and gave fairly uniform and satis-

factory results when developed and fixed. These were bleached, washed, and toned together, and yielded colours which ranged from a beautiful cold sepia to a distinctly warmer sepia with no suspicion of yellow. Various papers were given minimum exposure through an architectural negative and developed out with exceedingly strong developers (some with equal parts rodinal and water). After toning they gave a shade which could only be called a warm black.

The chief means of control of the shade of sepia in the toned

print would appear to be the due regulation of exposure and development. The less the exposure and the more forced development the colder the sepia finally produced.

With such an exposure as will produce a properly developed print after two or three minutes in any developer of full standard strength, any good bromide paper upon the market will certainly give a rich dark sepia. Different makes of paper vary somewhat in the warmth of the sepia produced.

H. T. MUNKMAN, M.Sc.

## P.O.P. PRINTS—NOTES CONCERNING THE NATURE OF THE IMAGE.

If a print on P.O.P. is plainly fixed (or toned and fixed, for that matter) and then, after washing, bleached with a suitable bleaching solution and afterwards sulphuretted, the sulphuretted image will be found to be very faint—much fainter than the original one. Now, it might be said that the reason for this is that the silver forming the image of a P.O.P. print is of a molecular structure giving great covering power, and this structure is not passed on to the sulphide. There is, however, no reason whatever why silver sulphide should be imagined not to equal the silver from which it is formed nearly or quite in covering power. Certainly, there is no instance known in which there is much, if any, difference. The difference in strength of the image in the above quoted case is so great as to rule out a merely physical explanation altogether.

The image on a plainly fixed P.O.P. print consists of a "lake" composed of silver and silver chloride, and not merely of metallic silver. Like other similar silver chloride "lakes," this body possesses great covering power. I use the term "lake" here and elsewhere in this article to mean a molecular compound or solid solution. I am aware that many think the term should apply only to those molecular compounds produced by the combination of a dye with a metallic hydroxide. We can readily understand that the great loss in covering power is caused by the sulphuretting agent sulphuretting the whole of the silver halide and finally not leaving any over for the formation of a lake.

Of course, a theory assuming that the image consists of a mere mechanical mixture of silver and silver chloride would not explain the great covering power possessed by it. Moreover, such an image would be unstable in the "hypo" solution—all the silver chloride being dissolved out. We must, therefore, assume that some sort of molecular combination has taken place, or, as I express it, that a lake has been formed. In the "Amateur Photographer" for June 6, 1905, and in the four following numbers there were published some exceedingly interesting and important articles by Messrs. C. Welborne Piper and D. J. Carnegie, which all interested in this subject should read, if they have not already done so. Messrs. Piper and Carnegie showed how the gain in covering power by redevelopment was always accompanied by an increase in the halide constituents of the image. At the time I was rather sceptical about the theory they propounded that this increase in halide was the sole and only cause of the increase in covering power. I regarded the increase as mainly if not entirely due to molecular rearrangement of the metallic silver. What first made me alter my opinion was that I found that if a bromide print was bleached and redeveloped and then bleached again and sulphuretted the silver sulphide formed had exactly the same covering power as that formed by bleaching and sulphuretting the original image.

I also noticed that if a redeveloped bromide print was exposed to a solution of a soluble sulphide a slight action took place very readily and quickly. In the case of an ordinary primarily de-

veloped print, as is well known, no apparent action takes place for a very long time. The explanation here, of course is that the halide part of the image is converted into silver sulphide, though such images are stable in the presence of "hypo," they are not stable when exposed to sulphide solution. Messrs. Piper and Carnegie considered that the increase in "body" was due to the enlargement of the particles, which undoubtedly takes place as it naturally would. This is not sufficient, however, to account for the facts of the case and the formation of a lake must be assumed as stated above. Moreover, by bleaching an image we can increase the size of the particles and yet decrease the covering power. The presence of a halide of silver in a "silver" image can be directly detected by dissolving away the silver with a solution of ammonium persulphate or with a solution of nitric acid—the action of the latter being very slow. When all the silver has been removed, the remaining halide can be demonstrated by sulphuration or other suitable means. A better method, however, is to dissolve the whole gelatin film in 15 per cent. nitric acid and then heat the solution to boiling point, when all the metallic silver will pass into the solution, and an easily filterable precipitate of silver halide will be thrown down. By filtering off the precipitate, drying and weighing it, and then precipitating the silver as silver chloride from the filtrate, filtering, drying, and weighing that we can estimate the relative proportions of silver halide and metallic silver in the image. In the case of some of the images examined by Messrs. Piper and Carnegie, it was not easy to get direct proof of the presence of halides of silver, as these were present in such small quantity, but in the case of the image on a plainly fixed P.O.P. print there is no difficulty. I have found that the image on plainly fixed Barnet P.O.P. prints consists approximately of

Metallic silver .....	35 parts.
Silver chloride .....	65 parts.

The analysis was not very carefully done, and the composition of the image no doubt varies with the brand and condition of the paper to some extent. All I claim for my figures is that they show that the percentage of silver chloride is always very high in the case of all P.O. papers.

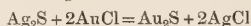
If a P.O.P. print be plainly fixed and washed, and then exposed to an atmosphere containing much sulphuretted hydrogen, or else to a weak solution of a soluble sulphide, the image changes colour, passing from brown through red and purple to a dirty bluish brown, and finally becoming very faint in density. At first the strength of the image seems rather to increase up till the reddish-purple stage is reached. The silver chloride, forming with metallic silver the lake of which the image is composed, is slowly converted into silver sulphide. It seems to me that to account for the colour it is absolutely necessary to assume that the silver sulphide forms a lake with the silver chloride. We cannot, of course, say whether we get a lake consisting of silver, silver sulphide, and silver chloride,



mixture of a silver and silver chloride lake and a silver sulphide lake. The red stage shows us an image in which much chloride remains, and the metallic silver and silver sulphide are both united with it in the form of lakes of good covering power. As the action proceeds, and the silver chloride gets more and more used up and converted into silver sulphide, the lakes get less marked in character, and possessed of less covering power, until finally the whole of the silver chloride disappears, and we get an image consisting of silver sulphide which is very meagre in substance.

I believe the red sulphide lake is the red constituent of all the red and purple tones on P.O.P. The opinion generally held is that the reddish tones on P.O.P. is that they can be obtained by sulphuration, but also by the deposition of red metallic gold. Now, I am quite well aware that metallic gold can be deposited from its solution in a red coloured form. I have, however, found that there never is any deposition of red gold on P.O.P. print, for in every case I have known over-toning of gold meant too blue a colour. If sufficient time is given in the toning-bath it is always possible to get this blue over-tone.

The toning-baths giving the reddish tones best, as a general rule, are certain "combined" baths and the thiocarbamide bath, when the latter is made up according to a suitable formula. The combined baths of any general use contain lead or an alum (or an alum), and these and the thiocarbamide bath, under suitable circumstances, slowly produce nascent sulphur. I imagine that part of the metallic silver is in this case sulphuretted just as the hypo-alum bath sulphurets the image of a silver print. Here, then, again, we get a red sulphide lake instead of a blue one. Now, what about the gold? Well, many things may happen. In the first place, there is a deposition of blue metallic silver, probably caused both by displacement of silver and also by the action of the sulphur. The solution of gold also reacts with the silver sulphide formed, as has recently been shown in the case of the thiocarbamide bath. The reaction is probably



the silver sulphide and silver chloride being formed. Of course, the fact that the silver sulphide is here part of a lake may make a difference, and we may get either very little action or no action at all. The aurous sulphide, if formed, may go into the lake, or may exist as a quite separate entity. It appears probable that the image consists of a mixture of the following (after the action in the case of the thiocarbamide bath, of course):—

Blue metallic gold.

A silver and silver chloride lake.

The red sulphide lake, i.e., a lake composed of silver sulphide and silver chloride or of silver, silver sulphide and silver chloride.

Aurous sulphide, either united with silver chloride in the lake or alone.

This is certainly a very complex affair.

Coming next in consideration the case of such toning-baths as the ammonium sulphocyanide (thiocyanate), potassium sulphate, or formate, we very often fail to get red tones at all. In every case in which the print is fixed for two minutes or more—which time is amply sufficient for fixation proper—the image will be found to be insufficiently red. The red character of the tone is gained during fixation, which it is necessary to try out with a solution of "hypo" of at least 15 per cent. concentration, and to continue for fifteen minutes or more. The change in colour while in the hypo solution may be due to a chemical change only, but I think it is almost certainly due to sulphuration. Why should this sulphuration take place in the case of prints toned with gold? The explanation is, I think, that the etching of the surface of the metallic silver particles caused by the action upon it of the gold leaves it in a state in which it is able to be sulphuretted by even a neutral solution of hypo. The uncertainty of the action certainly bears out

this etching theory, for we should certainly imagine that such a state of affairs would lead to a very uncertain result. Prints toned in a good thiocarbamide bath must not be fixed for too long, or they will fade. I advise only about four minutes. Here sufficient sulphuration has occurred in the toning-bath, as explained above, and further sulphuration beyond the red stage means destruction of proper density and good colour.

Nobody who has ever had any real experience of the toning of P.O.P. would ever guarantee to obtain always the same tone even approximately. If the tone was due to the deposition of red gold, and not to the formation of such an uncertain thing as the lake above mentioned, one would certainly expect far greater certainty. It is known that the colour of such molecular compounds as that spoken of above varies very greatly with even extremely small changes in their chemical composition. The action of a neutral solution of Schlippe's salt on bleached bromide prints shows this very clearly.

If any gelatine film is exposed to an acid solution of "hypo" containing too much lead or silver, the gelatine combines with the lead or silver to some extent, forming what Dr. Backeland has termed "retained" silver and lead. Even a neutral solution of hypo gives "retained" lead when it contains more than a very little lead. "Retained" lead and silver are colourless at first, but soon become yellow. The yellowing can be caused by the action of traces of sulphuretted hydrogen in the air, and by further action of the metallic compound on the gelatine. The yellowing of the whites of P.O.P. prints after keeping them a certain time is due to "retained" silver or lead, or to both. Where the emulsion contains soluble silver compounds, which is always so except in the case of Lumières' Actinos P.O.P., these soluble silver compounds almost always act to some extent on the gelatine. It must be borne in mind that all emulsions when technically "dry" contain a certain amount of water.

The action of the silver upon the gelatine depends on the composition of the emulsion with respect to the amount of soluble silver present, the percentage of such an acid as citric acid, the humidity of the air in which the paper is kept which regulates the amount of water in the gelatine film, the nature of the gelatine used in making the emulsion, the temperature to which the emulsion was heated during the time it was being made, the time taken for drying, the temperature of the drying room, and, finally, the age of the emulsion.

The correct drying of the paper is especially important. It must not be dried at anything approaching a high temperature—I believe about 80 deg. F. is right—and it must be dried very quickly. These two conditions can be brought about together by passing dried air heated to the correct temperature continuously over the paper. Dr. Backeland has suggested the refrigerating method of drying the air for this purpose.

The soluble silver of the emulsion which combines with the gelatine gives compounds, the greater part of which are soluble in "hypo" solution, and so are eliminated in fixing. I believe sometimes the whole of them are soluble, but I have never come across paper in which this has been the case to my knowledge. Normally, with the best brands of paper, and with that which I have made myself, I have found the insoluble compounds present in very small quantity; but still, whenever I have exposed a print, either toned or untoned, to an atmosphere of sulphuretted hydrogen, I have always noticed that the whites were slightly stained.

The whites of a print on "Actinos" P.O.P. are not stained at all by exposure to sulphuretted hydrogen, if the print has been properly made. These compounds, insoluble in hypo, may be "retained" silver; they are certainly closely analogous. People often talk about the permanence of "silver" prints, lumping together bromide prints, "gaslight" prints, and P.O.P. prints. Nothing could be more unjustifiable.

The degree of permanence possessed by a bromide or gaslight print, properly made, whether the image is left in its original

state or whether it be toned by a *good and sound* method, leaves practically nothing to be desired. Such prints should last more than man's three score years and ten, and no photographer can reasonably require more of his prints than this. In the case of P.O.P. things are very different. The image is always readily open to the attack of traces of sulphuretted hydrogen in the air, which, by sulphuretting the silver chloride of the lake or lakes of which the image mainly consists, will, as has been pointed out above, cause fading of that image. Except very rarely, in the case of all papers but "Actinos," there is always the danger of the whites being stained on account of the action of the soluble silver compounds of the emulsion on the gelatine. All the same, I think that if a print is made on paper of a good brand, preserved well in good condition, is finished off properly, and is then kept in a dry room, it should last for quite twenty years before showing signs of failure.

The very small traces of sulphuretted hydrogen in the air seem to act very slowly if the print is kept really dry.

I think there is no objection to the use of a "combined" bath if this be used properly. *The danger here is "retained" silver and lead.* The process must be so carried out as to avoid these. The print in every case ought to be first washed and then fixed in neutral or, better still, slightly alkaline hypo. I recommend:

Hypo .....	1½ ounces.
Sodium carbonate (cryst) .....	20 grains.
Water .....	10 ounces.

The print should then again be washed well and then put into the toning bath. This method of working will prevent the acid solution of hypo taking up too much silver.

Lead, if added to this bath, *should be added only in comparatively small quantity.* The following combined bath is suitable. Dissolve 1¼ oz. of hypo and 45 grains of alum in 6 oz. of boiling water, stirring until all has dissolved. Then allow this solution to stand till cool, and then add 4 grains of powdered lead acetate. This solution should be allowed to stand 24 hours, and is then filtered. To the filtered solution one ounce of the following gold solution,

Gold chloride .....	1 15-grain tube.
Water .....	7½ ounces.

is added, and the bath is ready for use as soon as the gold colour has disappeared.

What people have put down as the result of insufficient fixing is really "retained" silver or lead, due to using a badly made-up bath, or misusing a good one—letting it collect too much silver. There always has been, and still is, a great deal of nonsense talked about the time necessary for fixation. This is not nearly as long as many people imagine. If we use a badly made up bath, or misuse a good one, the longer we expose the prints to its action the more "retained" silver or lead we are likely to get. I think that about ½ grain of lead acetate per ounce of toning solution is about right, and should not be exceeded to any appreciable extent.

I myself always recommend the use of the thiocarbamide bath. In using this bath the following three stock solutions will be found convenient:

I. Gold chloride .....	1 15-gr. tube.
Water .....	7½ ounces.
II. Thiocarbamide .....	18 grains.
Water .....	7½ ounces.
III. Concentrated nitric acid .....	½ ounce.
Water .....	25 ounces.

The prints should be washed well before toning. They are immersed in the toning bath made up as follows:—

From 60 minims to 3 oz. of III. are taken, according to circumstances, and to this are added 60 minims of I., 60 minims of II., and then this solution is made up to 5 oz. with water. The bath should be used at a low temperature to prevent the swelling of the gelatine by the nitric acid—40 deg. Fahr. should be exceeded.

The use of ice in summer is therefore necessary. Six quarter-plate prints should be toned together in 5 oz. of the solution which then is used up, and should be thrown away. Thus gold required to tone six quarter-plate prints only works out at cost one-third of a penny. Experience alone will enable one to judge the proper end of the toning action: it is at first very easy to over-tone.

After toning has been carried out the prints are just rinsed in a dish of water for from ¼ minute to 2 minutes, according to the amount of acid used in the toning bath, and are then fixed in:

Hypo .....	1¼ ounces.
Sodium carbonate (cryst.) .....	20 grains.
Water .....	10 ounces.

There must be no washing in running water between toning and fixing. The reason why washing between toning and fixing is not take place is that, as previously stated, there always is a silver combined with the gelatine of the film and the paper. This combined silver is converted to some extent into a carbamide compound, and this compound is soon decomposed except in the presence of acid. One of the decomposition products is silver sulphide, and so we get brown stains on the print if they are washed, before being fixed, for five minutes or so in running water.

Fixation should be allowed about 5 minims, not longer, and the temperature of the fixing bath should be kept low—about 40 Fahr. After being fixed, the prints are well washed in a plain washer for about an hour, and are then complete.

Before finishing this article I should like just to touch on the question of the nature of the coloured images formed by a prolonged exposure and modified development of gelatino-chloride "gaslight" papers. These images consist of lakes formed of silver and silver chloride. I have not analysed any such lakes, but I have applied the other tests mentioned above. If any of these images are bleached and then sulphuretted the image of silver sulphide obtained is much weaker than the original. If also the silver be dissolved out of the image by ammonium persulphate or dilute nitric acid the presence of silver chloride remaining can be easily demonstrated. The images, too, attacked by sulphuretted hydrogen or a solution of a soluble sulphide, gaining slightly in density at first, but afterwards fading very much. Thus the images behave just as the lakes on plainly fixed P.O.P. does.

Since, in the consideration of silver halide lakes, the work of the late Mr. Carey Lea is of great interest and importance, readers of this article may want to renew their acquaintance with his researches. In this case they will do well to turn to the "British Journal Photographic Almanac" for 1902, pages 812-814. I may say that many—I fancy most—now deny the existence of definite sub-halides of silver, regarding the bodies stated to be such as lakes formed of metallic silver and silver halide. I personally agree with this modern view. It is very difficult to conciliate such a compound as that represented by  $\text{Ag}_2\text{Cl}$  with the notions of valency.

R. E. BLAKE SMITH, B.Sc. (Lond.)

THE SUBURBAN AND PROVINCIAL DEVELOPMENT ASSOCIATION, 29, John Street, Bedford Row, W.C., send us copies of illustrated booklets, published by themselves for the District Councils of Croydon, Ealing, Finchley, and Southgate. The booklets are copiously illus-

trated, and contain varied information regarding the districts dealt with. Those who are thinking of taking up their residence in one of the above-named localities may be glad to know that copies can be obtained free on application to the respective Town Clerks.



## SOME SECRETS OF DOG PHOTOGRAPHY.

[The fame of the firm of Thomas Fall, of Baker Street, in canine photography being recognised not only throughout the kennel world but wherever portraits of dogs appear in the illustrated papers, no little interest attaches to an article under the above title in the February issue of the "Kennel Magazine," where will be found a number of reproductions illustrating the differences between right and wrong methods in photographing dogs. These illustrations are as useful as the text of the article itself.—Eds. "B.J."]

It seems strange to talk of secrets in connection with photography when we consider that nowadays every third person we meet with has a camera, and knows all there is to know about "taking photographs"; but as there are certain features in dog photography which, though they may be well known, are not generally recognised, it is, perhaps, possible to strain a point and call them "secrets." Probably there is no other branch of photography that provides such a varied experience as dog photography. With so many different breeds, each possessing its own distinct characteristics (and every single dog its own peculiarity of temperament) which it is the object of the photographer to reproduce in some degree, it is open to question whether it is ever possible to do thorough justice to a dog in any photograph, a statement with which most owners will agree, with regard to their own dogs at any rate.

### How to Treat a Dog "Sitter."

Patience is the most important factor in the whole business, though it is needless to say a love of animals is indispensable. Without unlimited patience, both on the part of the photographer and the person who takes the dog in hand, it is quite useless to attempt to get a successful picture. Of course, dogs differ; sometimes it is possible to snap a splendid position almost immediately the dog is brought out, but very often the subject objects to standing in "perfect positions" even long enough for an exposure to be made, to say nothing of focussing; and it is only after many devices have been tried, and much patience displayed, both by the dog and his tormentors, that the weary victim is allowed to return to the kennel to make room for the next, which may prove to be as easy to "take" as its predecessor has been difficult. Too much is not to be expected of dogs; nor should their patience be tried too severely. If they can be induced to remain still for a few seconds, that is all that should be required of them.

One is often met with the remark that if the dog could only be followed with a hand camera ready focussed, and "snapped" when in a good, natural position, it would be a much easier performance. So it would, but would it give the same result? In the majority of cases the picture would be quite useless, and might even be a gross libel on the dog. Dogs have such an unhappy knack of posing in places where the background is unsuitable and the light all wrong, that it is much better to fix on a suitable spot and endeavour to bring the dog up to it. Again, it is much better to photograph on the floor, and not use a table or bench (there are exceptions, of course); dogs feel much more at their ease on the ground. The camera must be brought somewhere down to the level of the subject. Hence the only way to work a hand camera would be to follow the dog about on one's knees—a rather trying task—unless the manipulator happened to be a dwarf!

### The Importance of the Background.

Choosing the background has a lot to do with the success of the resulting picture, and due regard has to be paid to the dog's colouring, in order to make the subject stand out from, and not sink into, the surroundings. Sometimes, however, it is an advantage to make the dog's weak points (such as faulty hindquarters) tone into the background (to make their existence less noticeable) and sometimes it is advisable to emphasise the good points by making them contrast with the background. Much can be done in this way by work on the negative afterwards, but in every case the plainer the background the better. How often we see a really good position of a dog spoiled as a picture by a row of flower-beds, or by ivy leaves (which appear to be growing out of the dog's head) or by iron railings, which appear to have taken root in its back!

### Dog Portraiture Out of Doors.

Dog photography out of doors is much easier than in a studio on account of the rapid exposures that can be made, but most of the smaller breeds of dogs make much better pictures indoors where the light is under control. It is quite a fallacy to imagine that the sun is better for a photograph than shade. A strong, white light, with the sun obscured by clouds, gives the best results—more details in the shadows, more roundness to the body, and a more natural picture altogether. Harsh sunlight with heavy shadows (to say nothing of the alteration in the colours of the dog due to excessively patchy high-lights on the sleek glossy coat) gives a picture that is hardly recognisable when compared with one taken in a subdued light. Old English sheepdogs, and breeds with a similar kind of coat, can be photographed in any kind of light provided there is enough of it. It must not be imagined that because a dog appears to those standing near (possibly holding him on a lead) to be in a good position, that that position will photograph well. The photographer at the camera is the best judge, since he alone can see exactly what the lens will reproduce; and he knows that pictures that have the appearance of being "full of life" often make very disappointing photographs. "Too many cooks spoil the broth," but the dog photographer would be quite helpless without some assistance from those who know the dog best; and, doubtless, one of the great secrets of success in dog photography lies in the photographer's ability to so direct those assisting that they may control the movements of the dog, and make him stand in good positions, of his own accord, and without forcing him to do anything.

It is much better to entice a dog up a step, or to lead him round for a short run and bring him up again in the required place, than to pull him backwards and forwards on the lead, as it takes a very little to make a dog blow and pant, especially in hot weather. Touching the mouth or tongue with a damp cloth will often cause the dog to close it for a second. Sometimes it is necessary to lift a dog, so that the front legs come straighter, closer together, and more on the toes. This can be done by placing the hand under the neck and lifting, at the same time speaking to the dog in a reassuring manner—not by pulling him up by the collar. Sometimes it is impossible to get a group of dogs to keep still; this difficulty may be overcome by photographing each dog separately, and then combining them.

### Posing the Dog.

Generally speaking, it is easy enough to get a dog's attention by some slight noise, but it is one of the accomplishments of the dog photographer to be able to bark and growl like a dog, mew like a cat, scratch like a rat, imitate dogs fighting, and make other weird noises; then to notice the sound that takes the fancy, and reserve it for a really good position. The mention of the name of a rival in the kennels will often succeed when every other device has failed to attract; but sometimes this has such a disturbing effect that further operations are rendered impossible. It is as well to commence in the quietest way, as it does not take much to arouse the suspicions of some dogs; and once a dog gets suspicious and nervous it is all up with a photograph. Sometimes it is possible to rivet the dog's attention by some noise or action that the person holding the dog can slightly alter the hind legs or tail without the dog's notice; often the tail will not stay in position, and has to be held, and the hand "taken out" afterwards.

Though the secrets of dog photography are many, its disappointments are many also, but its study presents a source of inexhaustible interest, and its difficulties will probably continue to exist so long as there are dogs to photograph.

THOMAS FALL.

### THE PHOTOGRAPHIC CONVENTION. THE BRUSSELS MEETING.

THE arrangements for the meeting of the Photographic Convention of the United Kingdom in Brussels from July 6 to 11 are now far enough advanced to allow the general secretary, Mr. F. A. Bridge, to issue a preliminary programme of the week's doings. The Convention, it will be remembered, is meeting in the Belgian capital on the invitation of the Association Belge de Photographie, itself a national body of considerable influence. From its members an influential reception committee has been formed, with M. Vanderkindere, 97, Avenue Brugmann, Brussels, as secretary. Sir Cecil Hertset, President of the Convention, may also be regarded as a host in himself where the organisation of the Convention's programme is concerned. Commandant Van Bever, President of the Association Belge, and the Burgomasters of Brussels, Antwerp, and Ghent, and the President of the "Cercle Artistique" are also actively interesting themselves in the arrangements for the English visitors, and therefore it would seem as certain as anything human



The Hall of the "Cercle Artistique" where the meetings and exhibitions of the Convention are to be held.

can be that, in the words of the prospectus, "members attending this year's convention will have the advantage of visiting Belgium under exceptionally favourable conditions."

The following is an abridged synopsis of the programme for the week:—

Monday, July 6.—Morning: Reception by the Burgomaster of Brussels. Afternoon, at three o'clock: Official opening of the convention, president's address, and papers. Evening: Conversazione and exhibition of pictures, apparatus, etc.

Tuesday, July 7.—Morning: Excursion to Ghent. Evening: Annual general meeting.

Wednesday, July 8.—In and around Brussels. Afternoon, at four: The Official convention group will be taken in front of the Palais de Justice. Evening, at seven: Annual dinner.

Thursday, July 9.—Morning: Excursion to the old Abbey of Villers-la-ville. Evening: Paper and a lantern display by members of the Association Belge.

Friday, July 10.—Morning: Excursion to Antwerp. Afternoon: Reception and garden party, by the President and Lady Hertset, at the Jardin Zoologique. Evening: Papers or lecture.

Saturday, July 11.—Morning: Excursion to Malines.

We omit from this sketch of the programme the notes on the attractions of the places to be visited which appear in the official prospectus. The latter, however, can be obtained on application to Mr. F. A. Bridge, East Lodge, Dalston Lane, N.E., and will be found to contain also full particulars of the very substantial reductions, about half-fare, to be obtained by parties travelling to Brussels together.

SCOTTISH FEDERATION.—At the annual meeting of the Federation, the results of Federation competitions were announced as follows:—Portfolio—Macdougald Gold Plaque: Dr. Corbet, Barrhead, and D. Hodgeton, Brechin, a tie; Lantern Slides—Coates Challenge Trophy: Dennistown; 2, Paisley; 3, Glasgow Southern.

## Exhibitions.

### THE SCOTTISH NATIONAL SALON.

ORIGINALLY held five years ago, this exhibition has gone on increasing in quantity, quality, and popularity. When first held at Perth about four hundred prints were entered, and as it was then, and is now, confined to Scottish work, that was considered a big entry this year about 900 prints were submitted to the Board of Selection at Aberdeen. The photographic members of this Board, by the way, are all in the profession, which would seem to indicate that the latter are in the ascendancy in Scotland. Be that as it may, it is evident that the Council of the Federation are satisfied that in Messrs. Craig Annan, Crooke, and Patrick, with G. R. Gowan, R.S.W., they have men in whom they can safely put the reputation of photography in Scotland.

The Art Gallery in Aberdeen, where the Salon is held, is a magnificent building, with fine suites of rooms, and this is practically the first exhibition held in them since they became the property of the Corporation. The Lord Provost remarked that he was glad it was so, as it gave the city the opportunity of encouraging a most promising art.

The walls are the usual picture gallery crimson, but the Salon Committee covered them up half-way with neutral-tinted canvas, the projection of which from the wall at the top formed a beautiful dividing line of shadow. The effect was pleasing. The Hanging Committee tried, as far as possible, to hang each entrant's work in groups, and while this is a convenience for the visitor who wishes to study each worker's pictures as a whole, it is certainly impossible to make so congruous a wall as when the entries are treated as a whole and hung with a view to decorative effect.

It was evinced by the large and influential gatherings at the private view and opening ceremony that the citizens of Aberdeen are proud to have the Salon with them, and all credit must be given to Mr. Kay and his committee for the excellent arrangements they have made; while special mention must also be made of Mr. Bentley Philip for the exceptionally fine and complete syllabus of entertainments he has drawn up for the three weeks the Salon will be open. A detailed critique of the pictures is impossible, nor is it advisable to attempt it. Our province, then, will be better served if we devote the space available to a few notes on the professional work in the Salon.

Mr. Craig Annan (Glasgow) has the largest exhibit in the Salon proper (eleven pictures), and we would regret to omit one from the walls. They display a breadth of treatment and a full recognition of the possibilities of each subject that is inspiring. Several of the pictures are well known: "On a Dutch Shore," "A Little Princess," "A Book Plate" (which is splendidly reproduced in colotype as a frontispiece to the catalogue by Messrs. G. W. Wilson and Co., Aberdeen), "Miss Jessie M. King," etc. Of the new work the most striking is "R. B. Cunninghame Graham, Esq.," which has indelibly stamped on it the character of the man; it is more than a mere facial likeness, one feels it is the man.

Mr. William Crooke (Edinburgh) sends all portraiture. There is the famous "Henry Irving" picture; the "made" group of "Edinburgh Town Council," which gives no indication of its making; "In Silk Attire," a new work, showing a lady whose silk dress is finely rendered and contrasted with the cloth jacket: conflicting elements are absent, and the whole hangs well together.

Mr. James Patrick (Edinburgh) confines himself to those rural scenes which have won him so much fame. His principal contribution, "The First Touch of Winter" (reproduced in catalogue), is his latest interpretation of a theme he has been following out for some time, the delicate gradation of tone in snow, and its value in landscape work.

Mr. J. M. Whitehead (Aloa) is a standing testimony of the value of specialisation. The occupant of a country studio, he early specialised in flowers, and so successfully that he gained the R.P.S. Medal; then he transferred his allegiance to peaceful landscape scenes, and that at a time when we were satiated with a superfluity of wild expositions of such topics as "Day's Decline." That field he made his own and again gained the R.P.S. Medal. He is represented at the Salon by five works in his usual poetic and yet academic



anner. He has not yet learned to think shame of photography by trying to make it appear like something else.

Mr. J. B. Johnston (Edinburgh) has only three pictures, but they are outstanding works; his "Beaching the Boat" is reproduced in the catalogue, but many prefer his "After the Day's Work."

Mr. W. L. Dunn, Junr. (Aberdeen) has, as a centre-piece to his collection, which, by the way, has in it good honest studio work, a beautifully delicate little print—"Ella (Camera Sketch)." This may well give a hint to some of his brothers-in-arms of what might well prove a profitable line.

Mr. George L. A. Blair (Paisley) is at present in pursuit of the elusive light effects so frequently seen in late evening, but he has evidently studied the subject until he has reached that stage where he does not know exactly what he wants, and his pictures, though striking, seem to lack that decision that characterised his work.

Mr. Dan Dunlop (Motherwell) shows "The Old Professor" in portraiture; in outdoor work probably his best essay is "Edinburgh Castle from Greyfriars," an unusual view, but an impressive one of the castle.

Mr. John Moffat (Edinburgh) shows two portraits and a seascape; mostly in costume work of the time when "the world went very well on"; there is an air of daintiness and refinement in these pictures that is perfectly in touch with the period portrayed.

Mr. John Moffat (Edinburgh) shows two portraits and a seascape; good honest photography and the photographic basis in no way disguised.

Mr. P. D. Nairn (Stirling) is represented by two portraits, one of a wife who has seen life, one a young lass entering life; good straightforward work.

Mr. J. C. S. Mummery, President R.P.S., sends a one-man show. Mr. Armytage Sanders (London) has collected and sent natural history photographs by different specialists. Mr. Henry J. Comley (Bristol) has twenty colour photographs.

These notes are far from exhausting what might be said, but they will serve to show that as a whole the Aberdeen Scottish Salon does not fall below its predecessors.

## Patent News.

*Process patents—applications and specifications—are treated in Photo Mechanical Notes.*

The following applications for Patents have been received from January 3 to February 8:—

**LENS-CARRIER.**—No. 2,525. Method and mechanism in order to prevent the pushing in of the lens-carrier in hand cameras before the lens-panel is in the exact centre. Fabrik Photographischer Apparate auf Aktien, vormals R. Hüttig und Sohn, Camera House, Farringdon Avenue, London.

**MOUNTING.**—No. 2,538. Improved method of mounting photographs, engravings, and the like. Louis Hyde, 30, Duke Street, Chester.

**CINEMATOPHOTOS.**—No. 2,584. Process and device for the production of living pictures in relief by means of the cinematograph. Boris Weinberg, 35, Cannon Street, London.

**PHOTOGRAPHERS.**—No. 2,738. Improvements in, or connected with, photographic cameras. William Lawrence Parkinson, 15, Water Street, Liverpool.

**COLOUR PHOTOGRAPHY.**—No. 2,746. Combined dark-slide and developing dish for colour photography. Roger Barwick Hutton, Heslerton Cottage, Pitsea, Essex.

### COMPLETE SPECIFICATIONS ACCEPTED.

These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

**AUTOMATIC SHUTTER RELEASES.**—No. 1,487. 1907. The invention provides means whereby the shutter of a camera can be released after a time fixed by the operator.

One form, shown in Fig. 1, consists of a cylinder 1 and a piston 2, capable of sliding therein. The piston will ordinarily be made of fit air-tight in the cylinder by means of a cup leather 3. Attached to the piston is a piston rod 4, which will usually be tubular, the piston rod passing freely through a hole in the cylinder cover

5. A helical spring 6 is coiled round the piston rod, abutting against the cylinder cover and against the piston, so that when the piston rod is drawn out the spring will be compressed. A nozzle 7 is provided for connecting the apparatus to the pneumatic shutter of a camera by means of a rubber tube 8. Pivottally mounted on the cylinder is a trigger 9, having a long arm 10 and a short arm 11. The short arm of the trigger projects into a longitudinal slot

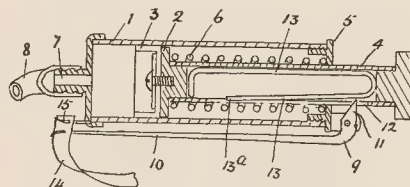


Fig 1

12 in the piston rod, and a spring 13 is so disposed inside the tubular piston rod that its point 13a will engage with the short arm 11 of the trigger when the piston rod is drawn out, and will hold the piston rod in its extended position so long as the trigger is not allowed to turn on its pivot, but the pressure of the helical spring tends to cause the trigger to turn and release the piston rod.

For the purpose of holding the trigger in position, a piece of fuse tape or paper 14 is pressed on to the extreme end of the long arm of the trigger and on to a point or hook 15 attached to the cylinder. The exposure is effected by lighting the fuse, which will be longer or shorter according to the time that is required to elapse before the exposure takes place. When the fuse has burned away the trigger is free to turn on its pivot, releasing the piston rod, and allowing the piston, actuated by the helical spring, to traverse the cylinder, driving before it the air contained in the

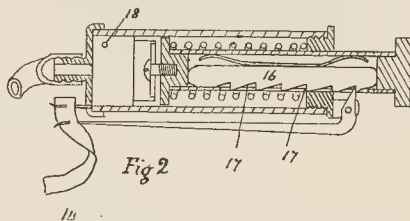


Fig 2

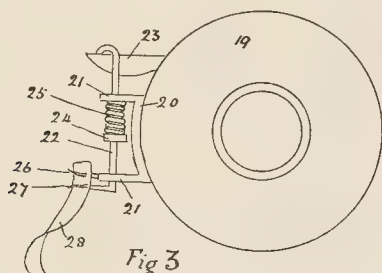
cylinder, and operating the pneumatic shutter to which the apparatus is connected.

Fig. 2 shows a modified form of the apparatus designed to give time exposures of graduated length. This form is intended to be used with pneumatic shutters, which are caused to open by air pressure, and to remain open until the air pressure is released. The disposition of the various parts is similar to that shown in Fig. 1, except that the spring 13, Fig. 1, is replaced by a member 16, Fig. 2, in which are formed a series of notches 17, any one of which may be caused to engage with the trigger, according to the distance to which the piston rod is drawn out. A fine hole 18 is formed in the wall of the cylinder, to allow the air to escape slowly. The pneumatic shutter being set so that it remains open as long as the air pressure is maintained, and closes when the air pressure is relieved, it is evident that the length of the exposure will vary according to the time required for the air compressed by the piston to escape through the hole 18. This time will be proportional to the volume of air compressed by the piston and the volume of compressed air can be varied by varying the distance to which the piston rod is drawn out. Thus the engagement of the trigger with each of the notches 17 will correspond to a definite length of exposure.

Fig. 3 shows another form adapted for use with shutters, which are operated mechanically by depressing a lever. Attached to the shutter 19 is the body 20 of the appliance, having two bearings 21, and slidably mounted in the bearings is a rod or plunger 22, one end of the rod being arranged to engage with the lever 23, which

operates the shutter. A collar 24 is formed on the rod, and a helical spring 25 encircles the rod, abutting against the said collar and against the bearing 21. The tendency of the spring is to cause the rod to slide in its bearings and to operate the shutter by depressing the lever 23. Attached to or forming part of the body 20 is a hook or point 26, and a second hook or point 27 is formed on the rod.

In using the appliance the hook 27 is brought close to hook 26 by sliding the rod in its bearings and compressing the spring 25,



and the rod is held in this position by passing the points 26 and 27 through a piece of fuse 28 in such a manner that the fuse binds the two hooks together. To effect the exposure the fuse is lighted, and after an interval of time, depending on its length, the fuse burns away and releases the rod 22, of which the hook 27 forms a part. The spring 25 then causes the rod to slide in its bearings and to engage with and depress the lever 23, thus operating the shutter. Edward Geisler Herbert, 89, Northern Grove, West Didsbury, Manchester.

**MERCURY-VAPOUR CYLINDER PRINTERS.**—No. 10,358. 1907. The apparatus consists of two supports, carrying a mercury-vapour light, which is started by being tilted, rockers to support the apparatus, and means for holding the apparatus in a position suiting the source of light. Thomas Thomassen Sabroe, 12, Colbjørnsensgade, Copenhagen.

**PREPARATIONS SENSITIVE TO LIGHT.**—French Patent, No. 380,502. 1907. Paper coated with gelatine, albumin, etc., is treated with a solution of molybdic acid, tungstic acid, or uranic acid, or of a salt of these containing some free acid. After exposure under a negative, the portions of the surface not reached by light are rendered insoluble by treatment with a solution of barium or aluminium acetate, the excess of the salt being removed by washing. Molybdic acid is said to give the best results with this process, the pictures obtained being blue; they can be toned, if desired, with gold or platinum. J. de Ruiter.

**HELIOGRAPHIC PRINTING PROCESS.**—French Patent, No. 381,020. 1907. Paper is coated with gum arabic and impregnated with bichromate; after exposure in sunlight beneath a design, the paper is washed, dried, coated with an alcoholic solution of a suitable colour, sandarac, resin, and shellac, and treated with dilute hydrochloric acid. A reproduction of the design in colour is said to result. L. Fiorillo.

The following complete specifications are open to public inspection before acceptance under the Patents Act, 1901:—

**PLATES.**—No. 18,860. 1907. Methods for loading and unloading photographic plates and the like in broad daylight. Mela.

**COLOUR PHOTOGRAPHY.**—No. 2,313. 1908. Three-colour reticules for colour photography. Krayn.

## New Trade Dames.

**"CHESS BRAND."**—No. 298,899. Photographic papers. The British Photo Paper Company, Ltd., Scott's Bridge Mills, Scott's Hill, Rickmansworth, Herts, photographic paper manufacturers. December 16, 1907.

**PHOTO-SECESSION.**—An exhibition of more than fifty examples of the work of Mr. George H. Seceley, of Stockbridge, Mass., is being held until February 25, in the Little Galleries of the Photo-Secession, New York, from 10 to 6 daily.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Ozobrome.

It must be well known to all who have practised ozobrome printing (writes the Rev. H. W. Dick in "The Amateur Photographer") that after the bath has been used to sensitise a certain number of plates, a certain weakening, or deterioration, or contamination of the bath leads to trouble and to the necessity of "doctoring." I knew exactly what had happened to the bath we might unfairly be able to put it right, but as a matter of fact we do not know for certain what change takes place, hence an element of uncertainty when the sensitiser has been repeatedly used, according to the directions issued so far. My change of method is so simple that I can only wonder that I did not think of it and put it in practice before. It is as follows:—Dip the tissue into clean water for ten or fifteen seconds, withdraw, drain for a moment or two, lay the tissue down on the bottom of a clean porcelain dish (inside the dish of course), pour on the centre of the tissue sufficient of the dilute sensitiser to saturate thoroughly (one drachm and a half for a half plate is about right), and for two minutes work this across and across with a flat soft brush, proceeding from this point in the ordinary way by bringing the plaster into contact with the bromide for printing. Inasmuch as one only brings into contact with each plaster sufficient of the sensitiser for that plaster, no contamination or weakening of the remainder is possible. In other words, each plaster has a fresh bath all to itself. The brush may now be rinsed in water and then vigorously shaken to discharge superfluous moisture, when it is ready to sensitise another piece.

## New Books.

**"TIME AND TANK DEVELOPMENT."**—No. 84 of "The Photo-Miniature" is devoted to this much-discussed topic, described in the second line of the text as "fool-proof." That it can justly claim to be a quite up-to-date treatise on the subject is proved by its inclusion of the article by Mr. Alexander Mackie which appeared in the pages no longer ago than December 6 last, since when the "Photo-Miniature" has been edited, printed, and sent to these shores. The writers deal with apparatus, English and American, for tank development, with recommendations for formulae and prepared developers, and with methods of adjusting the "time" method to varying conditions of temperature and negative. As tank methods are proving so economical in the hands of professional photographers, we can certainly recommend the "Miniature" as a convenient first book of reference on the subject. Our contemporary is published in the country by Messrs. Dawbarn and Ward, 6, Farringdon Avenue, London, E.C., and in America by Tennant and Ward, 287, Fourth Avenue, New York.

**"LIESEGANG'S PHOTOGRAPHISCHER ALMANACH."**—The twenty-eighth annual issue of this publication has appeared from the press of M. Eger, Leipzig, price M. 1 or M. 1-50 in cloth binding. Herr H. Spörl, the editor, has included a directory of German and Austrian photographic societies, a review of recent apparatus, and a number of contributions on more or less technical subjects. The frontispiece is a collotype portrait of Professor Hermann Krone.

**"THE AFTER-TREATMENT OF THE NEGATIVE."**—Messrs. Gautier Villars have issued, at 1f. 75c., a fifty-six page monograph by Ernest Conset on the use of intensifiers and reducers. It does more than prescribe the best formulae for these reagents, it contains a number of hints on the best methods of employing them and as to the circumstances in which they are best applied. The short manual confines itself to the measures to be taken when remedying an imperfect negative, and hence is appropriately entitled "Les Correctifs du Développement."

**RETOUCHING.**—A new edition of Mr. Arthur Whiting's altogether excellent handbook of retouching methods for amateur and professional reaches us from Dawbarn and Ward, Ltd., 6, Farringdon Avenue, London, E.C., by whom it is published at 1s. net. We are glad to find that the mark of public approval, in the shape



a call for a second edition, has been bestowed upon this eminently practical book of instruction.

**VOM NUTZLICHEN DURCHS WAHRE ZUM SCHÖNEN.**—Under this is a small monograph on carbon printing has been written and described by a German photographer, Herr A. Grienwaldt, of Bremen. It describes the writer's preferences as regards certain points in the process, and is evidently the work of one familiar with his subject.

**PHOTOGRAPHY BY FLASHLIGHT.**—The January issue of "The Photographer," No. 85, of our well-edited contemporary, will be read with interest by English photographers if only for the inscription at the head, "Edited by John A. Tennant and Thomas Bedding, R.P.S." Evidently Mr. Bedding's accession to the editorial management of the "Miniature" has meant the more regular appearance of our contemporary—a fact in itself for mutual congratulations. The present issue compresses within its covers a good deal of useful information on flashlight work.

## News and Notes.

**DR. HALL-EDWARDS**, of the Birmingham General Hospital, has for many years past been suffering from ulcers on his hands and skin, due to his constant use of X-rays. On Sunday last he had his left arm amputated, and hopes that the progress of the disease has been arrested. Dr. Hall-Edwards is at work on a book on X-ray treatment.

**GOERZ LENSES.**—We understand that it is possible that lenses, from the manufacture of the Goerz factory, may be offered, engraved "Goerz Anastigmat No. 2." Our readers who may be purchasing Goerz lenses are advised to see that they are obtained from a dealer in whom they can place reliance, and to be especially careful in purchasing any cheap second-hand Goerz lenses otherwise they may have spurious lenses foisted upon them.

**FRITH AND CO., LTD.**, write us from Reigate, Surrey:—"We receive in your 'Answers to Correspondents,' on February 14, a paragraph referring to 'Frith, Photograph Publisher, Reigate, is dead.' This in reply to your correspondent 'J. P. W. D.' We thank, however, in justice to the above-mentioned firm you should be in your next issue that although, as you put it, Frith is dead, the firm is carried on under the style of 'F. Frith and Co., Ltd.' We notice you have been good enough to do in the case of the person mentioned in the earlier portion of the paragraph."

**JOHN THOMPSON, VENTNOR.**—Miss Lilian Thompson writes us, from 9, Pier Street, Ventnor, I.W., as follows:—"I should like to correct an error in this week's issue of the 'B. J.' My father purchased this business from the late Mr. Fred Hudson more than twenty-two years ago, and has carried it on since in his own name, John Thompson." As Mr. Hudson had no son, it is strange how a misconception should have arisen."

**THE FALLOWFIELD SMOKER.**—The employees of the firm of Jonathan Fallowfield will hold their annual smoking concert at Frascati's restaurant (Banqueting Hall) on Friday, February 28, under the presidency of Mr. F. W. Hindley. Tickets, price 1s. each, may be obtained of any of the employees, or of Mr. J. C. Preece, hon. assistant sec., 146, Charing Cross Road, W.C. An advance copy of the programme, kindly sent to us by Mr. Duncan Hindley, shows that a most enjoyable evening should be spent. Ladies are specially invited, and morning dress will be worn.

**BULBECK AND CO.**, technical photographers, 158, Strand, W.C., notify us that they are now on the telephone service—No. 749 City.

**STOLEN APPARATUS.**—The City Sale and Exchange, Fleet Street, London, E.C., notify us that the following articles have been stolen on February 18 from one of their messengers: No. 33 quick-focus Tak, box form, for pictures 5½ in. by 3½ in., pencil mark inside base A/X, stamped 9797, in leather case; two Elite quarter-plate focal-length cameras, collapsible model, no slides; one marked in pencil A/M, the other marked C/O/M, Nos. 4996 and 9874; one Ross homocentric lens, Series C, in focussing mount, working at f/3, No. 10,337, number engraved on lens 67064; one 5 in. Ross homocentric lens, Series C, working at f/6.3, No. 10,338, number engraved on lens 67061, also in focussing mount; 5 by 4 Planex box camera, marked in pencil on base A/X/M, no ground glass at back, no slides; one wood camera lens panel; one Dallmeyer flange.

## New Apparatus, &c.

The Graber Automatic Bromide Exposing and Developing Machine. Made by E. Graber, 16 and 38, Newton Road, Tunbridge Wells.

We have so often insisted on the importance to the photographer of acting as his own postcard producer and publisher that we are bound to draw attention to any device which assists this desirable and usually profitable end. The Graber machine occupies a position intermediate between the hand-fed machines and the large rotary installations capable of running off the largest editions. True, the Graber is capable of large output, such as 100,000 per day, but its advantage to the local producer lies in the fact that it can equally be economically used for short runs of, say, only two or three sets of exposures.

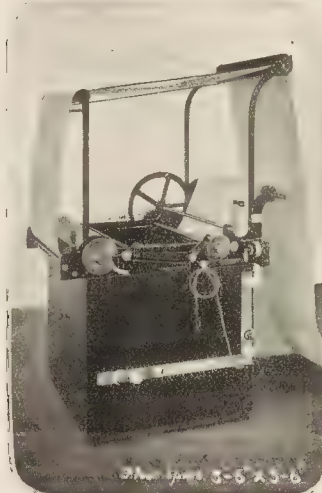


Fig. 1.

The bromide or gaslight paper is fed off the reel and brought behind the frame of fourteen negatives, each of which is supplied with a separate lamp, adjustable to the density of the negative. This plan is preferred to the method of "equalising" the densities of the negatives in a set with oil paper, and it obviously permits of more rapid adjustment. The exposure is automatically repeated once it

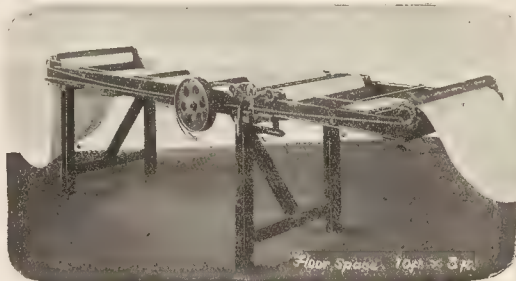


Fig. 2.

has been set. The machine, as shown in Fig. 1, also allows of printing any size of negative up to 25 x 12, it occupies very little floor space (3ft. 6 in. square), and can be worked by hand or power.

Accessory to the printer is the developing machine, also the invention of Mr. Graber, and produced, in the first instance, for the Falla-Gray paper, which, as our readers may recollect, fixes in one minute and is washed free from hyposulphite in five minutes. The washing part of the installation in this case is, of course, much shorter than for other makes of paper, but the series of trays can be adjusted for the paper to be treated for any length of time in the developer, fixer, and wash-water. Moreover, one other

feature of the printer should be mentioned—namely, its facility for simultaneously applying letterpress printing to the front of the card.

We recommend all those interested in acquiring a machine, which they can install in an establishment of moderate dimensions, to apply to Mr. Graber for prices and particulars of the machine, which certainly, in our judgment, is a most efficient and well designed piece of apparatus.

## New Materials, &c.

**"GREUZE" MULTIPLE MOUNTS.**—Messrs. W. Butcher and Sons send us samples of mounts which they have issued to meet the beginner in multiple mounting half-way. Multiple mounting must always be quite individual, and we cannot imagine Mr. Evans abandoning his practice of building up the mount behind his print to employ a ready-made mount of several tints. However, as an introduction to the beginner in the use of several tinted mounting papers, the "Greuze" series is convenient and inexpensive. Twelve mounts, for quarter-plate prints, each with two pasted-on tints, cost 1s. An improvement, we think, from the pictorial standpoint, would be the placing of the pasted-on tints slightly above the geometrical centre, so as to conform with the classic rule of an equal space above and on either side of the print and a greater space below.

**FLAT POSTCARDS.**—A sample of a new preparation for producing flatness of postcards has been sent to us by the maker, Mr. A. W. Bowen, of 193, High Street, Watford, by whom it is supplied at 1s. 9d. per 100z. bottle, post free. The material consists of a pale coloured weak jelly, which is made ready for use by placing some lumps of it in a jar standing in hot water. The prints, as they come from the wash water, are laid, picture side down, on glass, and the address sides painted over with the warm fluid preparation. On allowing them to dry spontaneously, the cards remain practically as flat as can be desired, and after a little pressure will retain their flatness even if stored in the heat.

**LILLYWHITE PAPERS,** gaslight, bromide, P.O.P., and self-toning are now used as "semi-matt," in addition to the matt and glossy brands, which have already been accorded a considerable measure of favour.

## CATALOGUES AND TRADE NOTICES.

**BARGAINS AT HOUGHTONS.**—Messrs. Houghtons Ltd. have in the press a list of bargains in all the lines which they are not cataloguing in their new general list. It will be ready by the time these lines appear, and we may therefore advise immediate application for it. The goods may be ordered through a local dealer.

**NEW PHOTOGRAPHIC LENSES.**—Messrs. A. E. Staley and Co., 19, Thavies Inn, Holborn Circus, London, W.C., have just issued a new list of their latest novelties in lenses and other apparatus. Though the list runs to 48 pages, practically every item is of recent introduction. Special mention should be made of the Pulligny anachromatic lens, which is supplied by Messrs. Staley, and instructions for the use of which appear in the list; of the Staley-Wheeler high-power telephoto lens, the Staley-Wheeler folding lens shade, reflex and folding cameras. The lens is certainly one to be acquired, and is sent by Messrs. Staley on receipt of one penny stamp.

**"A GUIDE TO PHOTOGRAPHIC PRINTING."**—A 32-page booklet has been issued by Messrs. Thomas Illingworth and Co., and in its attractive cover should be certain of creating interest on the dealers' counters, for which purpose a supply can be obtained free. The booklet describes the working of the firm's bromide, gaslight, and self-toning papers, gives a good many useful hints, and is a publication of interest to both the professional and amateur worker. Single copies are sent free on application to Messrs. Illingworth, at Willesden Junction, N.W.

**PROFESSIONAL REQUISITES.**—Messrs. Sichel and Co., 52, Bunhill Row, announce they have now thoroughly rearranged their show-rooms, and are showing an exceptionally fine range of accessories and Rocco and other frames.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

FRIDAY, FEBRUARY 21.

Sutton Photographic Club. "Warm Tones on Bromide Paper."  
Tunbridge Wells Amateur Photographic Association. "Carbography." Rotary  
Photographic Company.  
Cardiff Photographic Society. "Switzerland Revisited." Rev. J. E. Dawson.

MONDAY, FEBRUARY 24.

Scarborough and District Photographic Society. "Swiss Snaps." E. L. Davis.  
Southampton Camera Club. "By Battlement, Wall and Tower." James Shaw.  
Bradford Photographic Society. "Enlarged Negatives." Rotary Photographic  
Company.  
Cleveland Camera Club. "Time Development." Kodak Company.  
Gravesend and District Photographic Society. Criticism of Exhibition Prints  
by Members.

TUESDAY, FEBRUARY 25.

Royal Photographic Society. "Photography as an Aid to Electrical Research."  
K. J. Tarrant.  
Halifax Camera Club. "Photographic Chemicals."  
Sheffield Photographic Society. President's Evening.  
Leeds Photographic Society. "Pictures from the Balkans." C. B. Howdill.  
Hackney Photographic Society. "Tone Values. Decorative and Conventional  
Treatment." A. H. Blake, M.A.  
Keighley and District Photographic Association. "Scenes and Incidents on the  
Yorkshire Coast." William Holmes.  
Nottingham Camera Club. "Madeira." F. H. Radford.  
Hanley Photographic Society. "The Autochrome Process." Jas. Wright.

WEDNESDAY, FEBRUARY 26.

Borough Polytechnic Photographic Society. Lantern Slide Competition.  
North Middlesex Photographic Society. "Some Remarks on Members' Work."  
F. C. Tilney.  
Central Technical College Photographic Society. "Sanger-Shepherd Colour  
Photography: Its Latest Improvements and Applications." E. D. Doncaster.  
South Suburban Photographic Society. Practical Lecture. H. W. Bennett.  
Woodford Photographic Society. "Finishing Lantern Slides." F. G. Emiler.  
Croydon Camera Club. "Lantern Evening, with Explanation of Various Methods  
to Gain Special Results." H. P. C. Harper and others.  
Coventry Photographic Club. Judging No. 2 Winter Competition and Lantern  
Slide Competition.  
Edinburgh Photographic Society. "Enlarging." J. F. Duthie.  
Sheffield Photographic Society. "Enlarging on Various Grades of Rotograph  
Bromide Paper."

THURSDAY, FEBRUARY 27.

London and Provincial Photographic Association. "A Tour in Holland." Stanley  
E. Fincham.  
Handsworth Photographic Society. "The Composition of a Picture." Walter  
J. Morgan, R.B.A.  
Hull Photographic Society. "Y.P.U. Slides."  
Bath Photographic Society. Practical Evening.  
Liverpool Amateur Photographic Association. "A Wayfarer in Rural Japan."  
Harold Edgar Young.  
L.C.C. School of Photo-Engraving and Lithography. "The Powder Processes in  
Photography." E. W. Foxlee.  
Richmond Camera Club. "Architecture of Oxfordshire." John F. East.  
Rotherham Photographic Society. "Enlarging on Rotograph Paper." Rotary  
Photography Company.  
North London Photographic Society. "Choice of Subjects in Landscape Photo-  
graphy." G. Hale.  
Longton and District Photographic Society. "Middleburg and District." B.  
Marks.

### ROYAL PHOTOGRAPHIC SOCIETY

MEETING held Tuesday, February 18, the president (Mr. J. C. S. Mummery) in the chair.

A lecture was delivered by Mr. A. H. Blake, M.A., on "London in the Eighteenth Century." The lecturer illustrated a fascinating discourse with photographs taken by himself of survivals of eighteenth-century architecture in London, and with a number of reproductions of Hogarth's sketches of the life of the period. The lecture, which was in Mr. Blake's accustomed pleasant conversational style, showed the many interesting bits to be found in London by those who will take the trouble to acquaint themselves with the history of the past, as they can do, for example, in the writings of the late Sir Walter Besant. A hearty vote of thanks to the lecturer concluded the proceedings.

CENTRAL TECHNICAL COLLEGE PHOTOGRAPHIC SOCIETY.—Meeting held February 12. Prof. Henrici occupied the chair. Mr. N. M. Clougher related some very interesting experiences with a cinematograph in Canada. Mr. Clougher first showed one of his first attempts, taken from a tram car on the Thames Embankment and Westminster Bridge. After various scenes on board ship, films of the following were shown:—"Tram Car Ride in Toronto," "Log-rolling Contests," "Lumbering at Latchford," "Canal Lift-lock at Ottawa," "Fire Drill in a School," and "A Fire Station Turn out." In concluding, the lecturer acknowledged his thanks to Messrs. Hepworth for the machine used during the evening.

LONDON PROVINCIAL PHOTOGRAPHIC ASSOCIATION.—At the meeting held February 13, 1908, Mr. A. Haddon being in the chair, Mr. A. E.



th lectured upon "A two-eyed lens." This was, he said, an  
ary lens by the aid of which either single pictures or double  
ures could be taken at will, and for taking stereoscopic pictures  
ing was moved or altered except the diaphragm. The stops  
at be of any shape, either round or square. The lens used  
demonstration purposes was a Fallowfield portrait; for stereo  
k he often used a Zeiss Unar; in fact, he said, any lens of suffi-  
diameter might be used. The lecturer first focussed upon the  
t the filament of an ordinary electric incandescent lamp. On  
ing a cardboard stop in front close to the lens, with two holes  
t, thus — ○ ○ — it was shown at once that two images  
e there, and both quite sharp. Mr. Smith went further than  
and by increasing the number of holes to 5, 9, and 50, showed  
the lens gave a distinct image for each hole added. If one  
the two-hole stop and exposed a plate through one hole only,  
then exposed another plate through the other hole, the two  
tives would be found to give perfect stereoscopic views, examples  
which were passed round.

question as to the proper separation for a pair of lens of 2½ in.  
is opened up an animated discussion, and Mr. Smith showed a  
v of the dome of St. Paul's, taken at a distance of 2,000 feet, in  
ph the separation was 180 feet. The separation should be in pro-  
portion to the distance of the nearest object, and for interior work  
best separation would be from 4 to 4½ inches.

OUTHAMPTON CAMERA CLUB:—"A Few Recollections of Bruges"  
is the title of a successful competitive lecture given by Mr.  
E. Parsons on Monday last. A two-days' sojourn in this "old  
of Flanders" was described, and well illustrated with a series  
slides depicting various quaint street scenes and typical figure  
ies. Mr. A. R. Bacchus contributed an interesting discourse,  
led "Our Reptiles and Batrachians." A humorous account of our  
in Cornwall by Mr. F. Russell was much appreciated, and  
evening terminated with a short account of Netley Abbey,  
ribing its historical connections and architectural beauty, by  
R. Robinson.

## Commercial & Legal Intelligence.

ANVASSER SENTENCED.—George Wood, photographer, Galashiels,  
ded guilty in the Jedburgh Police Court, of having, in various  
es in Roxburghshire, received money in payment of photographs  
ook, or pretended to take, and did not forward, or intend to for-  
d, to the parties. The total amount was £3 8s., and thirty-nine  
s were scheduled. In one instance he pretended to take the photo-  
hs of twelve persons with two plates. Sheriff Baillie sent him to  
on for six weeks.

DISSOLUTION OF PARTNERSHIP.—The partnership between George  
ard Crooks and Harry Martin Sharp, cinematograph film manu-  
urers, of Mitcham, Surrey, has been dissolved by mutual consent,  
all debts due and owing will be received and paid by G. H.  
oks.

DETENTION OF A LETTER.—Before his Honour Judge Bompas, K.C.,  
he Bradford County Court last week, an action was brought by  
Emil Scholl, photographer, of Briggate, Leeds, against Joseph  
mont, photographer, Bond Street, Leeds, and Bradford, for £5  
ages for the detention of a letter. Mr. J. W. Perkins appeared  
behalf of the plaintiff, and Mr. W. W. Holmes represented the  
ndant.

r, Perkins stated, in opening the case, that on October 12 a  
r was addressed to Mr. Scholl, care of Mr. Rosemont, Bond Street,  
s, by a former employee of the defendant. The plaintiff, who  
an operator for the defendant at his Bradford studio, was in the  
it of calling at the Leeds studio, and on October 14 he saw the  
ndant, who said nothing about having received the letter. From  
ain remarks which Mr. Rosemont afterwards dropped, the  
ntiff suspected that a letter belonging to him had been opened  
the defendant. In consequence, the plaintiff gave the defendant  
ce of his intention to leave his employment. No serious damage,  
aps, had been sustained, but a claim was made for £5 for what  
a wrongful and indeed a criminal offence.

is Honour, in giving judgment on Tuesday last, said he was  
y to admit the defendant's statement that he opened the letter

without noticing the address, but he could not accept the statement  
that he read it because he thought it might relate to his business.  
There were two causes of action in the case. First, the defendant  
was guilty of trespass in opening the letter, and that, even if he did  
so supposing at the time it was his own. He thought that he ought  
in this case to give exemplary damages to secure the privacy of  
letters, and he fixed them at £5.

But besides opening and reading the letter, the defendant put it  
in his drawer, and took no steps to deliver it to the plaintiff. Con-  
sequently, he must consider what were the duties of a person who  
took in a letter addressed to his care. As the defendant put the  
letter in his own drawer with the intention of converting it to his  
own use and only subsequently decided to return it to the plaintiff,  
he was liable in trover, and although this was of less importance to  
the plaintiff, who had already seen the manageress, he thought it  
was a wrong for which he ought to give some damages, and he would  
give judgment for £3 under that head. He gave judgment, there-  
fore, for £8, and, notwithstanding that it had been necessary to  
alter the particulars, he thought he ought, under the special  
circumstances, to give the full costs, and he put them on "B"  
scale, as he thought the action was one of public interest, and  
involved difficult questions of law.

## Correspondence.

\*• *We do not undertake responsibility for the opinions expressed by  
our correspondents.*

\*• *Correspondents should never write on both sides of the paper.  
No notice is taken of communications unless the names and  
addresses of the writers are given.*

### PHOTOGRAPHIC EXHIBITS AT THE FRANCO-BRITISH EXHIBITION.

To the Editors.

Gentlemen,—Would you be so good as to help me to draw the  
attention of your readers to the Scientific Section of the Franco-  
British Exhibition which is to be opened next May at Shepherd's  
Bush? Sir Norman Lockyer, the Chairman of the Committee of  
this section, has devoted himself energetically to the work, and  
the result promises to be that we shall have a really representative  
collection of scientific apparatus. The photographic portion of it,  
however, will not, I fear, compare favourably with the rest. We  
have a large number of illustrations of the applications of photo-  
graphy to scientific purposes, but these will, of course, be distrib-  
uted among the various classes to which they properly belong—  
astronomy, biology, etc.

Exhibits illustrating the progress of photography itself are for  
the most part lacking. I take it that this is due mainly to the  
fact that photographic research is now for the most part of a  
commercial character. A great deal of investigation is going on,  
but it is mainly in the laboratories attached to photographic manu-  
factories. We get the results in the form of improved photographic  
materials, but of necessity the manner in which these results are  
obtained is not divulged. If, then, any of your readers are willing  
to lend any illustrations of the progress of photographic research  
in France or in England during recent years, their assistance would  
be cordially welcomed by the Committee.

There are no charges in connection with the Scientific Section.  
Intending exhibitors should communicate with Sir Alexander Pedler,  
C.I.E., F.R.S., the Honorary Secretary of the Science Committee,  
at the offices of the Exhibition, 56, Victoria Street, S.W. As the  
time is now getting short, it would be well if they would communi-  
cate at once.—Yours faithfully,

H. T. Wood

Royal Society of Arts,

John Street, Adelphi, W.C.

February 12, 1908.

### A SIMPLIFIED METHOD OF DEVELOPING AUTOCHROMES.

To the Editors.

Gentlemen,—You were good enough to publish my letter on this  
subject and to comment on my specimens. You are quite right in  
saying that the slide I sent to you was too dense, although it

appears more dense than it really is, because the background was a black cloth. It was one of the first I did by the method I described, and since then I have made many very much better. I find that the control which is possible is very great, and to show you how great it is, the enclosed Autochrome (which is broken, but will serve the purpose) was developed for sixteen minutes in rodinal 1-10. During the whole of this time it was exposed to a light sufficient to clearly define the outline of the plate in the dish, and was frequently examined by red light. If the finished result be required very transparent, the first development must be carried on longer. If, after reversal, it appears that too much density will result, I expose to light, place in a weak rodinal solution until a slight fog appears all over, and replace in the reversing solution, thus reducing. The redeveloped plate may be placed in a 5 per cent. solution of ammonium persulphate, followed by 10 per cent. solution of sodium sulphite, to accomplish the same result. Slight fogging during development has no prejudicial result, merely tending to thinness in the finished slide.

It would appear that rodinal has the effect of eating away the image it forms, for I find that after a rather prolonged development the true colours are all shown without the necessity of the reversing solution, the parts which appear the darker by reflected light showing transparent by transmitted light. Personally, I have done with ammonia, pyro, and nitrate of silver, for even the fascinations of the Autochrome process are not sufficient to compensate for the appearance of one's hands after immersion in these chemicals.

I am strongly of opinion that success with Autochromes depends entirely on the first development, and that the plate should be carefully watched. I have obtained results almost indistinguishable with from one minute up to sixteen minutes in the developer.—Yours, etc.,

WILLIAM E. CLIFTON.

St. Peters Chambers, Nottingham,  
February 15, 1908.

[The Autochromes sent by our correspondent are as excellent examples of the process as could be wished.—Eds. "B.J."]

#### PHOTOGRAPHERS AS PROFESSIONAL MEN.

To the Editors.

Gentlemen,—“The status of professional photographers.” Is it completely commercialised away?

An every-day occurrence frequently illustrates conditions, and answers such questions often better than pages of verbosity. My studios were visited recently by a lady to make an appointment and arrange terms for photographing her on horseback, in our public park.

The time was fixed and terms arranged, apparently satisfactory to my client, and fairly remunerative to myself, but in a quarter of an hour or so she returned and greeted me thus: “Oh, Mr. Barry, would it not be cheaper if I was merely snapshotted?” I fairly gasped, and on recovery began to explain—But I have written enough. I have touched the button, and my readers' thoughts must do the rest. Oh, daily reflections! How our art is belittled in the esteem of the public!—Yours faithfully,

W. BARRY.

Hull,

February 17, 1908.

P.S.—I further cogitate. Is the price to be charged in accordance with the speed of the shutter?—W. B.

To the Editors.

Gentlemen,—I have for some time past been reading in your columns the correspondence *re* “Photographers as Professional Men,” but cannot for the life of me understand as to the origin of the controversy raised. Do the public as a body and by common consent ignore to recognise a photographer as a professional man, or is it a hue-and-cry raised by a certain class of photographers who have neither merit in themselves nor can endure keen competition?

I am strongly of opinion that a photographer who has justly and meritoriously placed himself in a sphere whence he could command respect and admiration will not for a moment condescend to enter into such a controversy.

Let each who desires to enter into this blessed arena of social

status which an honest, deserving, and talented artist has power to build for himself after years of toil and patience, strive to raise himself to that standard of efficiency and moral conduct, and the public will not grudge to look upon the whole class of photographers as professionals deserving of all respect and esteem, if it has reason to look upon only a limited number in that light.

It is impossible to introduce hard and fast rules to regulate the onward or downward march of those engaged in this profession, and consequently the whole question must be left to the good will and common sense of the enlightened public, who have heart wide enough and understanding sufficient to extend praise and esteem where either or both are due.

The respect, in my opinion, does not lie in simply belonging to a profession, but in doing credit to it, and the public is always the best judge of our performances.

It is unwise, therefore, to force the question upon their notice by complaining of their (photographers') social status and the like, at the least said on the subject the better for all concerned.

It is absurd to talk about improving the status of this profession by introducing examinations. Are there not let loose in the world doctors good, bad, and indifferent, and did they not one and all strive to secure diplomas? If to pass examinations was only a sure method of “weeding out the unfit,” then the least said of such fallacy the better.

The “unfit,” in my opinion (if I may be allowed the expression “weeds himself out”—the very word suggests it; and consequently he is the least likely to cause apprehensions in the minds of those with such good taste pose themselves as “fit” for the profession.

Fearing I might transgress the limit allowed for such a correspondence, I conclude, and remain, yours, etc.,

M. B. MISTRY.  
3, Glazbury Road, West Kensington, W.,  
February 14, 1908.

To the Editors.

Gentlemen,—It is not my intention to discuss the question of professional photography any further, as my views upon the subject were fully given in my original letter. I feel compelled, however, to indulge upon your space once more to put the gentleman who styles himself unfit right upon one point.

I must ask him to once more read the letter written by “Status” and after carefully doing so, again refer to my reply to it. He will then find his chief cause of complaint against me—i.e., the “unfit”—was not mine. I asked, and still want to know, who are to be classified under such a heading, my contention being that each worker makes his own reward and position, whether it be solely for “bread and butter and motor-cars,” or coupled with the satisfaction of executing artistic work, which gives pleasure both to the customer and photographer, who, I feel sure, “the unfitted one” will allow me to term an artist.—Yours, etc.,

W. R. GOODYER.  
33, High Street, Bognor,  
February 15, 1908.

ANALYSIS OF SODIUM SULPHITES.—It is commonly supposed by photographers that this substance is very liable to deterioration and that special care should be taken as to its purchase and storage. With the object of ascertaining how far this supposition is justified by fact I have recently (says a writer in the “Pharmaceutical Journal”) determined volumetrically three samples of sulphite from ordinary stock—viz., the commercial, the recrystallised, and the anhydrous salts. In the first-named 94.5 per cent. of pure sulphite was indicated, the recrystallised showed 96.25 per cent., and the anhydrous 84 per cent. From this it would appear that for photographic purposes it is not necessary to use the recrystallised sulphite, which costs double the price of the commercial salt, a good sample of which should meet all requirements. The anhydrous salt compares unfavourably with the crystalline, probably on account of its not being absolutely free from water. This I have not, however, proved; but it would appear advisable not to reckon the anhydrous sulphite as being of twice the value of the crystalline, as it should be theoretically, but to take from 55 to 60 parts of the former as equivalent to 100 of the latter. [Surely twice is near enough.—Eds. “B.J.”]



## Answers to Correspondents.

All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.

Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.

Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., 24, Wellington Street, Strand, London, W.C.

For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.

### PHOTOGRAPHS REGISTERED:—

Carver, 6, Church Street, Maestog. Two Photographs of the Rev. Canon Maurice Kelly.

Waltenberg, 419, Bethnal Green Road, London, N.E. Photograph of William Kettle, Junior.

Hawley, Mayfield, Blyth Bridge, Stoke-on-Trent. Photograph entitled, "A Freak of Nature."

Elliott, 31, Wellington Road, Bearwood Road, Birmingham. Four Photographs of Combined Photographs and Drawings of Girl's Head.

Milne, 65, Cumberland Street, Edinburgh. Photograph of the Shop Front of J. H. Davidson & Co., Grocers, 14, Graham Street, Leith.

W. Britton, 50, Green Lanes, Stoke Newington, London, N. Two Photographs of the Mayor of Hornsey. Photograph of the Mayors of Hornsey.

TERIST.—Wellington and Ward, Elstree, Herts.

B. MISTRY.—The best publication we can suggest is the "Bulletin of Photography," 606-608, Sansom Street, Philadelphia, U.S.A.

F. R. (Ilford).—It is our custom to look after these matters ourselves in the cases where we wish to do so.

ENLARGING.—1. Is it necessary to have a condenser for daylight enlarging? 2. What lens do you recommend for enlarging? 3. Would you employ for a half-plate negative a condenser the same size, viz., 6½ in., say, to enlarge it to 24 x 18 in.?—W. B.

1. No. 2. The lens with which a negative is taken will usually do well for enlarging. 3. A half-plate negative requires a condenser at least 8½ in.

MARKINGS ON NEGATIVES.—Can you explain the cause of the white streaks in the sky arising from the top of the buildings in one, and telegraph post in the other? These pictures are taken on "Imperial" special rapid backed plates, and are developed with pyro and soda diluted developer in a "Rystos" tank.—F. H. W.

The phenomenon presented by your photographs is one of a fairly common and very interesting type. It is partly due to development in a perfectly still developer, and would not have been manifested in streaks if the developer had been kept in motion. In a flat dish it would probably have taken the simple form of a white outline round all dark objects. You have the outline, but owing to the vertical position of the plates and stillness of the developer streaks have also formed. Movement would have prevented the formation of such obvious streaks, but we doubt if the white outline can be avoided altogether, though a good deal probably depends on the developer used. If you carefully examine all dark objects where they are seen against a light half-tone, you will detect a pure white border surrounding the dark. In the negative there should be a corresponding dark border. The explanation is as follows: Where the developer is at work on a half-tone it is partly oxidised or exhausted, but the developer over a dark shadow is unaffected. If the developer is quite still the exhausted portion is replenished slowly from the bulk of the solution, but more rapidly where it adjoins developer that is doing no work at all. Therefore development proceeds more rapidly just on the immediate margins of the deep shadow. In your street scene such white borders are quite easily apparent, and in the other view the piers of the bridge show them very plainly. The streaks are evidently caused in the tank by the fresh developer from the shadows slowly diffusing in a straight current across the half-tone. We assume that the plates were

developed in the tank with their greatest length horizontal, and with the image inverted. We should be greatly obliged if you would inform us whether this was the case or not, as the phenomenon is one interesting to study.

MASTER AND APPRENTICE.—I should be glad if you would kindly inform me, through the medium of your paper, whether I could legally make any deductions from wages of an apprentice who makes it a practice of coming late to business in the morning.—APPRENTICE.

We are not sure that you can legally make deductions from the apprentice's wages for coming late to business. But if he misbehaves himself or neglects his duties you can bring him before a magistrate, who has full power to deal with such cases.

ENLARGED NEGATIVES DIRECT.—Can you tell me if there is any practical and sure method of making enlarged negatives direct? I have tried some methods which have been published, but failed entirely. Information will be thankfully received by an old reader.—J. GRIFFIN.

A pity you do not tell us which methods have failed you. Have you tried enlarging on a plate of "ordinary" speed and reversing by the persulphate method on page 838 of the "Almanac"?

E. J. BOWLES.—The Page-Croft Paper Company, Cooksey Road, Birmingham.

MEMO.—(1) MESSRS. Siebel and Co., 52, Bunhill Row, E.C., and the Tress Company, 4, Rathbone Place, W., both supply a studio instrument. (2) For cabinet portraiture the lens should be at least 10 inches; all the better if 12 or 14. (3) The references to Simplex were not preserved, consequently we cannot give them to you.

READER.—The "Videx" and "Soho" both have this movement. If you apply to Messrs. Marion and Co., Soho Square, W., and Adams and Co., 26, Charing Cross Road, W.C., you can obtain illustrated prospectuses.

ONE SOLUTION DEVELOPER.—(1) Can you give a one solution developer, metol hydroquinone formula, which will keep well for a considerable time? (2) I intend purchasing a ½-plate reflex camera, but am a little undecided what make, as they are so widely different in price. Several makes, such as Staley, Lancaster, Watson's, etc., about £12, and Adams' and Newman and Guardia, etc., about £40. What is the difference in the cameras, etc.? Can you advise?—N. O. D.

(1) The Velox metol-quinol formula ("Almanac," p. 854), if made up with the best chemicals, will keep for months in corked bottles. (2) The best advice we can give you now is that you look up our issue of June 14 last, in which you will find a review of practically every reflex on the market. If there are then any special points on which we can advise you we will be glad to do so. The higher-priced reflexes differ chiefly in the conveniences provided for rapid alteration of shutter speed, range of rise of front, etc. It is a question of what you want. We would suggest, too, that you consult the reviews and advertisements of reflex cameras in the "Almanac."

COPYRIGHT.—About thirty years ago a member of the firm we now represent obtained permission to photograph and publish an article of considerable historical interest, the owner bringing the subject into the studio and waiting while several negatives were made of it. A few years ago we published the same in postcard form. Can the present owner, the third in succession, prohibit us from publishing the same? We possess no written permit to publish, but the facts are as stated, and a member of the firm was present when permission was granted and the photographs made.—MCISLE.

You have every right to publish the photograph, unless it can be shown that your firm was paid in the first instance for taking the photograph.

F. S. C. (Bordeaux).—No such rules are published. Your best plan would be to address yourself to one of the English manufacturers, such as Wellington and Ward, or Ilford, Ltd.

K. ROBSON.—You had better address your query to the "English Mechanic," Clement's Inn, London, W.C. The subject is not in

our province at all. Your letter suggests that you are confusing block tin with pure tin. Block tin is only an extra quality of tin plate, and it can be worked just like ordinary tin plate.

**SIMPLEX.**—Practically any of the plates you name are suitable. They are all of the highest speed. We should say there is not much difference between them.

**ENLARGING QUERIES.**—(3) I have recently started to do my bromide enlarging with an enlarger, incandescent gas for the light, but I find that the results are very harsh and contrasty, especially as I have been used to working with a daylight enlarger. I use metol hydroquinone developer, 40 drops of 10 per cent. potass bromide solution to the 40 ounces. (4) Could you suggest a way to get softer results, either by using another developer or by altering the light? Also the name of a good book on bromide printing and enlarging?—H. M.

(1a) Yes, quite long enough. (1b) Not much to choose between the two as regards weight. (1c) For general usefulness outside of the studio we should certainly prefer A to B. (2) Quite the same as regards permanence; perhaps a little heavier in appearance, but with the rich quality of the print made in the ordinary way. (3) You are probably under-exposing, although a comparatively weak light tends to give stronger results. We recommend you to pick a rapid, soft-working bromide paper and use amidol as developer. (4) One of the spirit incandescent lights, such as the "Sol," would help you. About the best book we can suggest for your apparent difficulties is "Enlargements: Their Production and Finish," by G. Rodwell Smith (Hazell, Watson and Viney, ls.) (5) Certainly it may be used, but there is a certain amount of smoke, and a number of successive exposures could not be made without well ventilating the studio.

**POSTCARDS TO CUSTOMER'S ORDER.**—A lady customer has given me two photographs to copy her some postcards from. They are of her husband, who was a local celebrity and has just died. She tells me that she paid for the sitting in each case. Besides the order she has given me, she desires me to supply the shops in the district for sale. The photographer who took the originals has "copyright" printed on front of both mounts. Will you kindly tell me in next issue whether I can legally supply shops or not, now that I have her permission?—ANXIOUS.

If the photographer is actually the owner of copyright, the lady's permission will not indemnify you from the consequences of infringement. Surely you can judge for yourself whether she is the sort of person a photographer would photograph gratuitously in order to secure the ownership of the copyright, or, better, you can ask her to produce the photographer's receipt for the money paid to him for taking the photograph.

**EMULSION UTENSIL.**—We have just made a small press for experimental work, to break up emulsion ready to be washed. We have made the cylinder of copper, and the bottom is made of solid gun-metal perforated with  $\frac{1}{8}$  in. holes. The ram used to force the emulsion through is made of vulcanite. The whole operation of putting through the emulsion does not take more than five minutes. The formula used is a simple chloride bromide of silver emulsion, and no acids whatever used in its make. The chief point we want to know is, will these metals used in making the press affect the emulsion while it comes in contact with them? We take it if the press was to be used for fast plate emulsions it would be best to have it silvered.—S. J.

It is absolutely necessary to silver the emulsion press, as copper will certainly before long produce verdigris and attack the emulsion. The effect of not silvering will be to produce scum marks and streaks on the plates when coated.

**COLONIAL.**—1. The general commercial prosperity in the Argentine is very good now and improving. 2. Better try a daily journal in Buenos Aires, although positions of any importance are filled through shipping agents in London. 3. Operator and retoucher. 4. We refer you to Thomas Cook and Son. 5. We know of none in particular.

**SHAVIAN, W. G. WOOD, AND OTHERS.**—In our next.

**COLONY.**—1. Prospects are generally good, but those going out will probably have to rough it. 2. Yes; English and American styles are used. 3. We should say it would certainly be better to buy here.

**R. W.—Griffiths' Steam Works, Eyre Street Hill, Clerkenwell, E.C..**

**E. SHIVAS.**—1. We think you will find sufficient information for your purpose in the editorial article in the "B.J. Almanac," 1908, and in the abstracts from Dr. Mees' lecture at the Society of Arts which we published on January 17 and February 7 in the "B.J." The full text was published in the "Journal of the Royal Society of Arts" for January 18. 2. If an Autochrome is well dried and varnished with celluloid it will stand about half a minute's exposure in the lantern without any risk, but for an exposure of several minutes we should advise the use of a water trough between condenser and slide, especially if a powerful mixed jet is in use.

**EDWIN HADLEY.**—1. E. W. Foxlee, 22, Goldsmith Road, Acton, W. 2. Glooe metal polish, 2d. tin; terebine, 2oz.; salad oil, 2oz. The ingredients are to be well mixed and strained through fine muslin two or three times to remove any coarse particles.

**WAGES DISPUTED.**—At Christmas time I closed on Christmas day and New Year's day (it being the days generally recognised through the town), and had a notice to that effect posted in my windows, but one of my assistants did not turn up on Boxing Day. I called to know the cause, and the mother said her daughter thought she ought to have Boxing Day, but she would send her to business at one o'clock. To this I agreed. The assistant turns up at two o'clock, and flatly says that she has arranged to meet a friend, and cannot stop to work, and went away again. Next morning she turns up as usual, but I sent her home again, with the understanding that she had finished. Now this mother is suing me for a fortnight's wages. Can they make my pay?—E. P.

Yes; certainly they can. The girl was perfectly within her rights in acting as she did. Christmas Day and Boxing Day are both statutory holidays in England, and all employees are entitled to them without any deductions whatever from their wages. The girl must be paid for the Christmas week, and a week's wages in lieu of a week's notice.

**R. WALLIS.**—A "supplementary" lens of a single glass will affect the definition of a good lens. A proper lens consists of a cemented pair of glasses. You had best apply to Messrs. Sichel or Messrs. Griffin, who make a specialty of these lenses.

**LENS QUERY.**—I have offered to me a large portrait lens bearing the name of "Jamin, Paris." It is about 5 in. in diameter, and the front lens is somewhat smaller than the back. Its mount is of a different shape from that of English lenses. Will you please tell me if the lens is a good one, and what size picture it will take? I can buy the lens for about £6 or £7.—T. WILLS.

The lens must be a very old one—possibly fifty years. Of course, we cannot say whether it is a good one or not without testing it, but we may tell you that Jamin's lenses were in good repute about the time this one was made, and the firm made a good number of large lenses in its time. As you do not say the focal length of the instrument we can give no definite idea as to the size plate it will cover, but from your description we should think it will cover 15 x 12. The price asked for the lens is rather more than its present market value.

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## The British Journal of Photography

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## SUMMARY.

th of Mr. Horsley Hinton.—It is with very great regret that  
 announce the death of Mr. A. Horsley Hinton on Tuesday last,  
 short illness. A portrait and obituary notice of Mr. Hinton  
 on page 160.

Benjamin Stone, in presiding at the annual general meeting  
 National Record Association, drew attention to some of the  
 influences in modern photography. The report of the  
 A. Council is given on page 159.

Birmingham Society has held a successful exhibition. A  
 d review appears on page 161.

erman worker has recommended two alternative methods in  
 g plates for orthochromatic sensitiveness with simultaneous  
 drying. (P. 154.)

a recent meeting of a German society an indicator for the  
 tion of double exposures was described. (P. 158.)

e facts to be borne in mind in calculating the exposure of  
 ements are mentioned on page 155.

e notes on the purity of soda sulphite in reference to some  
 y published figures appear on page 154.

article on modifications of the method of testing the speed  
 tters recommended not long ago by Mr. Arthur Payne is  
 ted from a German contemporary. (P. 156.)

e further work has recently been done on the cause of the  
 ed Moser's images. (P. 154.)

urther patent for agar-agar paper has been taken out by  
 V. F. Cooper. (P. 163.)

ox cameras, a new printing process, and a method of finding  
 st time for the photography of a given subject are among  
 patents of the week. (P. 164.)

urther reference to the occurrence of white outlines round  
 objects in negatives developed in a tank, we publish a short  
 al, which gives some explanation of the phenomenon, although  
 gested conditions are not invariably the cause of the defect.  
 .)

hide toning is the subject of a long letter from Mr. R. E.  
 Smith which appears with other correspondence on page 169.

## EX CATHEDRA.

### Drying Negatives with Spirit.

In reference to our previous note on  
 this subject, our confrère, Herr Wolf  
 Czapek, points out that Dr. Lüppo-  
 Cramer, on page 73 of the "Photographische Rundschau,"  
 1907, has explained the milky appearance sometimes pro-  
 duced. Dr. Lüppo-Cramer stated that while the honey-  
 comb-like structure of gelatine cannot be detected under  
 normal conditions, yet it appears if the gelatine is coagu-  
 lated by alcohol, owing to the difference that then exists  
 between the refractive power of the walls of the cellulose  
 and their contents. On re-soaking the gelatine in water  
 the difference is destroyed, and the structure disappears.  
 This explanation is practically the same as that put for-  
 ward by Mr. F. F. Renwick in the letter published in our  
 issue of January 17, on page 53, and it certainly seems a  
 very probable one. Mr. Renwick suggested that the effect  
 could be obviated by not pushing the spirit-drying to the  
 limit. This is in accord with our own experience, for we  
 never meet with any trouble if the negative is simply  
 soaked in the spirit for a few minutes and then set up to  
 dry naturally. The trouble arises when several spirit  
 baths are employed in succession to extract as much of  
 the water as possible, and the drying is completed by heat.  
 If only one bath is employed it is unsafe to apply heat, as  
 the gelatine still contains sufficient water to render it  
 soluble; a whirler is, however, a very good and safe sub-  
 stitute for heat. In practice we find that rectified spirit,  
 "dried" with potassium carbonate can be used with safety,  
 if not applied more than once. It is expensive at the  
 start, but it can be used over and over again if a little  
 potash carbonate is kept in the bottle. Methylated spirit  
 of good quality can also be used, but there is always the  
 risk of trouble if the negative is subsequently submitted to  
 any chemical treatment.

\* \* \*

### Pre-Daguerrean

A curious note forms the concluding para-  
 graph in a recent article by Professor  
 von Weissenbach, of Leipsic. It is to the effect that the  
 writer has obtained from Professor Sulsén, of Dresden,  
 three prints (on salted paper) in order to prove that the  
 art of recording by the agency of light was understood  
 in Dresden nine years before Daguerre. We cannot help  
 wondering to whom Professor von Weissenbach thus  
 alludes in ascribing the authorship of a method of photo-  
 graphy comparable with that of Daguerre. The use of  
 paper or leather rendered sensitive with silver nitrate  
 was, of course, known to Wedgwood in 1801, and doubtless  
 subsequently to others. But when he mentions the  
 unknown pioneer in the same breath as Daguerre, our  
 author must have in mind the invention of a process of  
 producing lasting "sun-pictures." Are we to suppose that  
 when English and French photographers visit the Dresden

Exhibition next year it will be to inspect the work of one who predated not only Daguerre, but his colleague Niepce and his contemporary Fox Talbot!

**Orthochromatizing Plates By Bathing.** Apparently as a result of Herr Valenta's recent paper on alcoholic solutions of dyes for orthochromatic sensitisers ("B.J.," October 4, 1907), some further experiments in the same direction have been made by Herr Paul Thieme, and are described in the Berlin "Photographische Mitteilungen." It is found that plates sensitised in the alcohol bath must be rinsed with water, or they show spots from drops of the dye solution left on them. But if water is used for rinsing, the cheaper "denatured" spirit cannot be used for the dye bath. Hence Herr Thieme preferred to rinse with alcohol, which removes dye from the surface of the film, washes off particles of dust, and further accelerates the drying of the plates. Using a solution of the dye-sensitiser in water and rinsing in alcohol, the plates were found to dry in an hour and a half. The author, from a series of experiments, decides on one or other of two procedures:—(1) Sensitise in an aqueous dye bath and rinse in two successive baths of denatured spirits, the first to remove the larger proportion of dye and the second to remove drops of dye solution; (2) if very rapid drying is required, the plate, after being sensitised in an aqueous bath, is allowed to stand for thirty minutes, then bathed for five to six minutes in spirit, and then rinsed in a second bath of spirit.

#### The Analysis of Soda-Sulphite.

We recently published an extract from a contemporary journal devoted to matters chemical, in which the writer sought to prove that anhydrous soda-sulphite is not twice the strength of the crystalline variety, weight for weight. He tested three samples. A commercial sample showed 94.5 per cent. of pure sulphite; a recrystallised sample showed 96.25 per cent., and the anhydrous showed only 84 per cent. He suggested that the anhydrous sample probably showed up badly on account of its being not quite dry. Probably it was not, but the tests prove nothing in any case. A commercial sample of sulphite that shows 94.5 per cent. of pure sulphite is most unusually pure, and, therefore, the comparison is of no value. We have tested many varieties of sulphite, and have met with recrystallised varieties that only showed 84 per cent, while 96 per cent. is very unusual. A casual test of three samples only is quite valueless for comparative tests, and if this experimenter had taken all the varieties he could get of each quality and averaged the results, we have no doubt that he would have come to different conclusions, provided his tests were properly conducted. In any case, however, the volumetric testing of sodium sulphite is an operation that requires particular care, and it is not quite such a simple operation as many seem to imagine. We believe that some rely on a simple titration with iodine conducted in a somewhat casual fashion, and without taking any precautions against the effect of possible impurities. All sulphite contains alkali or alkaline salts, which, if allowed to remain, render the titration more or less uncertain, and 'hypo' is by no means an 'impossible' impurity, especially in a commercial sample from 'ordinary stock.' A high reading from what may reasonably be expected to be a poor sample is always suspicious, and we have grave doubts with regard to the accuracy of the test in the case of the commercial sample quoted.

#### Moser's Images.

In 1842 L.-F. Moser discovered that it was possible to obtain visible images on a polished glass of a coin or other metal object which had remained in contact therewith, or that by merely

writing on glass with a metal point, which did not scratch the glass. He further pointed out that actual contact between the metal and glass was not necessary, and the action he ascribed to "invisible light." In the following year Waidele ascribed the action to the gas occluded on the surface of the metal. This subject was investigated by Niepce de St. Victor, Laborde, Colson, and others, of whom ascribed the action to invisible light. W. Russell, in 1898, first published his researches on the action of wood and other organic substances on dry plates, and in the following year suggested that the effect was due to the hydrogen peroxide evolved. Lengyel had already suggested that the metal decomposed the atmospheric aqueous vapour, and that the hydrogen evolved formed the images. Blaas and Czermak suggested radiative activity, and Kahlbaum and Steffens suggested that the emanation was only caused by gravitation.

#### Positive and Negative Moser Rays.

Piltchikoff two years ago—1906—published an exhaustive paper on the subject, and opposed the view that the results were due either to metallic emanations or hydrogen peroxide. He upheld Moser's views, but differentiated between positive and negative rays. The former he called those which produced an invisible image on dry plates. These he found to be emitted by manganese, aluminium, zinc, cadmium, tellurium, selenium, iron, cobalt, nickel, boron, lead, antimony, tin, and colloidal silver. Negative rays were those emitted by osmium and tantalum, which reversed the previous light action. Copper and brass were found to be without any action. He also found that in absolutely dry air, or in a vacuum, very few metals emitted the rays, and that more were given off in damp air.

#### Ions, the True Cause.

Fräulein Légrády has now carried the subject much further, and ascribes the action to hydrogen ions. The full text of her paper appears in the current number of the "Zeitschrift für Wissenschaftliche Photographie." Sheets of metals were separated from dry plates by small glass rods, two millimetres thick, a plate being placed above and below the metal. The conclusions come to are that the metals *per se* have no action on dry plates, moisture being essential. Neither hydrogen peroxide nor metallic vapours are the cause, but ionised hydrogen. Many metals give two kinds of images, but in the same gaseous atmosphere the images are always the same. Black images above and below the metal are given by aluminium, magnesium, nickel, and zinc. Dark images above and below are given by silver, cadmium, manganese, and lead. Cobalt gives a black image on the upper plate and none on the lower. Gold, copper, iron, platinum, and mercury are without action. The practical application of the above facts lies, of course, in the construction of changing-boxes or other receptacles for dry plates.

#### Liquid Filters.

Liquid filters are probably only used for colour work in studios and occasionally in dark-room lamps. It is often assumed, however, that increase in concentration and increase in depth or thickness of the solution are reversible factors, an assumption founded on Beer's law that "increasing the concentration of a solution is equivalent to a like increase in thickness." Very little attention has been paid to this in photographic literature, but the researches of Walter, Nichols, Merritt, and Wick prove that this law does not hold good except for very dilute solutions. This subject was investigated at some length by Miss Wick last year, and her experiments prove that Walter's conclusions are correct. In



ry dilute solutions there is what he calls "complete solution," in which the molecules exist in a separate state. Above a certain concentration, however, the so-called "critical dilution," the colouring matter exists in "molecular groups," and the result is "incomplete" solution. The conclusion is that in the case of dilute solutions the coefficient of absorption increases in direct proportion to concentration. For concentrated solutions, this proportion fails, the concentration increasing more rapidly than the absorption.

\* \* \*

**Further confirmation.** The above facts are confirmed by a paper, in the current number of the *Physikalische Zeitschrift*, by Stanislaw Kalandek of the University. This experimenter has examined several dyes, which are used as photographic filters, such as methylene blue, crystal violet, eosine, etc., and his results, given in very voluminous tables and many diagrams, completely confirm the results of the above-mentioned investigators. Briefly, his conclusions are that increase of concentration is not proportional to a corresponding increase of thickness, and that increase of concentration causes a greater shift of the absorption than increase of the thickness of the film. Incidentally, it may be mentioned that Kalandek proves that when a dye is dissolved in a liquid of greater refractive index, there is a shift of the position of maximum absorption towards the red end of the spectrum. This is confirmatory of Kundt's law, which is usually quoted as an explanation of the shift of the sensitising maximum of a dye, compared to the absorption maximum of its solution.

\* \* \*

**Stains on collodion prints.** For some reason or other many workers seem to be troubled with what they call stains when using collodion papers, and we frequently receive specimens with requests for information as to cause and best method of prevention. Sometimes samples of unused paper are sent for test, in which case our own prints are generally quite free from stain, and the paper shows no sign of defective manufacture. The only thing clear, as a rule, is that the trouble is due to some local circumstance that we are quite unable to indicate without a fairly intimate knowledge of the complainant's methods and of his work-room. Some examples are clearly due to dirt, but a fairly common form of mark is not what we should call a stain at all. It is much more like a partly bleached out patch, and the inference that it is due to chemical cause is obvious. This subject was discussed in our columns about two years ago, and a very prolific source of trouble was indicated by several of our correspondents. That cause is drying the prints between blotting-papers. In some cases the blotting-paper is in use at the start, in others it has gathered impurities by use. A sheet that has been used upon one imperfectly dried or washed print may very easily damage all that are subsequently brought into contact with it. It is very noticeable that these markings are almost peculiar to collodion prints, with which the use of blotting-paper is usual, and that the complaints generally concern self-drying papers, with which the fixing is very likely to be undisturbed. The fact that stains can be, and are, caused in this way is undoubted, but whether this is the cause of any particular marking on some print sent to us, we, of course, cannot determine. As a rule, we are not told whether blotting-paper has been used or not. We suggest that correspondents should make the following test themselves before asking for information. Cut a print in half, and let one half dry naturally while the other is dried with the blotting-paper used for previously spoilt prints. This is a test that they alone can make, and it should settle the point at once.

## WHITE OUTLINES ROUND DARK OBJECTS IN PRINTS FROM DRY-PLATE NEGATIVES.

LAST week, in our "Answers to Correspondents" column, we dealt with a familiar phenomenon that, owing to peculiar circumstances, had assumed a very unusual form. The effect was interesting in itself, but also by reason of the fact that it clearly indicated which of two explanations very frequently put forward is the correct one. When a dark object, such as a chimney-stack, is backed in a photograph by a light background, such as the sky, it often happens that a quite white outline is visible all round the dark object. Two explanations have been offered of this appearance. One is that it is an effect due to the relief of the image. The white line is said to be produced in printing owing to some optical conditions that we confess we have never been able to understand. The other explanation is the one we gave in our answer, and that—namely, that the oxidised developer over the light tone is replenished from the unused developer in contact with the part of the film representing the dark object, as well as from the bulk of the solution, hence development in the light tone proceeds more rapidly in the immediate neighbourhood of the dark object. In the photographs submitted to us the white line was clearly apparent, but in addition to it there was also a long white streamer ascending from every dark object in the view. For example, in one case a telegraph pole not only showed the white border line, but also a long white streamer ascending from its top right over the sky, the form of the streamer being just that of the vertical shadow that such a pole casts on a misty night when a light is behind it. In these photographs a similar streamer of greater or lesser length was visible over every dark object, so that all suggestions of leaky dark slides, etc., were out of the question. In every case the streamer was clearly a development of the white border effect, and therefore it was apparent that the optical theory of the white border could not hold good. As a matter of fact the plates had all been slowly developed vertically in a tank with a diluted pyro-soda developer, and it was quite evident that these unusual streamers simply showed the course taken by the fresh developer from the shadows as it diffused into the exhausted developer over the light. If the developer had been kept in motion such an effect could not have been produced. This suggests that tank development may at times give very undesirable effects, but this particular effect being so unusual, and tank development being so common, we are inclined to think that the developer used must in some way affect the result. The white border line does not seem to be invariably produced even when the conditions apparently favour it. In theory we might expect it to appear in all cases when the developer is not kept in motion, but we do not think it does always put in an appearance in these circumstances.

## EXPOSURE WITH VARYING SCALES OF ENLARGEMENT.

It is very often supposed that if the exposure for one particular degree of enlargement is once accurately determined, then the exposure for a different size image can be ascertained correctly by a simple calculation. It can be, to a certain fairly close degree of approximation, if the conditions are favourable and the change in scale is not very great, but it very often happens that the conditions are so unfavourable as to render the results quite misleading, and in very few cases are they absolutely correct. When the scale is varied the distance from lens to image, and also that from lens to negative, are both altered. These changes are the only ones taken into account in the calculations, but there are others that may affect the result

seriously. In the first place, if the alteration of scale is anything considerable, the light has to be readjusted; it must be drawn back from the condenser if the scale is increased, and pushed nearer to it if the scale is reduced. This means that the condenser collects either less or more light, and that the negative is therefore either less strongly or more strongly illuminated, which factors are left out of account in the calculations. Then, again, if the change in scales is only slight, it may not be necessary to move the light at all, but the projecting lens will have to be racked, either farther from or nearer to the negative, with the result that it intersects the cone of light from the condenser in a different place. If in one position it only just allows the cone to pass through; in a nearer position some of the light will be cut off by the lens mount, and less will reach the print. By drawing the light back (to narrow the cone) we remedy this defect at the expense of reducing the brilliancy of the illumination of the negative, so little is gained. It is obvious that the diameter of the projecting lens is an important factor, but as anastigmats

of small diameter are more popular than large diameter lenses of inferior correction, the conditions described often occur. Yet another difficulty arises when the lens is racked out to reduce the scale of the image. The light is then brought nearer the condenser, but the gain in illumination is more or less counteracted by the fact that the cone of light from the condenser then becomes so large in diameter that it will not pass through any ordinary size lens. Properly a different condenser of larger focal length should be used for very long extensions, but, as a rule, the ordinary enlarging lantern is only provided with one condenser, which has to serve for all purposes, from making a 15 by 12 enlargement down to the production of a lantern slide. So far as evenness of illumination is concerned, the one condenser will serve well, but it is not adapted to give a brilliant illumination in all circumstances, hence calculated variations of exposure are certain to break down. It is then necessary for the worker to re-ascertain the exposure by the usual methods if he wishes to vary the scale to any considerable extent.

## TESTS OF INSTANTANEOUS SHUTTERS WITH AND WITHOUT APPARATUS.

[Success in instantaneous work is as much dependent on knowing accurately, or within reasonable limits, the actual speeds of the shutter as knowing the speed of the moving object. There are, of course, many methods of timing shutters dependent on the use of more or less elaborate apparatus, but most of them are beyond the reach of the average worker; possibly, therefore, the following suggestions by M. Frank in "Photographische Korrespondenz" may be useful.—Eds. "B.J."]

THE first method is based on the comparison of the densities obtained by exposing a plate on a well-illuminated white surface for varying times, and although the idea is not original, it is worth attention.

One half of the plate is to be covered with an opaque card in the dark-slide, and the plate exposed in the camera on an evenly illuminated white card for exactly one second. The card should then be shifted so as to cover the exposed half of the plate and it will be found more convenient if the card is placed at right angles to the direction of movement of the sliding shutter of the dark-slide, the dark-slide being again placed in the camera, and the shutter withdrawn for one-tenth of its length, and the instantaneous shutter released ten times. The dark-slide shutter should again be lifted one-tenth, and the shutter again released ten times, and this repeated till the whole of the plate has been exposed. The result will be on development as shown in the following diagram—that is, one-half of the plate will show

10	20	30	40	50	60	70	80	90	100	Instantaneous Exposure.
1 Second Exposure.										

a density obtained from one second's exposure, whilst the other will show a series of densities obtained by 10, 20, 40, etc., exposures through the shutter. It will then be easily seen how many times the shutter has to be released to give density equal to one second's exposure, and this will give the speed of the shutter. For instance, if the density given by 90 shutter exposures was the same as that from one second's exposure, then the speed of the shutters was one-ninetieth of a second.

The disadvantages of this method are that it requires considerable time, and if the shutter is one of high speeds, such as 1/800th of a second, so many exposures being effected so rapidly one after the other may put a strain on the shutter mechanism.

A preferable plan is to utilise the well-known law of the increase or decrease of the light by increasing or decreasing the diaphragm aperture. To utilise this principle it is only necessary to release the shutter once with a large aperture diaphragm, and then to give successive exposures, each of one second's duration, with a series of diaphragm apertures in known ratio.

If, for instance, the lens was working at F/4 as the largest aperture, an instantaneous exposure would be made with the shutter on one half of the plate at this aperture, and on the other half would be impressed a series of exposures each of exactly one second's duration, with the various diaphragms. On development one would have a negative which may be diagrammatically represented as follows:—

One second's exposure at							
F/12	F/16	F/20	F/24	F/28	F/32	F/36	F/40
9 times.	16 times.	25 times.	36 times.	49 times.	64 times.	81 times.	100 times.
Instantaneous exposure at F/4.							

If on examination of the negative it was found that the density on the field exposed with F/32 was the same density as the instantaneous exposure at F/4, then obviously the shutter was working at 1/64th of a second.

Obviously any series of diaphragms can be used, and this method is much simpler than the first. The only advantage is that one must use a mask with a different aperture for each exposure, but this can be easily overcome.



Instead of using the above methods with rectangular fields it is possible to use a central circle for the instantaneous exposure with the largest aperture, and then, covering this up, to use an outer concentric mask with a cut-out sector, as shown in Figs. 1 and 2.

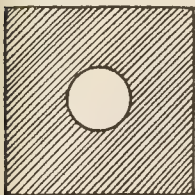


Fig. 1.

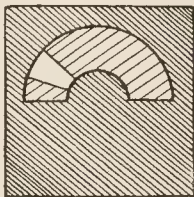


Fig. 2.

If the shutter works at such high speeds as to require very small diaphragm apertures, which are not advisable, then the shutter may be released a given number of times, and this used as a factor in estimating the final results. For instance, supposing that the shutter worked at 1-1,000th of a second, and it is let off ten times, the density would be equivalent to an exposure of 1-100th of a second.\* If, then, this were adopted, and the resultant negative the density with F/32 was equal to that given by the shutter exposure, the latter would be not 1-64th, but 1-640th, because ten exposures, each of 1-1,000th of a second are given.

It is also possible to combine the two methods by exposing the whole half of the plate for exactly one second, not with F/4, but with F/12.6. As this stop only passes one-tenth of the light of F/4, the exposure will be equal to one-tenth of a second with F/4. It will not then be necessary to expose the strips ten times with

Theoretically this argument is erroneous, as the result of a series of brief intermittent exposures is not exactly comparable to one exposure of a length equal to the sum of many intermittent exposures. Practically the point may be neglected. Eds. "B.J."

the shutter, but only once. Also, instead of exposing for one second at F/12.6 (1-10th of a second at F/4) an exposure of ten seconds at F/40 can be given, and greater accuracy in timing thus secured. As an exposure of one second at F/40 equals 1-100th at F/4, the method is capable of application to times shorter than 1-100th of a second.

The use of this method, with varying stop apertures, is less accurate for diaphragm shutters than for those working in front of or behind the lens, or immediately in front of the plate.

The old methods of photographing a rotating wheel with a white or brilliant object on the periphery may be used. The speed of rotation should be exactly one second, and if an exposure be made through the shutter, the length of the arc of the peripheral object to the whole circle will give the duration of the exposure. Obviously, the length of the white object must be deducted from the length of the arc, but when mirrors in ball form are used this is not necessary. This principle may be carried out in many ways. One may, for instance, use the back wheel of a bicycle, on the edge and centre of which is fastened a bright or white object, the wheel being revolved exactly once a second by means of the pedal crank. It is quite possible, too, for a man to swing a white stick in front of a dark cloth, using the shoulder as the centre. In place of the stick a piece of burning magnesium ribbon may be used in a perfectly dark room. Black circles with a white radius may also be used, or a series of small silvered balls may take the place of the white radius.

The principle of a dropping object may also be employed, and in this case it is necessary either to use a table of the rate of dropping or employ a somewhat tedious mathematical calculation of the increasing acceleration of the fall due to gravity.

All measurements with shutters made with a lens are inaccurate in so far as they only apply to the actual lens used. As (with individual lenses) the decrease of illumination varies towards the edges so will the length of the arc of a moving object vary as this falls nearer to or further from the edge of the plate. The differences are not so great, however, as to be of much moment from a practical point of view.

MAX FRANK.

## ON THE COLOUR OF UNTONED PHOTOGRAPHIC FILMS.

(A Paper in "Eder's Jahrbuch.")

Experiments first begun with Dr. Ed. Schloemann\* have given results which may perhaps be useful practically, as it is possible to obtain very brilliant coloured films of absolute permanency. The duration depends probably, as was suggested in the previous paper, on an optical resonance process in the silver-gelatin system, which is naturally completely insensitive to light, oxygen, etc.

A fine-grained silver bromide emulsion which, depending on the exposure and time of development, will give with certainty the following deep saturated colours by transparency is very suitable.

### DEVELOPING SUBSTANCE.

#### FERROUS OXALATE.

Red.  
Orange.  
Yellow.  
Green.

#### ADUROL.

Ruby Red.  
Blue.  
Violet.  
Purple.

With ferrous oxalate blue and purple tones can sometimes be obtained, but they are not very pure.

The colours seen by reflected light, in the case of the red films, is distinctly green. With the others the complementary colour is less distinct; sometimes some of the films, for instance certain blues, appear black by reflected light.

The emulsion has a fairly fine grain and low sensitiveness; it can be manipulated without a dark-room.† Plates coated with it give good density and beautiful colour effects when used as transparencies. Papers coated with the emulsion show, when fully developed,

complementary colours in the high-lights and shadows, for instance, red high-lights and green shadows, as the former gives practically the colours by transmitted and the latter by reflected light.

The colours alter when the films are soaked in water, but this can be prevented by strongly hardening. Microscopic examination shows the following structure of the films in the dry and the wet

Colour of the film.	Dry.		Wet.
	Ground.	Grain.	
Red.....	Red.....	Black.....	Unchanged.
Yellow.....	Yellow.....	".....	"
Green.....	Green.....	".....	"
Blue.....	Colourless to bright blue	Brown black...	Red "Black.

No change of colour appears when the film is carefully scratched off, melted, and diluted with five times its volume of 5 per cent. solution of gelatine, and again coated. The purpose of this is to increase the distance of the grains or clots.

We have also tried to destroy the clots by boiling the film for five minutes. After cooling and again coating the same colours appeared. The clots must therefore have considerable stability. Treatment of the films with sodium and calcium chlorides had no effect.

Intensification with silver (physical) developers deepens the colour with a slight change. The following changes were obtained:—

Bright red → deep red.  
Bright green → dark green.  
Yellow → orange → red.  
Blue → dark violet.

Reduction generally causes a lessening of the saturation with the

\* "Eder's Jahrbuch," 1906, p. 146.

† From this statement, and from the great variation in colours obtainable, one would be inclined to hazard the statement that the emulsion is one of the well-known "gaslight" varieties. These are usually chloride or chloro-bromide emulsions. Eds. "B.J."

blue, green, and yellow films. This occurred with those films developed with ferrous oxalate. These ruby red films developed with adurol showed striking changes with various reducers, as follows:—

Reducer.	Colour after reduction and drying.
Farmers .....	Bright red.
Ceric sulphate .....	"
Potassio-ferric oxalate .....	Crimson to red violet.
Ammonium persulphate .....	Blue violet (seldom crimson).

The very remarkable changes of colour after treatment with persulphate led us to examine the reduced films more carefully. Whilst

most of them showed little change the blue plate obtained from ruby red preparation gave the following results:—

Transmitted colour .....	Blue Plate.	
	Dry.	Wet.
Ground .....	Blue .....	Red.
Grain .....	Colourless .....	Red.
	Blue .....	Black.

The reduced plates, when treated with a silver physical intensifier gave a more saturated colour; the blue plate obtained by reduction with ammonium persulphate did not give the original ruby red, but rather a dark violet.

DR. KARL SCHAUER.

## AN INDICATOR FOR THE PREVENTION OF DOUBLE EXPOSURES.

In a paper before the last meeting of the "Deutschen Photographen Verein," held at Bremen, a professional photographer, Herr Ed.

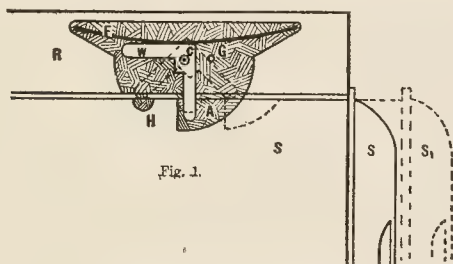


Fig. 1.

Schutze, of Schöningen, described the following attachment for dark slides of either the book or solid pattern, whereby the shutter is

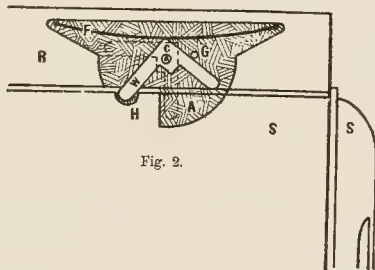


Fig. 2.

locked after it has once been withdrawn. The diagrams of the mechanism are from the "Deutschen Photographen-Zeitung."

Fig. 1 shows the shutter of the dark slide closed, the dotted lines

indicating its position when partly withdrawn. In this latter case the angle piece, WC, has turned on the pin C, and has brought the other leg of the angle piece into the slot H (see dotted lines at H), pushing the shutter home after exposure, the leg W remains in (Fig. 2), and prevents a second withdrawal of the shutter.

Figs. 3, 4, and 5 show a similar device applied to the metal slide with pull-out shutters. A spring, F, fixed to a pin S, is attached

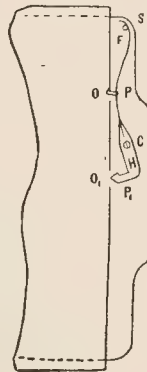


Fig. 3.

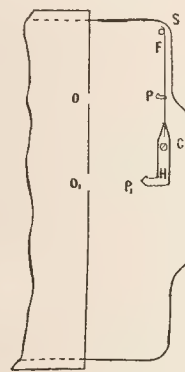


Fig. 4.

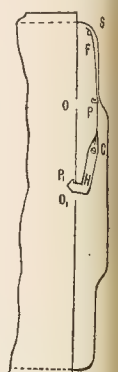


Fig. 5.

the hook, H. At P is a small catch, which snaps into the aperture of the spring being pressed down. When the shutter is withdrawn (Fig. 4) the catch P springs out, the spring F straightens itself, and on the shutter being pushed in (Fig. 5) the other leg of the angle piece, H, snaps with the other hook, P, into the opening O, of the shutter, with the result that the dark slide cannot be again opened unless the hook P is released from O, by pressure with the finger on P, whereby the small catch is pressed into the aperture O.

**ERRATUM.**—In our notice of Messrs. Staley's new catalogue last week a literal error of "lens" instead of "list" made it appear that an actual objective might be obtained for the sum of one penny. Much as Messrs. Staley have done in offering high-class lenses at moderate prices, they are disposed to regard the above figure as overstepping the mark.

**AFFILIATION OF PHOTOGRAPHIC SOCIETIES.**—The Secretary of the affiliation writes:—"The newly-elected executive held its first meeting on Friday evening, February 21, 1908. Mr. P. Bale Rider, representing the Birmingham Society, was unanimously elected chairman of the committee for the coming year. The continued increase in the number of societies joining the affiliation is very gratifying, and the committee are systemising the increasing work by forming themselves into sub-committees, each having its special work to look after. Important matters were brought before the meeting, and new arrangements are being concluded with the parent society as to the clerical work involved. Dr. A. R. F.

Evershed has been appointed editor of the "Red Book," and arrangements are being made for a combined outing of affiliated societies early in May, when the North London Society will act as host.

**CINEMATOGRAPH PICTURES OF PHYSICAL EXPERIMENTS.**—Mr. Martin Duncan, who, in conjunction with Mr. Hovenden, has been experimenting with reproductions of physical phenomena for the past five years, has just completed a series of pictures which will be shown for the first time at a series of lectures which will shortly be given by Mr. Hovenden at the London Institution. The cinematograph apparatus originally used by Mr. Duncan was not of sufficiently perfect design to give the exceedingly accurate results that were necessary to demonstrate these phenomena, and the films obtained with it were of little value, from a purely scientific point of view; but at the beginning of this year Mr. Duncan obtained a satisfactory apparatus, constructed specially for him by Mr. Arthur Newmann, with which he was able to obtain results entirely satisfactory.



## THE NATIONAL PHOTOGRAPHIC RECORD ASSOCIATION.

At the annual general meeting of the National Record Association was held on Tuesday afternoon last, February 25, when the president, Sir Benjamin Stone, entertained a company of ladies and gentlemen at the Midland Hotel, St. Pancras Station.

Sir Benjamin Stone, in proposing the adoption of the report, delivered a short address on the present position of survey work on some general tendencies in photography. He thought that the report as to the work of the National Association and that of the societies who were locally engaged with the same object was satisfactory, though he felt that the public had not begun to understand it was being done. The labours of those who were now making record photographs would be better appreciated by future generations than they were by those now living.

During the past few years, proceeded Sir Benjamin, the daily press, by its reproductions of photographs of passing events, had constituted itself in some measure an instrument of photographic record, but its work was done so hurriedly that it was usually very faulty, and, moreover, a print on paper such as daily journals were printed on could not be regarded as permanent. A further self-constituted exponent of record photography was the traveller, who with little knowledge of photography returned home from his rambles with photographic souvenirs of the places he had visited. These obtained a fictitious value in his eyes, and so led him to write a periphrasis (to go with them), which was even worse in its way than the photographs. Sir Benjamin Stone deplored the present-day tendencies which made for a lower standard of photography. There were the small prizes awarded in photographic society exhibitions. The work of anyone who had received such a prize was unfortunately regarded as necessarily good. Another cause of bad photography was the award of prizes by daily and other papers for the most miscellaneous subjects, photographed in many cases by persons who had no knowledge of the proper procedure.

He (Sir Benjamin) viewed the progress of record photography with the greatest solicitude, because he believed it to be as useful a work in which anyone could engage. He looked forward to the time when photography would be largely and officially employed by some central organisation, which would distribute throughout the land for educational purposes copies of photographs which would be a part of the history of the world.

In seconding the adoption of the report, Mr. C. E. Fagan mentioned the desirability of classifying and making more accessible for inspection the 4,000 photographs already deposited in the British Museum. He referred to the valuable work done by Sir Benjamin Stone in making photographic copies of objects and specimens in the South Kensington Museum. Such work was certain to prove of national use.

Mr. Topley, in proposing a vote of thanks to the council, hoped that steps would be taken to afford intercommunication between the various bodies engaged in record work.

Mr. Hector Maclean, in seconding, suggested that an excursion-isting of the Association would be productive of good.

Sir Benjamin Stone was re-elected president on the proposition of Rev. F. C. Lambert, seconded by Dr. Woodward.

Other propositions and votes of thanks brought the meeting to a close.

The following is the report of the Council:—

The Council of the National Photographic Record Association have the pleasure of presenting their Tenth Report, and it is with satisfaction to all to note, since the formation of our Association in 1897, the growing interest taken in Survey Work not only in our own country but in the Colonies and abroad. Our own collection of prints deposited in the British Museum now numbers 4,162, and in addition to this many other Societies throughout the country have deposited large collections with their local Museums and Libraries.

Since the last Report we have received for our own collection 1,000 prints, 100 from our President, Sir Benjamin Stone, including a series of that most historical mansion, Holland House, built in 1697, and in which have resided Lord-General Fairfax, J. Addison, etc. Audley End, another historical mansion near Saffron Walden, referred to by Pepys, who seems to have been particularly struck by the cellars—"where we went down and drank much of liquor; indeed, the cellars are fine"—also of Hengrave Hall,

Suffolk, Little Aston Hall, Perry Hall, and New Hall, Warwickshire. From Colchester, part of the Castle and the ruins of St. Botolph's Priory; Layer Marney, the Towers and the Church and Marney Tombs; Cambridge, King's College and Trumpington St.; Bury St. Edmunds, the Abbey Gate House, etc., some of the old houses of Sutton Coldfield; Church at Hoar Cross with its fine screen; Clare Church with the sundial and its quaint inscription, "go about your business"; Copford Church, Essex, North Door upon which remains of human skin were discovered, and some fine examples of old plaster work on the fronts of old houses at Clare, Suffolk, and Saffron Walden, and the historically interesting Church of Navesyn, Ridware, containing the Chadwick family Memorial, the tombs of Sir R. Malveysin and Sir W. Handsacre, slain at the battle near Shrewsbury, July, 1403; and a group of the German Burgomasters on the terrace of the Houses of Parliament, May 15th, 1906.

Mrs. Catherine Weed Ward has made a further contribution of 47 Prints, mainly a continuation of her series of fonts, and include photographs taken in Somerset, Warwick, Gloucestershire, Shropshire, Devon, Exeter, and Hertfordshire.

From Mr. G. Bingley we have received a very complete set of 19 prints of the old Church of St. John's, Leeds, including photographs of the wood carving on pulpit, pew ends, and panels.

Mr. E. Scamell has sent in 24 prints of the Temple Church, London, and monuments of Bishop Everden, Earls of Pembroke, and various Knight Crusaders.

Mr. H. W. Fincham has sent in some prints of the Warden's House, Christ's Hospital, pulled down April, 1907, and also an interesting copy of a drawing by J. Cleghorn, 1817, of the old Turnpike Gate which stood in Farrington Road.

Mr. H. Pope has forwarded 11 prints, including views of Wilberforce House, Battersea, where the Committee for the Abolition of slavery used to meet.

Miss Niblett has again added to our collection, including portrait of John Lee, one of the original Chartists, and his house, and the school-house at the Chartist settlement at Redmarley D'Abitot, Worcestershire.

From Mr. Collinge 10 prints, including views of the house at Hoole, Lancashire, where the Rev. J. Horrox observed the transit of Venus in 1639, and views of Astley Hall, Lancashire, where Oliver Cromwell slept. From Mr. O. W. F. Thomas prints of Haddon Hall and Wingfield Manor; Mr. Blinco, a series of the cross at Leighton Buzzard; one by Mr. E. Pater of an interesting old fireplace at Wycollar Hall, Lancashire; and two sets of present day work and workmen, one by Miss Wall, constructing the electric tramway at Southport, and one set from Mr. Marshall, the making of a horse-shoe; and 59 from the Hon. Secretary, of the Churches of Essex and Sussex, and of the Leez Priory, Essex, founded in 1229, and granted to Sir R. Rich, Solicitor-General, created in 1547 Baron Rich of Leez.

Many important Survey Societies are now at work. We would refer to the Photographic Survey of Warwickshire, with headquarters at Birmingham; Photographic Survey of Edinburgh and District, Secretary, J. Oliver; Photographic Survey of Essex, Miller Christy, (F.L.S.), President, V. Taylor, Secretary, who held their annual meeting at Kelvedon last June, when an address was given by Sir Benjamin Stone; Photographic Survey of Kent, H. E. Turner, Hon. Secretary; Photographic Survey and Record of Surrey, President, Hon. Henry Cubitt, who have, according to their last report, a collection of 2,340 prints deposited at the Public Library, Town Hall, Croydon, and that the public are now beginning to appreciate record work is proved by the fact that during the year there have been many hundreds of references to the collection; Photographic Survey of Sussex, President, Duke of Norfolk, their collection of prints, negatives, and lantern slides, together over 2,000, are deposited at the Brighton Public Library.

The Photographic Survey of Worcestershire, Mr. W. Harris, Hon. Sec., and other Societies in Herefordshire, Yorkshire, Leicestershire, etc.; also many of the Photographic Societies have instituted Survey Sections. The North Middlesex Photographic Society are forming a good collection of the neighbourhood of Hornsey and district; the prints are deposited at the Public Library, Hornsey. And the Southampton Camera Club are working to obtain a thorough survey of the town, which contains so many interesting old bits. Although so much work is in progress, it must still be a source of

regret that such a mine of wealth as is in the possession of the amateur photographer still remains untouched, neglected, and of no possible use to the public, and we would again urge all photographers to look through their stock of negatives, and forward prints either to us or to their local collections, as, even if the prints may not be of first quality as photographs, they may in time be invaluable as a record.

The programme has just been issued of a most important Photographic Exhibition, to be held at Dresden, in 1909, under the patronage of His Majesty King Frederick Augustus of Saxony, and the President of the Committee, His Royal Highness Prince John George Duke of Saxony, in which exhibition will be a section devoted to Record Work. The English Committee have referred this matter to us to select a representative collection of the work done in this country, and we trust this will do much to stimulate the interest in the subject, not only here, but on the Continent.

With regard to the negatives bequeathed to the Association by the late Mr. R. P. Brereton, referred to in our last report, prints from them are deposited in the British Museum in the MSS. Room, and the negatives have been deposited in the Museum of the Architectural Association, and are, we have been assured, of great value to the students.

The Association desires to record its thanks to the Press for the many notices they have given of the work, and especially to the Proprietors and Editor, Mr. G. E. Brown, of "The British Journal of Photography," for having arranged an Exhibition of Record Work at their offices in Wellington Street, last April and May, when we exhibited 108 prints of miscellaneous subjects to illustrate different phases of the work, and prints were lent by Sir Benjamin Stone, Mrs. Wood, Messrs. H. W. Finchan, G. Bingley, E. Scamell, the Hon. Sec., and the late Mr. Armytage.

We would again appeal to the public for liberal support, as with a strong fund to draw upon, we know of many professional men having large numbers of valuable negatives from which we could obtain prints at cost price, and we would again urge the amateurs to contribute freely prints from any suitable negatives they may have in their possession.

#### THE SCOTTISH FEDERATION ANNUAL MEETING.

The fifth annual meeting of the Scottish Photographic Federation was held in the Grand Hotel, Aberdeen, after the opening of the Salon. There was a good attendance of delegates and associates, presided over by Mr. S. Stewart, F.I.C. (Kirkcaldy Society), vice-president of the Federation.

The secretary submitted a report, which showed the maintenance of interest in the various branches of the Federation's work. The treasurer's annual financial statement showed a balance in favour of the Federation of £35. It was decided to leave the settlement of the locale of the next Salon, and also the selection of president, to the Council.

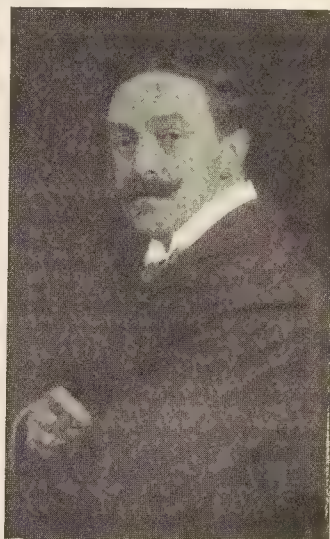
Office bearers for the season were elected as follows:—Vice-presidents, Frederick W. Kay, Aberdeen Association, and A. Symon, M.A., B.Sc., Wishaw Society; secretary, John B. MacLachlan, Blairgowrie and District; treasurer, Archibald Campbell, Dundee and East of Scotland; auditors, J. Murdoch, C.A., and R. C. Thomson; council, R. Milne, Paisley Philosophical Institute (Photo section); R. Marshall, Grangemouth; W. H. Wilson, Glasgow Southern; Vanessa C. Baird, Dundee and East of Scotland; J. D. Ross, Brechin; J. Bentley Philip, Aberdeen Century; R. Thomson, Midlothian; and Robert K. Holmes (associate). It was agreed that the annual excursion be held at Stirling. At the Council meeting held afterwards J. D. Ross was unanimously re-elected portfolio secretary, to fill the vacancy caused by the retirement of Dan Dunlop; Robert Marshall was appointed lantern slide secretary; Mr. P. D. Nairn was appointed excursion secretary.

**SCOTTISH NATIONAL EXHIBITION.**—In regard to the photographic section of the forthcoming Scottish National Exhibition, Mr. W. Crooke, of Edinburgh, asks us to say that application for forms should be made to the manager, 45, York Place, Edinburgh, and must be returned to him by March 1. All exhibits must be delivered by April 1.

#### DEATH OF MR. HORSLEY HINTON.

Our readers and photographers throughout the world will be surprised and shocked at the announcement of the death of Mr. Horsley Hinton, which took place on Tuesday last at his home Woodford, Essex, after an illness of only a few days. Mr. H. returned last week from Aberdeen, where he had visited the Scottish Salon. In journeying home, it is supposed, he caught a chill, which showed such serious signs as to compel him to cancel several engagements. His condition developed still more alarming symptoms, and death, reported to be due to brain fever, took place on Tuesday morning last, at 10 o'clock. At the time of his death Mr. Hinton was forty-five years of age.

In the death of Alfred Horsley Hinton the photographic world loses a dominating personality and an indefatigable worker. For the past fifteen years Mr. Hinton, as editor of the "Amateur Photographer," writer, lecturer, and organiser, has taken an important share in every movement which has stirred the ranks of photographers. Entering photography through a commercial firm of dealers in photographic goods in the City of London, he at once showed aptitude for writing and his championship of photography as a branch of fine art by editing the "Photographic Art Journal."



Photograph by [Fredk. H. Evans.  
THE LATE A. HORSLEY HINTON.

periodical which ran for four years. During this period Mr. Hinton's writings on photography as an art appeared in many publications and his unremitting claims for the recognition of the camera as a means of pictorial expression did not lack the productions of his own instrument to give them force. Apostles of pictorialism in photography there had been before, but none who so persistently and forcefully, with camera and pen, waged war against those who would have denied photography a place amongst the arts. Mr. Hinton was more than an important factor in the movement towards what is known as "pictorial photography." He was essentially its creator and he popularised it among the large body of amateur photographers whom he could address week by week. Himself a skilled worker in the photographic processes, Mr. Hinton's writings, especially in the earlier part of his career, were distinguished by the communication of much detail of manipulation, conveyed with a literary style of considerable charm and vigour. In recent years more engrossing duties compelled him to photograph less and write more, and his signature therefore appeared most frequently over appreciation of the work of others, who, but for his encouragement, would never have applied the camera to pictorial ends.

On the inauguration of the Photographic Salon Mr. Hinton was one of its most enthusiastic supporters, and for some years, after the death of Mr. H. P. Robinson, its moving spirit.



Hinton's writings were not confined to photographic periodicals. He was a regular contributor to the daily and weekly newspapers, and his article on "Pictorial Photography" in the "Encyclopædia Britannica" was from his pen, and he was the author of a number of text-books, several of which have enjoyed a wide reading, and have been translated into other languages.

For those who knew him personally the shock comes with a dull, lingering sense of personal loss, but behind and beyond that is the feeling of the great loss to the photographic world. Few men, in the walk of life, have combined such versatility, consistent quality, and enormous quantity of personal output. While much of his life was before the public, there was much, also, with which he was not publicly associated, and few people, possibly no one, can have any correct idea of all that he achieved. His writings alone would have been a creditable output for any man; but, in addition, he was an unusually strong and consistent pictorial photographer, an accomplished and prolific draughtsman-illustrator, and an organ and administrator in exhibition and society work to an extent not recognised by few. His death lends a pathetic interest to the last conversation we had with him, in which he spoke of the prospect of another fifteen years of crowded life. Mr. Hinton was a lover of his home and his garden, and one constant vision of his future when he would be able to spend more time in those genial surroundings. Much of what should have been his leisure was spent in honorary work for photographic associations, for he never unsparing of his help when it was asked of him. His sensitive nature led him, at times, to both give and take more than was intended, and his unflinching character made him persistent in what he believed to be right. In photographic matters he was involved in many a stern fight, and was often both misunderstood and misrepresented, but those who knew him best, and who often his opponents, knew him as a fair, generous fighter, as one who never, knowingly, stooped to mean or unworthy attacks.

His funeral will take place on Saturday at 12.30 in the City of London Cemetery, Little Ilford.

## THE PHOTOGRAPHER'S ADVERTISING.

A Note in the "Bulletin of Photography."

ADVERTISING in any business has become a necessity. If you have a commodity for sale or are producers of a certain kind of work you must let the public know about it. But a profession requires a different sort of publicity from a trade or a business. It would be undignified of a clergyman or a physician to advertise at all, and so kind of advertising employed by a patent medicine vendor would be undignified in a photographic profession. Photography, while a business, and, to a certain extent, even a trade, is also an art, and needs artistic taste and perception to make it worthy of the title.

It is a great mistake to treat a sitter in the same way as a would-be purchaser entering a shop. The shopkeeper does well to secure his customer at all hazards, for he may never see the transient customer again, but the photographer's tactics should be just the reverse. He must not meet his customer, satisfy him, and at once dismiss him; he must at the very start look to future business relations, and must proceed cautiously—not kill him at once with a display of magnificence, but cautiously lead him on. If the customer perceives that the photographer is a sharp man of business the chances are that he will be inclined to go away to another, who impresses him more with his artistic talents. A studio, instead of being a thrifty-looking place of business, should have an air of business relaxation about it, just the place where a strenuous man of affairs would feel as if he had escaped commercial stress and storm, a peaceful haven from bank runs and stocks and finance. A studio should impress one as a place of lounging-place, and should be furnished with everything ministering to ease and comfort, not in the least suggesting that its sole object is to lure the unsuspecting to a purchase—dislikes to be confronted by a human interrogation point, even if dressed as a handsome reception lady—a pleasant place of sitting for a chat with a friend, like the lounging parlours in our department stores, a place of welcome where the visitor never hesitates to enter, a place which establishes friendly relations at once between the visitor and proprietor.

A photographer should look for business through his reputation. He should labour to demonstrate that he stands high in his profession, not by circulating dodgers or penny-stamp envelopes to the "Lady of the House," but by exhibitions of his ability and position in the display of his work, by the taste and skill in the decoration of his studio, by the convincing air of refinement in his furnishings; not by ostentatious show of cheap magnificence and tawdry finery.

The photographer who aims for publicity by grand exteriors, with grandeur in the hallways, grandeur all the way upstairs, grandeur staring the visitor at entrance of the studio, and a blaze of grandeur in the studio itself, makes a grand mistake. Such extravagance of display creates repulsion instead of attraction.

A bright and cheerful studio, full of pictures with appropriate settings and accessories, will attract the refined upper-ten, and will not distract the equally refined but more numerous middle class.

## Exhibitions.

### EDINBURGH PHOTOGRAPHIC SOCIETY.

The annual exhibition of the Edinburgh Photographic Society opened in the Club Rooms, Castle Street, on Saturday last. A decline in numbers was evident, there being seventy-two exhibitors (twenty-seven non-members) and 197 exhibits, including twenty-one sets of lantern slides. A noticeable feature was the very large number of prints in bromide. The judges, Messrs. C. Martin Hardie, R.S.A., Wm. Crooke, and J. Craig Anman, made the following awards:—

Open Class.—Medals: "When London Sleeps," Geo. L. A. Blair, Paisley; "On a Normandy Farm," W. J. Croall, Edinburgh; "The Deserted Mill," Harry Lindoe, Sunderland.

Open Class—Lantern Slides.—Medals; Graystone Bird, Bath; Richard Hancock, Heckford; and Alfred J. Loughton, Notts.

Photographs in Colour.—Medal: Arthur W. Walburn, West Hartlepool.

Members.—Medal: J. D. Paterson (2).

Members (who have not previously gained a medal).—Medals: D. W. Thompson and J. A. Angus.

### BIRMINGHAM PHOTOGRAPHIC SOCIETY.

My heart sinks low when I behold

That poster on the wall.

If such a paraphrase of the poet's immortal lines may be permitted, it is what one might vent upon coming face to face with the rainbow-tinted bill which the Birmingham Photographic Society displays this year. Fortunately one's heart is in the right place again at the first sight of the exhibition, and the meaning of the iridescence of the placards becomes apparent in view of the special feature made of the colour plates and prints.

The Society's annual display, which is well housed in the commodious galleries of the Royal Society of Artists in New Street, was opened by the Lord Mayor at seven o'clock on Friday last. It will remain open until March 2.

In the Great Room is hung the Members' Section, which, good as it is, suffers a little by reason of the fact that many of the more distinguished members have placed their works in the Open Section. This is, not unnaturally, by far the strongest portion of the exhibition. There are also small and separate sections provided by the following local societies:—Aston, Bournville Camera Club, Bournville and District, Brierley Hill, Erdington, Handsworth, King's Heath and Moseley, Municipal Technical School, Small Heath, Walsall, and, lastly, Worcester. Of these the Walsall Society has gained a medal for the best set of pictures sent by the local clubs.

The exhibition further includes a scientific section, devoted chiefly to natural history subjects; an excellent collection of colour-transparencies by the Lumière, Sanger-Shepherd, and Joly methods; lantern slides; a few colour prints, photographs belonging to the Warwickshire Survey, among which are many depicting groups from the recent Pageant; and finally some exhibits of apparatus.

To begin with the Members' Section. No. 1 is "An Old Mart," by G. L. Moore, an antique market-place shelter with a fine timbered roof to which the photographer has turned his special atten-

tion. No. 2 commences a liberal series by Mrs. Barton, who, by the way, has withheld her pictures in this group from competition, and in that course has been joined by Mr. Greatbatch and Mr. Wm. A. Clark. Mrs. Barton's "Hannah: A London Flower Girl," cannot be said to be the picture of a beauty, but her rather vacuous and brutal face has character of a sort, particularly as it is shaded by the type of hat with drooping feathers immortalised by Phil May, and now characteristic of Mayfair, motor-cars, and *le bon ton* generally. But Hannah has nice points of composition and management, besides a breadth of treatment, which is not, as a rule, a strong point of Mrs. Barton's work. Her "Edward Titley, Esq." (No. 8), for instance, has a distressing spottiness of forced lights and accents, quite marring an otherwise good portrait. Mr. E. D. Taylor has won a certificate for his "Evening" (No. 11), a river scene and bridge of happy selection. It is well composed, and has the further merit of a proper recession of planes. "Mary, Daughter of E. R. Carwardene, Esq." (16), is one of Mrs. Barton's happy examples of childhood. The pretty child is delightfully posed and lighted, but the thing is not improved by the utterly unconvincing background, which appears to be painted. In No. 19, R. S. Clarkson has secured an excellent likeness of Mr. Harold Baker, and a certificate to boot. It is, perhaps, just a thought posey—even to the regulation peep of handkerchief from the breast pocket, but the modelling and lighting of the head are distinctly good. The whole thing would perhaps have been better for more virility and strength in its lighter tones. Mrs. Barton appears again in No. 22, "When I'm as Big as You." The anticipation is addressed by a little boy to a hollyhock growing outside a window of leaded lights. Very unfortunately, an angle of these leads fits exactly over the boy's nose, and gives him a parrot's beak. The subject of "Autumn Flowers and Sunshine" (34) is a girl, prettily posed as usual, wherein Mrs. Barton repeats her want of judgment in allowing her print to degenerate into bright flecks upon a dark ground. There surely might have been more "losing and finding," more melting of tones. Even the passages of low tones in this work are "cut out" and flat. Work as admirable in so many ways as is Mrs. Barton suffers more acutely by such drawbacks than would less successful attempts. One of the most engaging of figure subjects here is a young mother and her baby, which Mr. H. W. Rennie calls "Hush-a-bye" (No. 37). It well merits the certificate it has won. The head is charmingly posed and most artistically treated, and the baby is better than babies often are under the eye of the camera. "Lux in Tenebris" (No. 38) comes from Wm. A. Clark, and depicts a dark crypt with one of its massive columns catching a shaft of strong light. The contrast, if not too strong for truth, which is doubtful, is at any rate too strong for art.

The Secretary, Mr. Lewis Lloyd, is to be congratulated upon the atmospheric beauties of his charming little canal scene called "A Waterway" (45). Less sky in W. Howard Coley's "Spring Morning: Poole Harbour" (60) would have resulted in better balance and a less fantastic "panelling" of a good subject, which has an excellent range of tones. His "Close of a Stormy Day" (64) is romantic and true in effect. It shows a lowering sky over a stretch of open country, and the passing of the stormy day has been well and convincingly suggested. P. Bale Rider carries off the medal in the Members' Section with his splendid "Meadow" (72). Here textures are most fascinatingly preserved without any loss of atmosphere or breadth of treatment. The picture has a slight fussiness, due entirely to the nature of its full, rich, and complex subject, made up, as it is, of tall wild-flowers and lacey trees. But a little more massing of the chiaroscuro could perhaps have been attained by a lowering of the point of view. This would have hidden the dark passage between the foreground flowers and the middle distance, or at least have joined up these two light spots.

As usual with the Birmingham Exhibition, the great amount of work submitted from all parts of the civilised world has enabled a most severe selection to be made, with a strong show as a result. The medal goes to E. O. Hoppé for his "Portrait" (111). It is a quietly toned picture of a girl in a large hat, and is quite unusually successful in the perfect taste of its design. Well placed upon the paper, of excellent "pattern," with a delicate but effective scheme of lighting—to say nothing of the charm of its subject—it should rank as an "old master" amongst photographs. Of H. Essenhich Corke's "Swarthy Cheeks and Bold Black Eyes" (109) honourable

mention has been made. Its fine subject deserves it, for it has a rare charm of magnificent physique and statuesque grace and feminine beauty. Its colour is rather heavy, and it has an irritating spot of light upon the left wrist which comes sharply against the dark draperies below the bust. In "Sun and Mist" (126), by A. E. King, a fine atmospheric effect is most happily given. It is that most desirable thing in landscape work—a mood, and is justly certificated. No. 136, "Washerwomen," is sent from Ravenna by L. Farini. Two women bend at their task over a shaded stream, and their largeness of treatment makes one think of Millet. Mr. Mahony is "commended" for her "City Highway" (148), where a broad river, flanked by noble buildings dominated by a dome, furnishes a stately subject. The print is very good in quality, but the water should be lighter under the light part of the city. Another honourable mention is for "Chioggia" (163), by A. Benussi of Trieste. This work shows large boat-sails which partly hide church and other background buildings. Unfortunately, owing to a similarity of tone and texture, it is not easy to see where the begins and wall ends at one part; but apart from that defect, and a little patch of light at each corner, the print is extremely rich, and of captivating "quality" in the technical sense of the word. In this section Mrs. Barton had won a certificate for her "Fates" (140) a work already well known. Its idea, its arrangement, and the quality in the heads are irresistible matters, but the flecked and shiny appearance of the tin-like frocks of the girls is not pleasant. James C. Batkin's "Dispersing the Gloom" (180) shows a good effect of sun breaking through a thick atmosphere on the Thames. It lacks a little firmness in the near parts, and a further interest in the water surface.

A certificate goes to E. T. Holding for a delightful portrait of Miss Ethel McCarthy (183). He shows, also, his "Childhood" (191), a favourite in London last year. It is pleasant also to see Walter J. Clutterbuck's pretty pastoral, "The Little Shepherdess" (184). "The Shepherd" (186), by Fred Judge, is of good style, and a pleasingly composed landscape of open country. J. C. Warburg has two pictures hanging together, called respectively "The Neighbour" and "The Wanderer's Return" (189). The subject of the latter is so fitted for the former title that doubt arises as to the proper numbering of the exhibits. It represents two old men at the doorway of a cottage, and is a print of fine colour and quality and carries a certificate. Another work of good design is Mrs. E. Peake's "The Spell" (195), but it is marred by an excess of contrast in the dresses of the two girls which cuts up disastrously a highly dramatic group. The next certificated work is "Snow Landscape" (201), by Heinrich Hinz. Here a strong blue has been used without the usual drawback to so twangy a tint, and the success of the print is due to the masterly and convincing treatment of a snowy shore where a boat lies in strong sunlight. "Seeing the World" (213) is Mrs. E. Peake's neat title for a little girl studying a school globe—a print of first-rate quality, with a strong impression of light. It is a pity that the child's legs are not accounted for. This also bears a certificate. Next come two of the most successful essays in the exhibition, both gaining medals. The first is "Snow in the City" (220), a Birmingham view, by J. Dudley Johnston, and the other, "While the Daylight Lasts" (223), by James C. Batkin. The latter represents a group of men working upon the under side of a stranded vessel. The idea is by no means new, but the treatment and feeling for roundness of form are welcome after the silhouetted examples of similar subjects that have become fashionable lately. In composition, or rather "pattern," this would be hard to beat. It is somewhat heavily treated, however, and in this respect compares with "Snow in the City," which is delightfully subtle and tender. R. Dührkoop contributes a group of his famous portraits, most, if not all of which have already been seen in public. He obtains a medal for his "Portrait of the Poetess" (236), a lesson in simplicity and restraint, and a certificate for "Conversation" (235), which, it will be remembered, represents a lady and gentleman sitting upon a sofa. J. C. Warburg, who is to be congratulated upon the strength of his work in this exhibition, takes a medal for his portrait of an elderly lady at a piano. It is one of the richest in quality amongst this class of work; the hands and the head are excellently lit and modelled. He calls it "A Song Without Words" (263). A lady and two little children, cheering from a window decorated with festooned drapery, bears



The title "When Johnnie Comes Marching Home" (280). The photographer, D. Murray, is to be pitied on account of the festoons, but congratulated upon the general charm and richness of this engaging little work, which has secured a certificate. H. T. Winterhalder had the ill-luck to get the glass of his picture badly starred. But as the work received honourable mention, the usual slip of paper was attached with the word "Commended." A wag added another which said, "but not mended." The title of the picture is "Sunlight on the Minstrel Gallery" (301), a capital little work, not free from manipulation in the window, where no sunbeam appears to enter, though the gallery and partition is flecked with sunlight. Another commended picture is the "Winter" of G. H. de Nagyrev (303), in which the middle distance is exquisitely given and the foreground admirably handled; the hard forms of the black trees, however, are a pictorial fault.

Coming now to the work of the local societies, a nice circular motive, caused by the "Bridge and Canal, Malines" (10), has inspired E. Welburn to produce a subject that gains him a certificate, to the honour of Aston. Bournville Camera Club takes one also with "Bruges" (16), by W. Davenport, whose tasteful mounting for something. Bournville and District has G. E. Mountford's "Meditation" commended. This shows a well-posed boy by an open door, looking out upon a river. It has feeling and a nice suggestion of planes. Brierley Hill's certificate goes to F. Gibbons for a very true and tender piece of work called "Floodtime" (38) wherein some sheep are quite remarkably well grouped. The bright area in the corner is a little awkward, but the atmosphere and fine tones. Erdington and Handsworth show work of such equal level that neither of them have one thing more noticeably good than the last. The King's Heath and Moseley Society are in the same boat. Neither, therefore, includes an award. The Municipal Technical School takes a medal and a certificate, the former for the charming "Roses" (75) of Lulu Hanman, a little red print of great taste and beauty, and the latter for an architectural piece called "Midst Massy Pillars" (71), by T. Fairfield. A certificate goes to E. Welburn, of Small Heath, for a peep through a Warwickshire courtyard, which appears to be wrongly named in the catalogue. It has excellent qualities of direct and reflected sunlight. Walsall, as a society, achieves a medal for the best work collectively, and G. W. Richmond personally takes another for his first-rate "Sister"—a Sister Mercy, by the way. This is very broad and simple in treatment, well-placed and trimmed, and with tones and textures perfectly ordered. A rather monotonous sky appears in the "Early Morning, Boulogne" (103) by W. J. Farthing, but it is the best of the Worcester group, and deserves its certificate for its nice composition. In the Colour Photography Section an unusually good and interesting collection of Autochromes distinguished this exhibition, and certificates fall to H. C. Holder for both an interior and a portrait, Nos. 25 and 26 respectively, and to W. Partridge for a "Flower Study" (14), whilst J. B. Walker gains a medal for his group work called "In a Conservatory" (52). Amongst the prints tiny and exquisite little group of "Corn Poppies" in a blue vase has been certificated. The thin and papery texture of the petals quite convincing. This is by S. Manners.

In the Lantern Slide Class, out of 148 slides two take medals, and five certificates.

The awards in the pictorial section were to have been made by Messrs. Furley Lewis, Mr. W. J. Wainwright, R.W.S., and A. Horsley Hinton, but owing to the illness—fatal, alas!—of the last-named, his place was taken by Mr. F. C. Tilney. The following is award list:—

**MEMBERS' SECTION.**—Bronze Medal: P. Bale Rider, No. 72, "The Shadow." Certificates: E. D. Taylor, No. 11, "Evening"; R. S. Clarkson, No. 19, "Portrait of Harold Baker"; H. W. Rennie, No. 37, "Hush-a-bye." Beginners' Section.—Certificate: A. E. Guytchard, No. 82, "Sunlight and Shadow."

**OPEN SECTION.**—Bronze Medals: E. O. Hoppé, No. 111, "Portrait"; J. Dudley Johnston, No. 220, "Snow in the City"; James Batkin, No. 223, "While the Daylight Lasts"; R. Dührkoop, No. 236, "Portrait of the Poetess"; J. C. Warburg, No. 263, "A Day Without Words." Certificates: A. E. King, No. 126, "Sun and Mist"; Mrs. G. A. Barton, No. 140, "The Fates"; E. T. Harding, No. 183, "Portrait: Miss Ethel McCarthey"; J. C. Warburg, No. 189, "The Wanderer's Return"; Heinrich Hinz, No. 201,

"Snow Landscape"; Mrs. E. Peake, No. 213, "Seeing the World"; R. Dührkoop, No. 235, "Conversation"; D. Murray, No. 280, "When Johnny Comes Marching Home." Hon. Mention.—H. Essenhigh Corke, No. 109, "Swarthy Cheeks and Bold Black Eyes"; Mrs. Mahony, No. 148, "A City Highway"; A. Benussi, No. 163, "Choigigia"; H. T. Winterhalder, No. 301, "Sunlight on the Minstrel Gallery"; George Haranghy de Nagyrev, No. 303, "Winter."

**LOCAL SOCIETIES' COMPETITION.**—Aston: Certificate, E. Welburn, No. 10, "Bridge and Canal, Malines." Bournville Camera Club: Certificate, W. Davenport, No. 16, "Bruges." Bournville and District: Hon. Mention, G. E. Mountford, No. 21, "Meditation." Brierley Hill: Certificate, F. Gibbons, No. 38, "Floodtime." Municipal Technical School: Medal, Lulu Hanman, No. 75, "Roses"; Certificate, T. Fairfield, No. 71, "Midst Massy Pillars." Small Heath: Certificate, E. Welburn, No. 84, "Mist and Rain." Walsall: Medal, G. W. Richmond, No. 97, "Sister." Worcester: Certificate, W. J. Farthing, No. 103, "Early Morning, Boulogne."

**COLOUR PHOTOGRAPHY.**—Autochromes: Medal, J. B. Walker, No. 52, "In a Conservatory"; Certificates, W. Partridge, No. 14, "Flower Study"; H. C. Holder, No. 25, "Interior," and No. 26, "Portrait." Colour Photography—Prints.—Certificate, S. Manners, No. 98, "Corn Poppies."

**LANTERN SLIDES.**—Medals: A. Roffey, No. 59, "The Vacant Tomb"; W. A. I. Hensler, No. 119, "Reflections." Certificates: Victor E. Morris, Nos. 7 to 10, "Street Scenes"; A. G. Thistleton, Nos. 17 to 20, "Figure Studies"; J. Dudley Johnston, No. 22, "In Salzburg"; Arthur Black, Nos. 80 to 83, "Flower Studies"; G. A. Booth, No. 96, "Thrush Study."

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents were received between February 10 and 15:—

**ANIMATED PICTURES.**—No. 2,930. Apparatus for producing animated and panoramic effects in projected pictures. William Thomas Andrews, 22, Queen's Road, Leytonstone, Essex.

**PLATE-HOLDERS.**—No. 3,179. Improvements in photographic plate-holders. Optische Anstalt C. P. Goerz Aktiengesellschaft, 31, Bedford Street, Strand, London.

**COLOUR SCREENS.**—No. 3,252. Improved process for the production of three-colour screens for photography. John Bamber, 33, Cannon Street, London.

**CAMERAS.**—No. 3,303. Improvements in photographic cameras. William James Lancaster, 11, Burlington Chambers, New Street, Birmingham.

**PAPERS.**—No. 3,415. Improvements in photographic printing papers. George Wilson Morgan, 121, West George Street, Glasgow.

**CINEMATOGRAPHS.**—No. 3,458. Improvements in cinematograph pictures and apparatus for viewing the same. Theodore Brown and Bessie Kate Brown, 22, Gresham Road, Brixton, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

**AGAR-COATED RAW PAPER.**—No. 2,155, 1907. The object of the invention is to provide an improved printing-out paper which shall be capable of being very cheaply produced. It consists in forming the surface upon which the medium, emulsion, or vehicle carrying the sensitive chemicals is to be deposited of agar-agar, which may or may not hold a baryta or like pigment. The agar-agar forms a coating directly on the paper basis, and the medium or vehicle carrying the sensitive chemicals is to be deposited upon this agar-agar coating or surface.

A paper is thus produced with a prepared surface on which is deposited the printing-out emulsion, this paper being much cheaper to produce and less variable than the so-called baryta papers of commerce, while the surface is "hard" and of a character suitable to the requirements of the manufacturer.

The agar-agar is not detrimental to the qualities or properties

of the emulsion. Moreover, when once it is set it is not dissolved in water until a temperature of about 98deg. C. is reached, though when once dissolved it remains liquid down to about 35deg. C.

The invention also consists in a printing-out paper consisting of a paper basis; an agar-agar coating on the paper basis, which agar-agar may or may not hold a baryta or like pigment; and a medium, emulsion, or vehicle carrying the chemicals sensitive to light deposited on said agar-agar coating.

In carrying the invention into effect according to one modification, an ordinary or low-grade paper, sized or unsized, is taken and coated with a weak solution of agar-agar, containing, say, from 1 to 2 per cent. of agar-agar. Baryta or other suitable pigment may be suspended in the agar-agar according to requirements. The paper is then dried and calendered. A surface is then obtained, either matt, polished or highly polished, as desired.

Some papers give good results when a solution of agar-agar is used without any pigment or with only extremely small quantities of pigment.

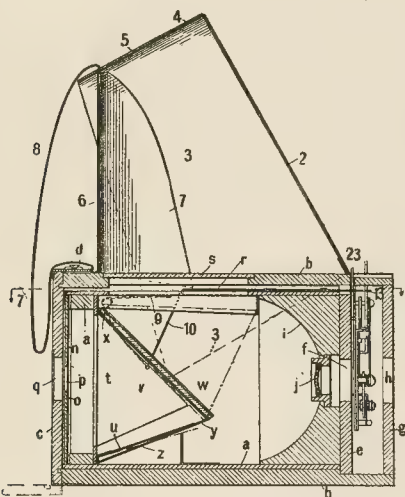
In some cases it is advisable to add borax or alcohol, or both combined. The effect of borax on the solution is peculiar, producing a "tackiness" or "stickiness" which is of advantage in the operation of coating. Borax has a further advantage of neutralising acids without being a base itself; this is accounted for by the fact that a higher acid combines with the sodium in the borax liberating what is termed boracic acid, which is such a weak acid as to scarcely justify that term, and certainly it is not harmful.

Alcohol has the effect of causing the emulsion to spread better and to decrease so-called "grease spots." It is found that agar-agar enables better surfaces to be obtained than can be done with animal sizing, and it can be worked more conveniently and rapidly than the latter.

After the paper has thus been provided with an agar-agar surface, the medium, emulsion, or vehicle—of whatever nature it may be—carrying the sensitive chemicals is put upon it in any convenient manner. William Francis Cooper, The Cooper Research Laboratory, Watford.

**CINEMATOGRAPHS.**—No. 14,056, 1907. The claim is for cinematograph mechanism, in which the feed-bath for giving an intermittent motion to the film is enclosed in an oil bath. Albert Urench, 50, Gray's Inn Road, London, W.C.

**REFLEX CAMERAS.**—No. 10,236, 1907. The invention is a reflex camera, the chief claim in reference to which is that it includes a shutter comprising two swinging superimposed plates normally



locked together and having coincident focussing apertures normally coincident with the lens opening, one of such plates having an additional aperture adapted, when the shutter is in the position it occupies immediately prior to making an exposure, to align itself with the lens opening so that when the other plate is allowed to swing relatively thereto exposure is made.

The specification requires the eight drawings to explain fully the construction. Lodewyk Jan Rutgers Holst, 1,410, President Street, Brooklyn, New York, and Louis Borsum, 955, Woodland Avenue, Plainfield, New Jersey.

**ASCERTAINING TIMES FOR EXPOSURE.**—No. 18,388. The apparatus consists of a compass placed in the centre of the base-plate, *a*. The axis on which the compass turns is also the axis of the disc *b* and *c*. Disc *b* is divided into five-hour divisions, Fig. 1, which correspond to five different solar positions, taken in a shade direction of an imaginary vertical bar in the centre of the disc. The divisions are calculated from the following solar positions:—

- + 23° 27' on June 21.
- + 11° 43' on April 20 and August 21.
- 0° on March 22 and September 23 (Equinox).
- 11° 43' on February 18 and October 23.
- 23° 27' on December 21.

Naturally the various hourly divisions can be arranged on different plates. In this case it would be necessary to discharge the plates detachable so that always the correct disc for the time of year could be in use.

Diametrically opposite the figure 12 is a pointer for adjusting the disc, *b*, with the division on the base-plate, *a*.

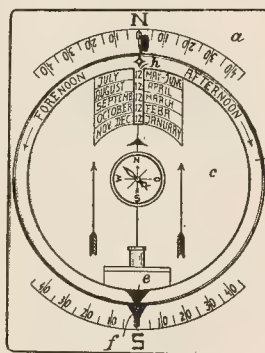


Fig. 1.

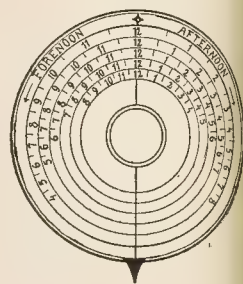


Fig. 2.

The disc, *c*, is so constructed that it covers the hour divisions on the disc, *b*, but not the words "forenoon" and "afternoon." The disc, *c*, is provided with a slit, *h*, so that the required hour divisions are visible, opposite a pointer, *e*, on the disc, *c*. Directly behind this pointer, *e*, is a photographic apparatus, at each side of which is an arrow, which arrows show the relative direction of the photographic apparatus to the object to be photographed. At both sides of the slit, *h*, are the months corresponding to the five solar positions so that the correct hour division can be quickly ascertained.

In order to ascertain the best time at which an object can be photographed, the apparatus is placed in a north-south direction; then the disc, *b*, is turned to the right or left (according to the required lighting angle), and then the disc, *c*, is turned until the two arrows point in the direction of the object to be photographed. The slit, *h*, then comes over an hour, with its corresponding month at which time it is best suitable for photographing the object. Alfred Muschke, 41, Grosse Bleiche, Mainz, Germany.

**MOLYBDIC EMULSIONS.**—No. 13,736, 1907. The process consists in treating organic substances, such as gelatine, albumen, or gums, with a solution of molybdic, tungstic, or uranic acid, or of compounds thereof, so that the mixture or the product of the reaction will show an excess of free (uncombined) acid. If neutralised solutions of such acids—i.e., solutions of the alkaline salts of such acids—are employed, acidification must be effected with hydrochloric acid or the like. Only preparations having an excess of acid show sufficient sensitiveness to light to be suitable for photographic purposes.

Preparations so made—if, for instance, applied to the surface of paper—yield a good "printing-out" paper—i.e., a paper giving a visible image in printing—which, for the purpose of obtaining permanent photographs after exposure to light, which produces at the exposed parts oxides that are coloured and not soluble in water, is treated with substances which transform that part of the



preparation which has not been acted upon by the light into a compound not soluble in water, and is then washed. Thus permanent copies or prints may be obtained from any negatives. Molybdcic acid or its compounds is or are most suitable; printing papers prepared with tungstic acid require to be fixed soon after exposure. The process is carried out as follows:—

Fresh albumenised or gelatinised paper is first saturated with gelatino-chloride in solution (produced by heating gelatine with dilute hydrochloric acid). The paper, having been drained, is floated upon a concentrated solution of molybdcic, tungstic, or uranic acid. For gelatine papers the treatment with molybdcic, tungstic or uranic acid alone will suffice, provided the gelatine is first permitted to swell in water. If, however, compounds of molybdcic, tungstic, or uranic acid having a neutral or alkaline reaction are used, then sufficient acid—hydrochloric, for instance—must be added to cause an excess of free acid. The manufacture may also be done by floating albumenised paper, firstly on a solution of gelatino-chloride and then upon a solution of metallic acid.

To produce permanent pictures, the prints are treated with a solution of barium or aluminium acetate, which will not affect the exposed parts, but will transform the unexposed parts into substances not soluble in water and not sensitive to light. The unexposed parts remain white, and therefore have no disturbing effect upon the image. The prints are then washed to take away any excess of barium or aluminium acetate. If, say, molybdenum paper is used, permanent prints in a blue tone from any suitable negative may be obtained. The pictures so produced may, if desired, be toned with gold or platinum. Johan de Ruiter, Bandveng, Java.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Metal Slides for Hand Cameras.

Personally (writes Mr. W. Thomas in "The Photographic News"), use, as occasion suggests, various forms of plate and film carriers, but the one most constantly in use, and giving me perfect satisfaction, is the single metal slide. It takes up little more room than the usual glass plate itself, and never seems to go wrong; but when such a rare accident does happen, if it is seriously damaged, the cost of a new slide is so trifling that the damaged slide may be discarded at once. Other reasons why I like the single metal slides are, that if by any chance they drop on to the ground, there is no risk of picking them up cracked and splintered, as might happen with wooden slides. Again, while they remain in working order, there need be no fear of their not being thoroughly light-tight, even when ultra-sensitive plates are enclosed. To mention but one other advantage—namely, the fact that pencil notes may be scribbled on the outside of these metal slides recording the particular kind of plate they contain at the moment—a very useful matter when using various kinds of plates.

## New Books.

Die Kinematographie: Wesen, Entstehung, und Ziele des lebenden Bildes." Von K. W. Wolf-Czapek. 8vo, 120 pp., 41 illustrated. Dresden, 1908. M. 2.50.

Brevity, no less than lucidity of expression, is to be commended. Both these qualities are apparent in this work, and it fulfils admirably the purpose for which it has been written, that of providing an account of the principles, origin, and uses of the living picture, which shall be clear even to those unacquainted with photography, and yet serve as a reliable handbook for those commencing the practice of the art.

Opening with a brief account of the nature of persistency of vision and the various apparatus used to demonstrate it, it proceeds to explain, very concisely, the optics and chemistry of photography, together with the manipulative processes necessary for the production of a photographic picture. To this follows a summary of the various early forms of living picture apparatus, thus including in the space of

36 pages an introduction which should give a very clear idea of the nature of living pictures to those who have not as yet ventured on the use of a hand camera.

The author does not attempt to describe the various types of machine on the market, but confines his attention to one alone, or at least the various forms of one make, the Ernemann "Kino," and especially the amateur model, which takes pictures 10 x 15 mm. on a film with central perforation. The practice of cinematography has always been, and of necessity must be, too expensive to become a general subject of amateur activity, and the introduction of small gauge apparatus, such as the "Biokam" and the "Kino," is the only means whereby expense may be reduced, and the taking of living pictures become a hobby in addition to a trade.

The most valuable section of the book is that dealing with the actual use of the apparatus and production of films. To this are devoted 26 pages, which give very clear directions for the production of both negatives and positives. Tables are given to show suitable stops and exposures for varying subjects and lights. The shutter of the "Kino" is formed of two sectors, sliding one over the other, thereby altering the area of the shutter, and, consequently, the exposure. The aperture of the shutter is expressed in the tables as millimetres, corresponding to a fraction of a second, and the tables are thus of general value.

A short description of the larger "Normal-Kino" machines is given, together with the accessories indispensable for work with ordinary gauge machines, and the whole concludes with a chapter on the varying uses of the cinematograph in art, science, technology, and education. The work, as mentioned, makes no claim to be regarded as an exhaustive treatise, but it certainly is so clearly written that all may understand, and it forms an admirable handbook for users of the "Kino," for which purpose it was apparently written. The section dealing with the actual taking of pictures is commendably practical, and anyone commencing the practice of cinematography would do well to peruse this little book, which, unfortunately, is only available in German.

H. V. HORWOOD.

"The Spectroscope and its Uses in General Analytical Chemistry.

By T. Thorne Baker. viii. and 130 pages, 8 x 5 in. London: Ballière, Tindall and Co. 5s. nett.

That the modern practice of analytical chemistry calls for a book of this kind may be readily admitted, and therefore in attempting to supply in the small space of a short manual such instruction as is necessary, the author has our commendation. Yet we are bound to question whether, in the sequel, the result justifies his qualification to pose as mentor to the professional chemist or the chemical student.

According to the author this work is to fill a felt want, and it is intended as an assistance for general chemical analysis. In the face of this one can hardly understand why accurate wave-lengths should not be given, as, for instance, in the table of the solar Fraunhofer lines on p. 54. Surely, in spectrum analysis extreme accuracy of the wave-lengths is all important.

Naturally the author dilates at length on the photographic side, but even here one meets with loose writing which may lead to trouble. For instance, he tells us that the measurement of the opacities of a negative in the blue and yellow-green will prove whether one light is richer in the latter colour than the former. A statement which, in the face of the researches of Eder, Stenger, Mees and Sheppard, and others, as to the difference in densities to different wave lengths, would appear to be far too wide.

Again, in order to determine photographically the composition of a substance by spectrum analysis, or, in other words, to determine the wave-length of an unknown line, the author recommends the photographing of a known line spectrum and then shifting the dark slide and photographing the unknown substance. This is absolutely valueless, for the one essential for accurate work is that there shall be absolutely no shift of any part of the apparatus, an absolute necessity when one considers that in such work one has to deal with ten-thousandths of a millimetre, sometimes to the third and fourth place in decimals.

It is curious to note that the author seems to be quite unaware of the existence of plane metallic gratings, and he perpetuates the old idea that a spectrum produced by a grating is always normal, although it is well known that it is not so. Far too many mathematical formulæ, without any explanation, are included, and

in one case, that of Hartmann's interpolation formula, one of the necessary constants is not defined.

**BRITISH BIRDS' NESTS.**—Messrs. Cassell are issuing this alphabetical work by Mr. Richard Kearton in 16 fortnightly parts, price 1s. each nett. The publication is fully illustrated by Mr. Cherry Kearton, and will contain a number of coloured plates of eggs. No. 1 includes a photogravure frontispiece.

## New Apparatus, &c.

The "Fulmenar" Anastigmat,  $f/6.8$ . Sold by O. Sichel and Co., 52, Bunhill Row, E.C.

This is an  $f/6.8$  Anastigmat, the focal length of the lens submitted to us being 7in., while the plate it is listed to cover is  $7 \times 5\frac{1}{2}$ . It appears to be of quite symmetrical construction, and if the front combination is removed the remaining back lens gives very good definition if stopped down a little. The complete doublet appears to be extremely well corrected as regards astigmatism, etc., and the lens, which is issued at a very moderate price, should satisfy many who require a good all-round anastigmat of not the very highest rapidity. Thus the  $4\frac{1}{2}$ in. lens is listed at £2 10s., and the 7in. at £3 12s. 6d. These prices are for brass mounts fitted with iris diaphragm.

## New Materials, &c.

**MOUNTS.**—The Crown Manufactory, Rotherham, send us some specimens of new series in mounts, which are deserving of commendation as distinctive in design and moderate in price. The "Oceana," a dark green mount at 5s. 6d. per 100 cabinets, is very neat, so is the "Melton," for ovals  $3\frac{1}{2}$  by  $5\frac{1}{2}$ , at 8s. 6d. A "Cosway," in lead-pencil grey, at 8s. 6d. per 100, is another tasteful style, and with several neat designs in circle mounts is listed in the Crown Co.'s new circular. The above prices in each case include printing of the photographer's name and postage.

**THE ANTINOUS RELEASE.**—Messrs. W. Watson and Sons, 313, High Holborn, London, W.C., have introduced an improved form of "Antinous" release for use on the Goerz "Sector" shutter. Instead of, as formerly, fitting on the nipple in place of the rubber tube, the nipple is unscrewed from the shutter and the release screwed in its



place. This gets over the difficulty sometimes experienced of attaching the release, owing to the shutter (in small cameras) working very close to the baseboard. The price of this release is 2s. 6d.

**Leto Plate-Markers.** Sold by the Leto Photo Materials Company, Ltd., 3, Rangoon Street, London, E.C.

The Leto Company in these additions to their series of specialties have certainly enhanced the effect obtainable on their "Boardoid" or extra-stout Seltona or other papers. The function of a printing paper of this weight is, of course, to obviate mounting, the negative being printed with a mask so as to give a clean margin to the picture. This margin can now be further improved by placing a plate-mark round the printed picture, for which purpose the Leto Company supply a piece of specially hard board so mounted that it registers with the print to be marked. The ordinary copying press, or, in its absence, the handle of a knife or other smooth surface, suffices to make the impression, and the result is unquestionably an improvement in the appearance of the print. Amateur photographers will be glad to have their attention drawn to the little device.

**"PAGET" COMPETITION.**—Mr. John Moffat, photographer, Princes Street, Edinburgh, has been awarded the first prize of £25 in the Paget competition for an enlarged portrait.

**CHANGE OF ADDRESS.**—Mr. George Faulkner, enlarger and trade worker, notifies us of his removal from Archway Road to larger premises, at 44, Finchley Road, Upper Holloway, London, N.

## CATALOGUES AND TRADE NOTICES.

**FALLOWFIELD'S BARGAIN SALE.**—Two lists, one of mounts and the other of general apparatus, have been issued by the firm of Fallowfield in connection with its annual stock-taking sale. Our advertisement pages give evidence of some few of the bargains to be picked up, but the two catalogues should be obtained for a proper apprehension of the very large variety of goods offered at, roughly, half price. The list includes plates and papers, cameras and lenses, shutters, finders, camera stands, dishes and tanks, washers and dark-room lamps, and a variety of photo-button apparatus. The stock of mounts to be disposed of at the reduced prices evidently runs into many thousands, and it would seem that 146, Charing Cross Road, where the articles can be seen, will be besieged by photographers during the three weeks of the sale. Yet country buyers should note that Messrs. Fallowfield have arranged to send fuller particulars of any items from the list on application being made to them.

**THE CATALOGUE** of the stocktaking sale at Houghtons Ltd., which has now reached us, is found to include in its twenty pages a large number of bargains in box, folding, and field cameras, lenses and shutters, and many varieties of mounts and albums. The demand for these bargains is usually such that immediate application to 88-89, High Holborn, is desirable.

**WRATTEN PLATES.**—The new list of Messrs. Wratten and Wainwright is now only a price list—not as previously, something of a text book. As a price list it gains by the change, and for the technical information which Messrs. Wratten pride themselves on holding at their customers' disposal, there are seven distinct booklets to be had for the asking. Any or all are sent free from Croydon.

**HAND AND STAND CAMERAS.**—Mr. L. Gandolfi, as a maker of cameras, has our respect, and we are therefore glad to find he has published a small list of the apparatus to the manufacture of which, as we know, he devotes the most careful personal supervision. The chief item in the list is the description of the "Universal" hand-stand camera. The six drawings on page 3, which illustrates its great range of movements, are deserving of study by those seeking a good deal in a folding camera. The list is posted free on application to 752, Old Kent Road, London, S.E.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

FRIDAY, FEBRUARY 28.

Waltham Dearne Photographic Society. Rotary Carbohydrate Paper.  
Cardiff Photographic Society. Pontypool Photographic Society's Slides.  
Sutton Photographic Society. Members' Excursion Slides.

MONDAY, MARCH 2.

Harrow District Photographic and Scientific Society. "Photo-Chemistry." W. A. Luty, A.R.C.S.  
Cleveland Camera Club. Amateur Photographer Prize Slides.  
Bradford Photographic Society. Members' Slides.  
Southampton Camera Club. Focus Prize Slides.  
Catford and Forest Hill Photographic Society. "Finishing a Print for Exhibition."  
Rev. H. O. Fenton.  
Kidderminster and District Photographic Society. Members' Lantern Slides.  
Bowes Park and District Photographic Society. "The Ancient Churches of South Essex." C. Forbes.  
Scarborough and District Photographic Society. "Here and There, at Home and Abroad." J. H. Rowntree.  
Lancaster Photographic Society. Demonstration by B. J. Edwards & Co.  
South Manchester Photographic Society. Discussion on the Exhibition.  
Workington Photographic Society. "Enlarged Negatives on Rotograph Negative Paper."

TUESDAY, MARCH 3.

Royal Photographic Society. "The Autochrome Plate applied to Natural Science." By F. Martin Duncan.  
Epsom and District Literary and Scientific Society. "Platinotype." Platinotype Co.  
Hanley Photographic Society. Members' Night. Mr. Outlack.  
Worthing Camera Club. "Sussex Highways and Byeways." R. J. MacDermott.  
Stafford Photographic Society. "Finishing P.O.P. and Self-Toning Prints." C. E. Fowke.  
Redhill and District Camera Club. "A Visit to English Cathedrals." H. W. Bennett.  
Sheffield Photographic Society. "The Sheffield Parish Church." James H. Wigfull, A.R.I.B.A.  
Wishaw Photographic Association. "Enlarged Negatives on Rotograph Negative Paper."

WEDNESDAY, MARCH 4.

Croydon Camera Club. "Photo-microscopy with Simple Apparatus." J. Bawcomb.



th Suburban Photographic Society. "Photography at the Royal Observatory, Greenwich." E. W. Munn, F.R.A.S.  
 Ingham Photographic Society. "Advances in Colour Photography." J. Tudor Cundall, B.Sc.  
 rough Polytechnic Photographic Society. "A Ramble in London with Charles Dickens." Miss M. Smith.  
 Middlesex Photographic Society. Lantern Slide and Print Competitions. Camera Club. "Wells; Its Cathedral and Neighbourhood." A. E. Hasse.  
 istol Photographic Club. "Rambles along the Chew." W. F. Kuner.  
 st Calder Camera Club. "Enlarged Negatives on Rotograph Negative Paper."

THURSDAY, MARCH 5:

elsea and District Photographic Society. "Shanklin." L. Hill-Bailey  
 "North Devon." C. Cutts.  
 herham Photographic Society. "A Trip to Belgium." J. W. Wright.  
 C. School of Photo-Engraving and Lithography. "The Production of  
 Intaglio Plates." A. E. Bawtree.  
 rhmond Camera Club. Competition Prints.  
 ll Photographic Society. "Ozobrome Process." F. W. Doughty.  
 ckney Photographic Society. Annual Meeting.  
 gby Photographic Society. "The Pinatype Process as Applied to Three-  
 Colour Work." E. E. Wedmore.  
 ll Camera Club. Debate. W. Swindon and Mr. Stollwood.  
 asgow Southern Photographic Society. Rotary Carbohydrate Paper.  
 mbridge Wells Amateur Photographic Association. "Some Rarer Marsh Birds."  
 Miss Turner.

### ROYAL PHOTOGRAPHIC SOCIETY.

MEETING held Tuesday, February 25, Mr. John Sterry in the chair. Paper was read by Mr. K. J. Tarrant on "Photography as an aid to Electrical Research," in which the author described the photographic records of discharges of high tension of electricity, and showed the examples he had been able to produce of artificial thunderstorms on a small scale in the laboratory. The graphic representation of a lightning flash descending upon a series of miniature buildings proved of considerable interest. The lecturer also exhibited a number of Autochrome photographs of Geisler, Crookes, and other tubes when in action. These he had made with the help of Mr. J. McIntosh, and the results proved the usefulness of the Autochrome plate in work of this kind.

CENTRAL TECHNICAL COLLEGE PHOTOGRAPHIC SOCIETY.—A meeting held February 19, Professor Ashcroft in the chair. Mr. Rogers, of Messrs. Fuerst Bros., gave a lecture and demonstration of the "Pinatype" process of colour photography.

CROYDON CAMERA CLUB.—The seating capacity of the club-rooms is severely taxed last week, when Dr. Mees lectured on "Colour-reen Plates." The lecture, which mainly consisted of a condensation and simplification of a paper recently read at the Society of Arts, very clearly explained the broad principles underlying colour-ography in general, and screen-plates in particular, and was illustrated by a series of unique slides. Perhaps of all the screens of mosaic plates shown, that of Krayn aroused the greatest interest, possibly owing to its ingenious method of manufacture. A most hearty vote of thanks was accorded Dr. Mees, and to Mr. S. Wratten and Mr. Pledge for kindly assisting.

HULL PHOTOGRAPHIC SOCIETY.—Mr. W. F. Slater lectured last Tuesday on "Time Development." In going through the theory and practice of this subject it was made clear that, given a fairly correct exposure to the plate or film, the question of development is nothing short of a mechanical process. This was proved by developing a spool of film in the Kodak daylight tank, the exposures covering such subjects as portraiture, interiors, landscapes, etc., with a wide latitude in tone values, yet every one of them came out very well indeed.

In illustration of the difference between the expense of films and plates, the lecturer said: Suppose one takes 12 dozen plates on a holiday tour; they will cost 15s. backed, or a saving of 21s. on films. The plates will take 36 hours, at the very least, to develop and fix, as against six hours on films developed in lengths 12 at a time. The question of facing three and a half full working trays in the dark-room has to take first consideration, and how any one could go through such a labour when the simple method of daylight developing was at disposal he failed to understand. Thirty hours at 8½d. per hour comes to £1 1s. 5d., whilst there was no gain as regards health and eyesight. The lecturer's suggestion was that the time saved could be most profitably devoted to the operation of the print or more consideration given to your work at the exhibition.

LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.—Meeting held January 20, Mr. O. S. Dawson in the chair. Mr. Archer Clarke lectured upon a modern photo-mechanical process, or, as

he preferred to term it, the missing link between photography and lithography. This, he stated, was a means whereby a greasy image could be printed direct on to the litho' stone or meta' plate from the original if the same scale was required, or from a reversed negative for reduced work. The process of making transfers by the bichromate method was touched upon, and it was stated that there was much waste of paper when using this means owing to the fact that it had to be sensitised overnight and would not keep. He then introduced a new method of working in the shape of "amphitype" paper. This paper, he said, will keep indefinitely if stored from light and damp, so that the operator had only to cut from his roll the quantity required. Many examples of work done by its aid were passed round, and the following took part in the discussion:—Messrs. Butterfield, Dawson, Beckett, Rapson, Stretton, and Haddon.

## Commercial & Legal Intelligence.

A PLATINOTYPE DISPUTE.—In the Wood Green County Court last week Walter Edward Dalglish, photographer, of Newton Avenue, New Southgate, sued J. Hayes, stationer, of "Glenholm," Sidney Avenue, Bowes Park, for £3 15s. 9d., in respect of photographs taken and supplied to defendant's order.

Mr. G. H. Rittner was counsel for plaintiff. Mr. W. P. Armstrong, solicitor, represented defendant.

Plaintiff said that on September 18 last he received a postcard from defendant asking him to take a photograph of his family. This he did on the following Sunday, and subsequently sent on proofs to defendant. At defendant's request the photographs were executed in the platinotype process, and on delivery both defendant and his wife spoke well of them. No complaint was made until November 23, when defendant wrote saying he was very disappointed with the photographs, and he was sorry to have to reject them.

In the same letter defendant said that he could not send the photographs to his friends, as he was afraid they would inquire who was represented.

A number of the photographs were produced in Court.

His Honour, Judge Edge, in regard to the question of likeness, described the photographs as easily recognisable as the defendant. He remarked to one witness who explained why less detail appeared in one process of photography than in another, "You are talking to a photographer, and one who has been a photographer for fifty odd years."

The Judge, in giving his decision, said the platinotypes were certainly not what he should call first-class, but there was no representation that they would be first-class or high-class, and a first-class price was not charged. But, although low, he thought the charge was in excess of what the goods were worth, and he should reduce the claim.

It was stated that three dozen and nine photographs were supplied.

The Judge: I have taken 6d. off each. There will be judgment for plaintiff for £2 11s. 3d. and costs.

AN UNPROFITABLE BUSINESS.—Before Mr. Registrar Giffard a sitting was held for the public examination of Herbert Dawson, from whose statements it appeared that in 1899 he, with £1,600 capital, of which £1,000 had been borrowed, commenced, and until the date of the receiving order carried on, business as an advertising contractor at Norfolk Street, Strand, W.C., under the style of H. Dawson and Co. For the past seven years he had also traded as a manufacturer of photographic apparatus at Wimbledon in partnership with another person. The receiving order was made upon the petition of Mr. A. F. Walter, of the "Times," Printing House Square, E.C., and the debtor has furnished a statement of affairs disclosing gross liabilities £28,626 12s. 9d., of which £25,247 18s. 5d. are returned as unsecured, and an estimated surplus in assets of £4,698 19s. 10d. On examination the debtor said that he had built up a turnover in his business of over £40,000 a year, but latterly the profits had fallen away. He had also given his time to a camera business, and to several company matters, with the view of obtaining orders for advertisements. The examination was concluded.

A SOUTH WALES BANKRUPTCY.—A meeting of creditors of Sidney and Josiah Butt, 75, Trebonal Road, Skewen, near Neath, Glam.,

photographers, etc., was to be held at Swansea on February 19. No creditors, however, put in an appearance, and the Official Receiver (Mr. Thomas Thomas) remains trustee. The gross liabilities are placed at £62; expected to rank, £52; assets, after meeting preference claims, which amount to £8, nil. The cause of the failure is ascribed to bad trade.

**MANUFACTURER'S FAILURE IN BIRMINGHAM.**—In the Birmingham Court of Bankruptcy last week Mr. Registrar Lowe made a receiving order in the matter of John Page Croft, of Packwood, Grove Avenue, Moseley, and carrying on business at Cooksey Road, Small Heath, photographic paper and apparatus maker, and also at 24, Quadrant Chambers, New Street, Birmingham, tea merchant. Messrs. T. W. Walthall and Pritchard are solicitors in the proceedings.

**FORDHAM AND CO., LTD.** (Photographic Mount Manufacturers, Walthamstow).—Issue on January 14 of £1,000 6 per cent. debentures, part of series created March 26, 1906, to secure £6,000, charged on the company's undertaking and property, present and future. Holder, G. Miller, Surrey House, Victoria Embankment, W.C. No trustees. Total amount previously issued of same series, £5,000.

**CHARGE AGAINST A CANVASSER.**—James Smith Dickie, a travelling photographer, was convicted at Arbroath last week of having, on various dates in January and February, fraudulently obtained photographic articles to the value of £1 13s. 2d. A fine of £2, with the option of thirty days' imprisonment, was imposed.

**H. BOWN (LIMITED) v. HENRY BOWN.**—Judgment was given last week in this action, brought by a company formed to take over the defendant's business of a photographic artist, for specific performance of a contract to sell it for £10,000. The facts, which were reported in "The Times" of Wednesday, showed that the contract sued on and an earlier one were obtained by the fraudulent misrepresentations of Thomas Isaac Grimes, who became managing director of the company. The case stood over for the defendant to consider what judgment he should ask for on his counterclaim, which was, alternatively, for rescission of the contracts or for payment of £5,000, the cash portion of the purchase money, and of £1,500, paid by him to Grimes.

Mr. Astbury, K.C., and Mr. G. F. Hart, for the defendant, now submitted minutes, to which, with some modification, Mr. Frank Russell, K.C., and Mr. Laurence Rostron, for the company, agreed.

Mr. Justice Swinfen Eady gave judgment dismissing the action, with costs, declaring that the agreements of November 23, 1906, and January 7, 1907, were obtained by the fraud of Grimes, and ordering them to be set aside and rescinded. He ordered possession of the business and of the properties referred to in the agreements to be delivered to Bown and deeds and documents, books, and papers relating to them to be handed over, with all the assets of the business, except additional premises acquired since November 23, 1906. The debentures and shares received by Bown were to be handed back, and there was judgment against Grimes for £1,500 and £500, and against him and the company for costs of the counterclaim. The receiver who had been appointed pending the action was to be discharged, and there was liberty to apply as to his remuneration and as to any balance due to or from him, and also (without prejudice to any question) as to any outstanding liability in respect of debts incurred by the company while carrying on the business.

**PICTURE POSTCARDS IN COURT.**—At the Clerkenwell County-court, on Monday last, before his Honour Judge Edge, the British Art Company, photographic printers, of 61, Essex Road, Islington, sued Felix McGlennon, music and postcard publisher, of Bouverie Street, E.C., for £25 4s. in respect of work done. Mr. Dodd was counsel for the plaintiff, and Mr. O'Gorman for defendant. In opening the case, Mr. Dodd said that Mr. McGlennon conceived the idea of having a series of postcards printed, illustrating the poem by Geo. R. Sims, "Christmas Day in the Workhouse." Plaintiffs were given an order for a series of twelve photographs, 1,000 of each. The order was delivered in December, 1906, but, as Mr. McGlennon made a complaint that they were not fit for sale, plaintiffs undertook to print further editions. This they did, and duly delivered the cards. He (counsel) understood that the defence alleged the cards to be of an unmerchantable quality.

Alexander Simmon, of the plaintiff firm, said the cards were merchantable. Proofs were submitted to Mr. McGlennon before the

bulk was printed. Witness never admitted that the cards were unsealable.

Some of the cards were handed up to his Honour.

An expert, giving evidence as to the merchantable quality of the goods, said it was possible to remove some of the marks from cards. It was not possible, added witness, to get absolute uniformity of tone in photographic prints. Another expert corroborated this statement.

Questioned by counsel as to the difference in cards handed up, witness said that some people liked them brown, and some preferred a darker photograph. Are these the same in tone?—No one would guarantee that they would be exactly the same in tone.

Referring to certain markings, witness was asked if purchasers of picture postcards would be likely to raise an objection?—It just depends on the purchaser. Some would notice it; others would not.

Mr. Price, defendant's manager, said that if he offered the cards in question to the wholesale trade, they would be refused on account of the dirty marks and the variability of the tone. The great objection was the dirtiness where the letterpress ran.

Had the marking been treated before fixing, said an expert, they could have been removed.

Mr. Dodd: I put it to you that it cannot be done until after the photograph has been finished?—I say it can be done.

Another witness in the trade said it was part of the operation to remove the abrasion marks before the photographs were sent out.

The darker tone was said to be the most popular on the market now.

The brown tone was known as "gingery" in the trade.

Having examined a number of cards, the Judge thought the defendant was rather hypercritical in saying or supposing that they were not reasonably merchantable. There were some bad ones, and he thought some deduction ought to be made from plaintiff's account. He thought £2 2s. would be a reasonable sum to allow, and the verdict would be in plaintiff's favour for £23 2s. and costs.

## News and Notes.

**DEATH OF A PHOTOGRAPHER.**—The death took place in Glasgow last week of Mr. John Fergus, who died as the result of an accident which befell him the previous day. The deceased was well known in Scotland as a photographer. His studio at Blackdales, Largs (a mansion-house which he purchased about thirty years ago, ten years after he started as a photographer in Largs), was famous all over the West of Scotland, most of whose notabilities a quarter of a century ago were photographed there. Deceased had also a studio at Cannes, in the French Riviera, where he photographed many crowned heads and illustrious persons, including the King when he was Prince of Wales, and the late Mr. Gladstone and his wife.

**STEREOPHOTOGRAPHIC SURVEYING.**—At a meeting of the research department of the Royal Geographical Society, held on February 21 and reported in the "Times" for February 22, Lieutenant E. Vivian Thompson, R.E., read a paper on stereophotographic surveying. He described the method as consisting of taking photographs in pairs, in the same vertical plane, at a measured distance apart, and viewing the negatives or positive transparencies obtained from them in a special form of stereoscope. The eye-pieces of the stereoscope were provided with exactly similar indices, which could be made to combine stereoscopically with any given point in the view by increasing or decreasing the distance between the slides holding the photographs. The amount of separation required for stereoscopic combination was a measure of the range of the point from the plane in which the plates were exposed, and could be read on a suitable scale. Azimuth and elevation or depression could also be read from scales on the instrument. Thus any desired point on the view was completely fixed. By using a long base line, say 100 yards, a very exaggerated stereoscopic or relief effect was obtained, so that a fold in the ground at ranges up to five or six miles was easily perceptible. The effect was what would be seen by a person whose eyes were 100 yards apart, and was 1,440 times the relief effect seen by normal eyes which were 2½ in. apart. In plotting the observations on the map, it was desirable to keep pace with the camera party—that was, to fix in plan and altitude from 500 to 2,000



ints a day. With a view of making this rate of plotting possible, the reader of the paper had designed a "stereo-plotter," which was development of the Pulfrich "stereo-comparator," and made the setting of points and the reading of heights partially automatic. The Pulfrich instrument the data for plotting were obtained from three Vernier readings for azimuth, elevation or depression, and parallax, corresponding settings being made on a detached plotting-board. In the stereo-plotter the binocular microscope and the negative slides were similar to those of the stereo-comparator, but the motion of the slides, instead of being measured by scales, was transmitted direct to the plotting-board, which formed part of the instrument. By this means the three readings and settings of the stereo-comparator were reduced to a single reading on a drum graduated in yards and one setting.

**A SOCIETY FOR CHISLEHURST.**—A photographic society has recently been formed for Chislehurst and its neighbourhood. Suitable premises have been secured, where meetings will take place fortnightly during seven months in the year. The president is the Rev. James E. Dawson; Dr. Allan and Mr. F. A. Robinson are vice-presidents; Mr. A. Saalfeld is hon. treasurer; and the committee of ladies and gentlemen contain the names of Miss Dawson, Miss Robinson, Miss Fletcher, and Messrs. E. De Quincey and A. J. Gordon. The hon. secretary is Mr. G. W. Miller, of The White House, Chislehurst, who will give any further information on the subject intending members.

**THE BIRMINGHAM PHOTOGRAPHIC COMPANY** writes: "Your readers may be interested to know that our premises were broken into by burglars on Monday of last week, and the whole of the place ransacked from top to bottom. Unfortunately, an entry was made through our bromide emulsion setting-down-room window, which, of course, was blocked up at the time. We happened to have a full stock of bromide, as well as a number of tests, down at the time, and, of course, the whole of these were spoilt. However, our stock is sufficient to enable us to execute all orders by return of post as usual. Some cash and cheques were stolen, but our photographic records appear to have been too heavy and bulky to have been taken away."

**MALVERN CAMERA CLUB.**—The annual exhibition will be held in the lecture hall of the Public Library, Malvern, from March 30 to April 4. There will be three classes, open to all photographers, in each of which a bronze plaque, medal, and certificate will be placed at the disposal of the judge, Mr. Arthur Marshall, F.R.P.S. Entries close on March 21, and exhibits must be delivered, carriage paid, at the Public Library, on March 26. Entry forms and full particulars may be obtained from the secretary, Mr. J. B. Nickolls, The Range, Malvern.

**LECTURES AT THE BOLT COURT SCHOOL.**—Three short courses of lectures, which should prove of interest to those engaged in any of the crafts concerned with illustration—in photography, and book design, or newspaper production—will be given at the L.C.C. School of Photo-Engraving and Lithography, 6, Bolt Court, Fleet Street, E.C.4, on Thursday evenings during the months of March, April, May, and June. From March 19 to April 2 Mr. James Black, manager of the plate-making department of Messrs. Spottiswoode and will give three lectures on "Duplicate Plate-Making," dealing fully with the processes of stereotyping and electrotyping, including finishing methods and the application of machinery. From April 14 to 28 Mr. R. W. Sindall, F.C.S., will give three lectures on "Papers for Printing," in which he will deal with high-class, half-tone, and half-tone printing, and the suitability of the various papers of paper to each, the characteristics of the various papers, manufacture, etc. The third and last course will be given by Dr. S. E. Sheppard, from June 4 to 25, who, in the course of his lectures, will deal with "The Chemistry and Physics of Colloids," in their relation to photographic and photo-mechanical processes, based on the nature and characteristics of colloids; reversible and irreversible colloids; preparation and analysis; jellification and coagulation; methods of investigation; ultramicroscopy; and its relation to colloidal phenomena; absorption of inks, etc.; absorption and solid solution. The above lectures are free for students of the school, but a small fee of 2s. per course is charged for non-students. Tickets for all or any of the lectures may be obtained from the school.

## Correspondence.

\* \* We do not undertake responsibility for the opinions expressed by our correspondents.

\* \* Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

### SULPHIDE TONING OF BROMIDE PRINTS.

To the Editors.

Gentlemen,—I notice that from what you say in your leader and from what has appeared in other journals, there still is much misapprehension about sulphide toning. Some three or four years ago I very carefully tested this method, and my conclusions were, as I dare say you know, published in various articles contributed to "Photography." There has been lately a good deal of nonsense written about this subject. It was therefore very refreshing to see Mr. Munkman's article in the last edition of your paper. This article confirms my own work on the subject. Long ago I maintained in "Photography" that when all solvent action is avoided "the tone finally obtained is a function solely of the original silver image." There seem to be two main sources of error into which a good many people have apparently fallen:—

- (1) The use of an improperly made-up bleacher.
- (2) The use of impure sodium sulphide.

I have emphasised the importance of these two points often enough, but apparently my warnings have not been heeded.

Of course, if the bleaching solution either adds some foreign substance to the image, as in the case of certain bichromate-chloride bleachers, or if it has a solvent action on the image, as in the case of the ammonia-ferricyanide one, an alteration in the tone is brought about.

If, however, additive and solvent actions are avoided it makes no difference whatever whether the image is bleached to chloride, bromide, or iodide. I tested this point very carefully, and I am glad to see Mr. Munkman confirms my view. When I first commenced to experiment on sulphide toning the only reliable bleacher known, which it was possible to use, was the iodine one. The ferricyanide-bromide bleacher was not known, and nobody had published a reliable bichromate-chloride one. Thus it was that I at first always strongly advocated the use of iodine. Now, however, that other good bleachers are available the use of iodine has rightly ceased almost entirely. It is certainly the fact that an iodine bleacher is more bother to use than many others. The ferricyanide-bromide bleacher was, I believe, first brought forwards by Mr. Edwards, and a really reliable bichromate-chloride one by myself. The principles of the latter solution were first explained by Messrs. Piper and Carnegie.

Nobody who uses sodium sulphide should use anything but the best quality. I have always insisted on this point. I advise that only the pure analytical reagent ( $\text{Na}_2\text{S} \cdot 9\text{H}_2\text{O}$ ) be used. There are the following varieties of sodium sulphide at present on the market:—

- (1) Fused sodium sulphide ( $\text{Na}_2\text{S}$ ).
- (2) Crystalline sodium sulphide ( $\text{Na}_2\text{S} \cdot 9\text{H}_2\text{O}$ ).
- (3) Crystalline sodium sulphide ( $\text{Na}_2\text{S} \cdot 9\text{H}_2\text{O}$ ) "purified for analysis."

The latter (No. 3) only is the one to be used. I always buy my sodium sulphide from Messrs. Baird and Tatlock, of 14, Cross Street, Hatton Garden, E.C.

One can now get the sulphide practically free from iron, and so no boiling is necessary.

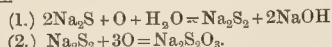
I advise photographers only to buy fairly small quantities at a time, and to make up all of what they buy into a stock solution at once. Say one buys 1 lb. of sodium sulphide, this should be dissolved in about ten ounces of water, and then the solution should be made up to sixteen ounces with more water. It is important that the stock solution should be strong, as it keeps best thus. I advise that the stock solution should be kept in a stoppered bottle, the stopper of which is greased with a little vaseline or other hydrocarbon grease. If much stock solution is stored it is as well to have a small bottle of about 5-oz. capacity which is kept filled from the main store, and to take out the solution actually used for making up the toning bath from this small bottle.

I have kept a 20 per cent. solution of sodium sulphide for a year or more without apparent deterioration. There is absolutely no

difficulty presented here if ordinary care is used. The actual toning bath is made up by taking

Stock sulphide solution .....  $\frac{1}{2}$  oz.  
Water ..... 4 to 7 oz.

The contamination of the sodium sulphide, when it occurs, is caused by oxidation. The substance is acted on by the oxygen of the air thus:—



Sodium thiosulphate ("hypo") being finally formed. I have tested the effect of adding "hypo" to the toning bath, and I find that it is possible to add  $\frac{1}{2}$  per cent. of "hypo" to a 1 per cent. solution of  $\text{Na}_2\text{S}_9\text{H}_4\text{O}$ , without effecting the tone of a bromide-bleached print, but that  $\frac{1}{2}$  per cent. of "hypo" made a difference which was just perceptible, and 1 per cent. an easily perceptible one. In the case of a chloride-bleached print the differences are, as one would expect, more marked,  $\frac{1}{2}$  per cent. "hypo" in the toning bath here shows itself quite plainly, although certainly not strikingly. Here, then, is the reason why some have always maintained that chloride-bleached prints give a different result to bromide-bleached ones—the experimenters used impure sodium sulphide. It should be noted that in the actual case of any of the sulphide being oxidised to "hypo" its strength is naturally reduced. In order to counteract the effect of slight impurity it is perhaps advisable never to use the toning bath of a less concentration than 1 per cent. or so—although with an absolutely pure sulphide solution the concentration has no bearing on the tone obtained. This I pointed out long ago in "Photography." In your note you mention the differences noticed in certain brands of paper. It is possible with some papers to get images which appear all right in every way in the "silver" stage, but which do not yield a very good colour when sulphuretted. The reason of this, I believe, is as follows:—All "silver" images are really halide "lakes." The black images to which I am now referring, of course, contain only a very little halide. Some black "silver" images, however, contain a fair amount of silver halide, and these, as in the case of "re-developed" images, do not yield on sulphuration an image of the same tone and depth as would be expected by a visual examination of the original "silver" image. Since here in the case of black "silver" images the halide is only present in very small quantity we can look upon it as dissolved in the metallic silver. This is a subject I want to look further into. I need not point out that such a phenomenon in no way contradicts the great general principle underlying the sulphide toning process, but that the tone is a function solely of the original silver image. It only shows that we cannot tell the nature of an image by merely looking at it, unless we have had a lot of experience, and not always then.—Yours truly,

31, St. John's Road, Putney, S.W.

R. S. BLAKE SMITH.

February 21, 1908.

P.S.—Possibly some of the differences noticed in the action of thiomolybdate and the thioannate are due to the fact that these substances yield lakes, whereas  $\text{Na}_2\text{S}$  yields silver sulphide. If so, this is to the credit of  $\text{Na}_2\text{S}$ .—R. S. B. S.

#### SEPIA-PLATINUM PAPER.

To the Editors.

Gentlemen,—I was very pleased to see the letter referring to sepia-platinum paper in your journal of the 14th inst. I may say that I have always been doubtful in regard to the permanence of such prints, and although I have practised the platinum process since 1886, I have never tried any but the black paper on that account. However, now that I see the Platinotype Co.'s paper has stood the test mentioned, I propose giving it a trial. I mean, of course, the "Japine" paper, and shall esteem any remarks you may be able to offer, in addition to what has been said.

As regards developing, separate dishes will, of course, be used, but would you kindly say if separate dishes should be kept for fixing? I do not mean to fix the different kind of paper at the same time, but after well cleaning, would it be safe to use them for the fixing of black prints afterwards?

I should not like the purity of the blacks to be at all affected.—Yours, etc.,

W. J. BARKER.

14, Victoria Mount, Leeds.

February 22, 1908.

[If the dishes are well cleaned there can, of course, be no trouble.—Eds. "B.J."]

#### DRYING NEGATIVES WITH SPIRIT.

To the Editors.

Gentlemen,—On page 18 (1908) of your esteemed weekly you state that you have not seen any satisfactory explanation of the formation of white opalescent stains (films) while using methylated alcohol for drying negatives. I beg you to allow me to say that the well-known chemist, Dr. Lüpke-Cramer, on page 73 of the "Photographischer Rundschau" (1907) has given, as I think, a satisfying explanation of the stain above named. He found that gelatine containing some water has a honeycomb-like structure, which cannot be detected under normal conditions, but it appears as if the gelatine is coagulated in alcohol, in which case the difference is heightened between the refractive power of the walls of the cellulose and their content. By re-soaking the gelatine the difference is destroyed and the structure disappears.—Yours faithfully,

K. W. WOLF-CZAPKE.

Dresden-A. 21.

February 17, 1908.

#### PINHOLE APERTURE NUMBERS.

To the Editors.

Gentlemen,—The object of my letter of December 20, to which Dr. Power replies, was to point out that the whole of the credit of the Watkins-Power table, published in the last issue of the "British Journal Almanac," and taken from the "Watkins Manual," was due to Dr. Power. I had not seen either "Camera Craft" or the "Photo-Miniature" containing Dr. Power's tables, and my own knowledge of his plan was taken from a short article in "Photography," June 11, 1904. Now that I have seen No. 70 of the "Photo-Miniature" let me say that the table there given is entirely different in standards and relative sizes from that which I devised from my own standards, and called the Watkins-Power table.

I deny emphatically the statement made twice in the "Photo-Miniature" that I have adopted Dr. Power's method and standards. My table is from my own standards, and was given from 1895 onwards in the third, fourth, and fifth editions of "Exposure Notes" and in the early editions of the "Watkins Manual." The present modified form I called the Watkins-Power table, because I wished to give the fullest acknowledgment of the fact that an idea in naming the apertures had been taken from Dr. Power.

Dr. Power mentions that he does not think "the relation of seconds to minutes is the important part of my formula." He is wrong here, for if the plan (devised by me and perhaps re-invented by him) of naming the apertures as if they were 60 times their true exposure value, is eliminated from his system, it would lose all its value, the diaphragm sizes would be far smaller than those marked on camera or exposure tables. For example, his No. 3 at 10 inches would have to be calculated as  $f/240$  instead of  $f/30$ .

Dr. Power corrects my statement that his No. 4 is  $f/32$ . I am obliged to him for the correction, but I took the information from the article in "Photography," and it is there fully explained why  $f/32$  is called No. 4, and there is evidently no misprint. His present table is entirely different from his first one. No. 4 is also given as  $f/32$  in the latest "British Journal Almanac."

But according to Mr. Douglas Carnegie, none of the tables under discussion are of any value, as light through pinholes does not follow the usual rules applicable to lenses.

ALFRED WATKINS.

Hereford.

February 22, 1908.

#### PHOTOGRAPHERS AS PROFESSIONAL MEN.

To the Editors.

Gentlemen,—Having watched with interest, too intense for words, the glorious evolution (on paper) of the coming university-graduate professional photographer, even to have him protected and licensed (like a public house), it seems inconclusive to close this discussion without fixing up a distinct type, so that all who run read—read and run afterwards?

For instance, when you see on the stage a man attired in a smooth red hair, and a huge spotted handkerchief twisted round his neck, you know he is a countryman, though you see his like nowhere else, likewise the stage doctor, lawyer, butler, "buttons," and other great lights, but where shines the stage artist photographer?

Greatly daring, might I humbly suggest that a Grand Committee of High School experts sit, *in camera*, and decide upon the "department"—à la Mr. Turveydrop—and personal furnishings of this coming



splendid studio accessory—I beg his pardon! acquisition, please, Mr. Printer.

In the faintest whisper might one propose that the indelible hall mark of exquisite perfection be stamped upon this ethereal type by his hair and accent—say hair six or eight inches long, waved, and parted down the middle. Accent, that of the budding curate of the deep-toned Gothic variety, coming somewhere from the region of his "dicky"—bother! these cheap fountain pens always get the wrong word—I mean his short buttons, jewelled in every hole.

Should he glare one eye, or wear a lens cap in it? His lace handkerchief might be scented, but what size,  $6\frac{1}{2} \times 4\frac{1}{4}$ , and a  $12 \times 10$  when he has a cold? Imagination reels before the vision of the future fully licensed awfully exclusive professional artist photographer; but should he be allowed to associate with the mere R.A.'s of the Academy?

Anyway, the fearfully common legend: "Sitters are requested to pay at time of sitting"—like hens do when they are on the deposit system—must on no account disgrace his studio walls; instead thereof: "Clients are commanded to walk backwards on retiring from The Presence of the High Art Operator at the Camera."

Never more than one portrait allowed per sitter, and the price? At least 25 per cent. on the victim's yearly income. Would that be exclusive and high toned enough? If these feeble suggestions serve in any way to pave the way, they are abso-blooming-lutely free from copyright!

A. FIELDSEND.

Silver Street, Lincoln. February 20, 1908.

#### SIMPLIFIED DEVELOPMENT OF AUTOCHROMES.

To the Editors.

Gentlemen,—Referring to the recent correspondence under this head there appears to be no reason for restriction to any particular developer. Theoretically, the developers of long factor give a finer deposit, and the following figures from the 1908 "Almanac" are interesting:—

Pyro (about) .....	5
Amidol .....	18
Metol .....	30
Rodinal .....	40
Dianol .....	60

The last being recommended by Messrs. Lumière for second development. Why pyro should be used for first development is not apparent, either from the results or from theory, nor is it clear why it is used. Possibly the "B.J." can enlighten us as to this.

Your correspondent on the matter recommends rodinal 1-10. Would it 1-20 give a finer deposit without reducing rapidity too much, but with more time for judgment of density?

It seems certain that two bottles only (developer and reversal solution) can produce equal results to those attained with the rather expensive collection first given.

It may not be generally known that daylight is not essential for development. Exposure to incandescent gaslight gives rapid blackening, thus making evening development practicable. If there any doubt as to the speed or sufficiency of the action a little magnesium puts the matter beyond question.

Discussion at this stage is very welcome, as helping to greater perfection and simplicity the precious power of colour in the form of which we are so much indebted to MM. Lumière.—Yours faithfully,  
T. H. JONES.

Fairfield, Mapperley Plains, Nottingham.

February 25, 1908.

Most of the points raised by our correspondent have been discussed on our pages or in the "Colour Photography" Supplement. French workers are now using amidol. Mr. Piper months ago advised using the alcohol, and MM. Lumière have approved its entire replacement by water. It has been customary, too, to expose to artificial light before re-development.—Eds. "B.J."]

SIR BENJAMIN STONE, M.P., will not seek re-election again for East Birmingham. He is seventy years of age, and though in good health at the present time he feels that he could not face such a contest would be necessary if the division is to be retained by the Tory party. It is with the view of giving his friends the opportunity of electing his successor well before the electors that Sir Benjamin Stone definitely informed the chairman of the executive, Mr. Norris, that he will not seek re-election. He has represented the division since 1895.

## Answers to Correspondents.

- \* All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.
- \* Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.
- \* Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & CO., 24, Wellington Street, Strand, London, W.C.
- \* For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.

#### PHOTOGRAPHS REGISTERED:—

W. Broughton & Sons, 102, High Street, King's Lynn. Photograph of Mr. and Mrs. J. H. Carleugh leaving St. Margaret's Church, King's Lynn.  
F. G. Wagborne, Trading as The London Photographic Company, 129, Newington Causeway, London, S.E. Photograph of Gunner Moir.

W. END.—We have handed your letter to the secretary of the P.P.A., who will doubtless reply to you direct.

TROPICS.—(1) Certainly, the prints are indistinguishable from those made by direct printing. (2) Yes, it is usual to employ the alum bath before fixing, washing in several changes of water before fixing. (3) Better apply to Wratten and Wainwright, who could advise you as to the time limit.

H. G. FISKE (Toledo, Ohio, U.S.A.).—Address Dr. J. H. Smith, at 9, Lessar Avenue, Clapham Common, S.W.

RED TONES.—I am an amateur, having some photographic prints which I am desirous of toning to a bright red colour. In your issue of January 31, you tell how to get this effect on certain prints with "Thiocarbonate." I do not understand this, so would be extremely gratified if you would explain in detail how I can produce a print of bright red colour either on plain silver or bromide paper.—CARLETON S. REYNOLDS (Brooklyn, N.Y., U.S.A.).

For P.O.P. prints a suitable thiocarbonate bath is that of Valenta:—Gold chloride 2½ grs., water 4oz; add to dissolve precipitate first formed, enough of thio-carbamide 10 grs., water 2 ozs. (about 150 minims will be required). Next add citric acid 48 grs., and water to 10 ozs., and finally salt 90 grs. For red tones on bromide paper about the best method is the copper toner (B.J. Almanac, 1908, p. 825), or the use of a good toning bath on a print which has been sulphide-toned. The bath is: Ammonium sulphocyanide 20 grs., gold chloride 2 grs., water 2 oz.

WAXING COMPOUNDS.—Would you kindly suggest a suitable formula for preparing a semi-solid waxing preparation for waxing bromides, which we understand is a mixture of white wax, spermaceti, and benzoline? (2) There is, also, we understand, a kind of varnish, apparently celluloid in acetone, which is also used for the same purpose, for which we should also like a formula, in order to compare this with the other method.—J. Y. AND SONS.

(1) A suitable formula is:—Purified beeswax, 50 parts; oil of lavender, 30 parts; benzole, 30 parts; gum elemi, 1 part. (2) We have no experience of a home-made produce. We should advise the so-called Zapon-lac, sold by the Leto Photo Materials Co., Ltd. "Lustralene" (Vanguard Co.) is also a good commercial form of the semi-solid waxing compound.

EXPRESS Co.—Try Berry and Roberts, St. Bride Street, London, E.C.

P.O.P. EMULSION.—Can you inform me as to the best emulsion for coating ordinary pulp board so as to get a similar result to P.O.P. I also wish to know whether it is advisable to float the emulsion on the board or coat with a brush?—SHAVIAN.

In the "Almanac" will be found, amongst the standard formulae, several for P.O.P. emulsion. Any one of these would be suitable, though the quantity of gelatine or water might require alteration to suit the specific case. In all probability floating will be found the best method of applying the emulsion, as this chills the emulsion quickly, and therefore prevents its penetration into the support. The trouble will lie not in making or applying the emulsion, but in the pulp board itself. P.O.P. emulsions contain free silver nitrate, which is at once reduced by metallic or other impurities, and the result will be black

spots. It might be possible to give the pulp board a preliminary coating of chrome, alum, and gelatine, *plus* a little citric acid.

**W. N. L.**—(1 and 2) It is often misleading to give directions in such cases, but we should say at least an ounce of mixture would be necessary to get detail in the stonework, etc., of the tunnel. We should say the light in the second case would be sufficient, but the plan of separately igniting three separate candles is bad for subjects such as groups. You require one or two lamps which can be fired simultaneously. This you could do, say, with the "Dega" lamp, of Chas. Zimmermann and Co., which is a very suitable apparatus for (3).

**VEHICLE, ETC.**—I would be greatly obliged if you could tell me of a substitute for gelatine in an ordinary silver bromide negative, such that it will conduct electricity well, or fairly well. Also, if any of the silver haloids are electrical conductors.—**J. C. WALSH.**

We regret that we cannot suggest any vehicle for the silver halides which would be a conductor of electricity. The silver halides themselves are conductors.

**A. P.**—The print is probably a bromide, toned by the hypo-alum method ("Almanac," page 825). We should say the new thio-molybdate toner would give similar results, and do so more quickly. See the article in our last issue.

**SCREENS AND OTHERS.**—In our next.

**PHOTOGRAPHING SHOP WINDOWS** (Reply to J. A. Coleman).—There is only one way of avoiding the defect—*viz.*, to prevent the opposite house being reflected. Altering the stand-point of the camera will not do unless it so happens that there is a dark and much taller house just to the right or left of those reflected, in which case a sideways direction of the camera might help you. The best means, however, is to get a tall dark van to halt in front of the shop window when the photograph is being taken. This will be reflected in place of the houses, and will not be noticeable. Another dodge, sometimes practised, is to photograph the window by flashlight at night. A good charge of powder would be necessary. One or two trial tests would show how much. The plate is not of great importance. Your present brand is all right.

**FINISHING ENLARGEMENTS.**—(1) Which are the correct pastels to use for tinting portrait bromide enlargements? I have tried Reeves' soft French pastels, both with and without powdered pumice, but the results are very poor, lacking in depth of colour. The article in the "B.J. Almanac," 1906, is the only one I remember having seen, and that does not give the correct pastels to use. (2) Is the method of applying the same as finishing in black and white—namely, stamps, cotton wool, etc.? I am unable to obtain Johnson's book on "Finishing," etc. Dealers say it is out of print. Is there any other publication on this subject?—**T. N. CHAPMAN.**

(1) If you re-read the article you refer to in the "Almanac" for 1906 you will see that the correct pastels to use are given. Also that three pages (848, 849, and 850) are devoted to details of the method of doing the work. If you read carefully again you will find all the information you require. (2) The publishers of Johnson's book are Marion and Co. Better write direct to them. We are not aware that the work is out of print.

**LENS APERTURE.**—The enclosed bromide print was obtained by putting a piece of bromide paper in lens cap, lens opened to full aperture, and camera racked out to infinity. In place of plate in dark-slide was a piece of thin black card with a large pinhole exactly in centre. Close to the pinhole was burned about 2 in. of magnesium ribbon. I understand the black circle represents the effective aperture. Can you please tell me the *f*/ value of that aperture? The lens is 5½ in focus. The makers say it is *f*/6.5.—**DOUBTFUL.**

If you state focal length correctly then the aperture is *f*/8.

**J. THOMAS.**—What you propose should be quite possible; but we should advise you to consult Messrs. Ross on the matter. A supplementary lens would be more likely to increase the speed rather than to slow the lens, but if not carefully adjusted it will disturb the corrections.

**H. S. (Reigate).**—We do not know the lens in question, but you cannot expect to get more than a few shillings for an old portrait lens unless it is by a maker of great repute.

**CONFIDENCE.**—The idea is very old, and has been published over and over again. All you can do is to register a trade-mark for such portraits, whereby to identify them with yourself. This will cost

you about £1. You should apply to the Registrar of Designs and Trade Marks, Southampton Buildings, E.C., for particulars.

**SENSITISING SILK.**—(1) Can you give me a formula for making photographs on material such as silk, etc.? (2) If by putting such a process on the market do I infringe any existing process? (3) Is there any such process on the market that is protected? (4) What would be the cost of such protection?—**FRANCIS O'ROURKE.**

(1) We do not know of a silver print-out method giving a sensitive material which will keep. You can try the platinum and Kallityp sensitizers given in the "Almanac," which are about the best formulae for the purpose. (2) In using these you would not infringe any patents, but you are not at liberty, of course, to use the word "platinotype." (3) The Platinotype Company prepare sensitized silks and other fabrics to order. (4) If you mean patenting, the cost of a provisional protection is £1.

**DAMAGED PAPIER-MACHE TRAYS.**—We have had in use for about twelve months several large papier-mache trays, which we use for washing prints, etc. These now are becoming rather pulpy at the sides and corners, and in time will be useless. I should be glad if you can tell me of a preparation I can use on them that will waterproof them, and also make them durable without any risk of injuring prints or negatives that may be washing in them.—**W. G. WOOD.**

If the papier-mache itself has become really pulpy we are afraid you will not be able to do much with them. The best treatment, however, will be to make them thoroughly dry and then give them two or three coats of good Brunswick black, taking care that each coating is quite dry and hard before a subsequent one is laid on. In place of Brunswick black, Aspinall's or similar enamel may be used. Either will not have any injurious effect on prints or negatives.

**VARIOUS.**—(2) What lens and speed of plate would you recommend to obtain fully exposed negatives of street views instantaneously? The lens required would be for 1-1, plate size. (3) Can you tell me the best means to reduce the halation on negatives caused by windows, etc.?—**A. E. H.**

(1) An electric or percussion-cap form of igniter is the best. We never heard of the use of oxhydrogen gas for the purpose. The outfit would be much too bulky. "Magnesium Light Photography," by F. J. Mortimer (Dawbarn and Ward, ls.). 2. A lens working at *f*/6 should be sufficiently rapid for average work with a plate of the highest speed, sold by any of the leading makers. A suitable focus for whole-plate is 10 or 11 inches. You had better consult the lens advertisements in the "Almanac." (3) Rub down with alcohol or the Basket globe polish reducer, recommended to "Edwin Hadley" last week, p. 152. We advise you to get the 1s. book of Dawbarn and Ward, "Finishing the Negative."

**A HUMORIST ON PHOTOGRAPHY.**—The humorist is Mr. S. R. Crockett, whose experiences with a camera in making mementoes of his travels were published some time ago by Messrs. Newman and Guardia, Ltd., and a delicious piece of writing it is, well deserving of a half-hour's reading, quite apart from its inclusion of the charming photographs which Mr. Crockett, all unskilled, was able to make with his "N. and G." The book bears the title "A Romancer's Local Colour," and Messrs. Newman and Guardia will send it post free for 7d. from 90 and 92, Shaftesbury Avenue.

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## SUMMARY.

the exhibition of portraits by members of the P.P.A. closes to-  
row (Saturday) at 12.30. Some impressions of a provincial pro-  
positional at the exhibition appear on page 176. A protest by Mr.  
C. Turner against the remarks of Mr. Tilney, published some  
days ago, appears on page 182.

the essential portions of Mr. Frederick H. Evans' recent paper  
multiple mounting at the R.P.S. are reprinted on pp. 178 to 181.  
Mr. F. C. Tilney, at the North Middlesex last week, discoursed  
the art and practice of bromoil printing. (P. 175.)  
the suggested scheme of a National Photographic Portrait Gallery  
ld appear to be one in which the R.P.S. may take the initial  
steps. (P. 173.)

Mr. R. Luther has been appointed professor of photography at  
Eden. (P. 174.)

further details are announced as to the Brussels meeting of  
Photographic Convention. (P. 186.)

the death is announced of Mr. P. E. Newstead. (P. 183.)  
high-power telephoto lenses appear among patents of the week.  
(P. 183.)

the differences of tone in sulphide toning with pure and impure  
sulphide are the subject of an editorial. (P. 174.)

Mr. Wandersleb, in replying to a criticism of his paper on  
ortion, points out that the latter was a defence of the unsym-  
metrical lens. (P. 174.)

## "COLOUR PHOTOGRAPHY" SUPPLEMENT.

Dr. C. E. K. Mees describes a series of experiments on the  
anner in which "Uto" paper bleaches-out. (P. 17.)

British Screen-plate.—Announcement is made of the appear-  
ance on the market in a month's time of a British-invented and  
manufactured screen-plate to be known as the "Thames." (P. 24.)  
the Krays Screen-plate.—We give on page 23 some further  
details which raise a doubt as to the possibility of using a section-  
screen-plate film in cinematograph work.

Autochrome Plates.—Perhaps the most comprehensive examina-  
tion of the Autochrome plate is that of Mr. R. J. Wallace, pub-  
lished on pages 21 to 23.

two formulae for varnishes for the Autochrome plate have been  
recommended by Valenta. (P. 20.)

some points in the making of Autochromes are mentioned by Dr.  
Smith, of the well-known reproduction firm. (P. 20.)

Mr. C. Litchfield makes some suggestions as to an adjustable  
pur-filter for Autochrome plates by means of which variations in  
composition of atmospheric light may be compensated for. (P. 24.)

the recent paper by Mr. F. E. Ives gives particulars of the simpler  
method of measuring colours than the one described in our pages  
some months ago. (P. 19.)

## EX CATHEDRA.

### The Brussels Convention.

At the council meeting of the Conven-  
tion held last week Mr. F. A. Bridge  
was able to report very satisfactorily as  
to the final arrangements for the forthcoming convention.  
Among the papers to be read is one by Dr. W. Scheffer  
on the Autochrome plate; Mr. Martin Duncan is to lecture  
on screen-plate photography and show the latest applica-  
tions of the cinematograph to nature study; whilst an  
artist member of the Association Belge, M. Marisseau, is  
to deliver a lantern-lecture on Venice. With further con-  
cessions in the way of railway fares to London (for  
those who travel via the metropolis) and the  
announcement that members will have the opportunity of  
seeing the port of Antwerp from the river, there is still  
more reason for believing that the meeting will be larger  
than in previous years. That, too, is the indication of the  
inquiries and applications for membership addressed to  
the secretary.

\* \* \*

### The R.P.S. Portrait Gallery.

The scheme for the foundation of a  
National Photographic Portrait Gallery,  
that the Royal Photographic Society  
proposes to carry out, has received a crushing blow from  
a most unexpected quarter, for the R.P.S. is informed that  
a project of such value should be undertaken by some  
other body of greater importance and wider scope! It is  
not stated where a photographic body of greater impor-  
tance and wider scope is to be found, nor is it definitely  
suggested that a non-photographic body would do the work  
better; on the contrary, it is admitted that the R.P.S.  
should be allowed to have a say in the matter. The only  
ground for objection to present arrangements seems to be  
that the R.P.S. is not competent to decide who is worthy  
and who is not worthy to be represented by his portrait in  
the collection, but, so far as we know, the Society have  
not yet announced how this question is to be dealt with,  
hence the criticism can be at once dismissed as premature.  
No other grounds for complaint being yet stated we cannot  
weigh them in the balance, and by the time they are  
formulated we trust that the Society will have recovered  
from the shock of the first blow and be able to meet them  
with calmness and courage. If this scheme is not carried  
out by them we think there is very good reason to believe  
that it will not be carried out at all. The proposed gallery  
must inevitably be a thing of slow growth, and it will  
probably be years before the word "gallery" is properly  
applicable. In the beginning it must be a very small  
thing, probably too small for a specially appointed body  
of "more importance" to take much interest in. At pre-  
sent the R.P.S. does take an interest in it, and has avail-  
able all the organisation required for putting the scheme

on a workable basis, hence it is apparent that the Society forms the most suitable body for dealing with the project. Moreover, the membership of the R.P.S. being inclusive of all classes of men, little difficulty should be found in obtaining advice from any quarter whenever advice is felt to be required.

\* \* \*

#### The Professorship of Photography at Dresden.

We mentioned some time ago the intention of the Education Authorities in Germany to found a chair of photography in Germany at the Dresden Technical High School. This appointment has now been conferred on Dr. Robert Luther, of the Leipsic University. Dr. Luther is well known in Germany as an investigator in photo-chemistry, and the scientific press has borne evidence of his many researches on photo-chemical subjects. One of his earliest papers was that published jointly with Dr. Gros, in which were described the properties of certain dyes and leuco bases which have been used in the pinatype process. Dr. Luther is just forty years of age at the present time, and his appointment to the professorial chair will probably mean the continuous prosecution of research work under his direction.

#### THE USE OF SODA SULPHIDE.

MR. MUNKMAN's experiments in sulphide toning, described in his article of February 21, gave results that accorded with Mr. Blake Smith's experiences as recorded in our last issue. That is to say, both writers are agreed that, given pure sulphide and bleaching baths that have neither any additive nor solvent effect upon the image, the tones obtained are invariable. We think, however, that both lay rather too much stress upon the absolute necessity for using pure sulphide, and upon the evils of impure sulphide. The variety that we mentioned in our previous note, if treated in the way described, gives tones that are absolutely

different from those produced with pure sulphide, and many will differ as to the respective merits of the tones. With some subjects the less pure sulphide most undoubtedly gives by far the best tones, and to many people the pure sulphide tone is an objectionable one. The difference between the tones is nearly as great as that between the thiostannate and thiomolybdate tones described by Mr. Piper in his article on these two sepia tones, and moreover, the difference is one of the same kind. The ordinary sulphide gives a pure sepia-brown, while the other gives the photo-brown tint that is so popular among some workers and so much disliked by others. The soda sulphide that we are in the habit of using most frequently is labelled "pure," though its impurity is fairly manifest. The tone it gives is as different as possible from that produced by really pure sulphide, and boiling and filtering are both necessary in the preparation of the solution. A ten per cent. stock solution keeps well in a bottle with a greased stopper, and it gives us no trouble whatever. It is, of course, of a strong yellow colour, whereas the pure sulphide solution is colourless, or very nearly so, but our experience is that in a strong solution it keeps just as well, though in a weak solution the pure sulphide certainly keeps rather better. As regards constitution, no doubt the impure solution is a very complex mixture of sulphide and polysulphides. It may contain hypo, but if it does there is not enough to vitiate the results, and we can see no reason for abandoning a solution that gives an excellent and very desirable tone in favour of one that gives a tone of a quite different character. Of course, there are many degrees of impurity, and we should advise the purchaser of the ordinary sulphide from a reliable dealer. For the very purest sulphide it is necessary either to go to a manufacturer who prepares chemicals for analytical use or to make it oneself. The recrystallised pure sulphide is in quite white crystals like soda sulphite, while the ordinary sulphide is usually in green and yellow powdery lumps, and contains a considerable amount of insoluble material that has to be filtered out.

## DISTORTION IN SYMMETRICAL AND UNSYMMETRICAL PHOTOGRAPHIC OBJECTIVES.

HERR W. ZSCHOKKE, of the Scientific Staff of the C. P. Goerz Optical Works, Friedenau, near Berlin, has replied to my article recently published in this paper on "Distortion in Symmetrical and Unsymmetrical Photographic Objectives." I should, therefore, like to have this opportunity of briefly referring to the same.

An editorial note in the "British Journal" of February 21, page 134, confirms my statement in the previous article ("B.J.," January 31, 1907), as to the currency of the dogma regarding distortion, that amongst photographers it is almost generally accepted. It cannot, nevertheless, be denied that the dogma also holds sway in circles which are accustomed to consider these questions also from a theoretical standpoint. As one illustration of this fact, I may cite the following instance:—In the most recent prospectuses of the firm of C. P. Goerz the following sentence is to be found in the paragraphs devoted to the convertible objective "Pantar":—"Trotz dieser grossen Helligkeit—[1 : 6, 3]—gibt Pantar bei einer Gesichtsfeldausdehnung bis zu 85 deg. ein sehr scharfes, klares und bei symmetrischer Linsenkombination korrekt gezeichnetes Bild."<sup>1</sup> Here it is, however, implicitly stated that

the Pantar does *not* yield correct drawing in an *unsymmetrical* lens combination, i.e., if it consist of two Pantar lenses of different focal lengths. In reality, distortion in the "Pantar" is all the more completely corrected for its entire, expressly stated scope of application—*praeter propter*  $10 < N < \infty$ —the more the focal lengths of the single lenses ( $f_1 > f_2$ ) differ. This fact, which is applicable to all hemi-symmetrical convertible objectives, was stated by Dr. von Rohr in a special paragraph in his paper, already alluded to, published in 1897. In his book "Theorie und Geschichte des photographischen Objectives" (Berlin 1899), also referred to by Herr Zschokke, mention is again made with regard to this fact on page 55. In spite of this, it has evidently escaped the scientific advisers of the firm of C. P. Goerz.

Dr. von Rohr writes in the above-mentioned book, page 53:—"It is really the fulfilment of the tangent condition that is the more important thing, and one can rightly consider such symmetrical lenses as being *practically* free from distortion, through which the error of the older optical system finds its explanation." Herr Zschokke, in quoting this sentence, unfortunately overlooked the fact that the word "*practically*" is printed in italics, otherwise he would have found difficulty in quoting the sentence as a proof of Dr. Holm being right in stating that "symmetrical lenses are perfectly free from distortion."

<sup>1</sup> In spite of this great rapidity (1/8.3) the Pantar, with an extension of the field of view up to 85 deg., yields a very sharply defined image and correct drawing in a symmetrical lens combination.



Finally Herr Zschokke attacks my statement that practical defence can easily be obtained as to a very decided curvature of lenses (which are straight ones in the object) on the margin of the image field, if one of the well-known rapid symmetrical objectives be chosen for investigation and employed up to the image angle of 80 deg., or even 90 deg., which is often claimed them. As a refutation, he puts forward a photograph made by the Goerz "Dagor"  $f/6.8$ .

In reply I wish to state that the double anastigmat "Dagor"  $f/6.8$ , as shown by the curves published by me, is almost the best of the well-known symmetrical universal objectives as regards freedom from distortion; the symmetrical objectives of the greater rapidity, especially those constructed according to the Gauss type, show much larger errors.

Furthermore, it should be remarked that the photograph selected by Herr Zschokke does not contain a sufficiently exacting criterion for the "Dagor"  $f/6.8$ . A far better test would be as follows:—A white cord, to the lower end of which a weight is attached, is suspended free in air from the roof of a high building, the wall of which is not too white. This cord represents a straight line. A camera for 10 by 8 or 15 by 12 inches is placed at the window of a middle story of a house situated opposite. If a "Dagor"  $f/6.8$ , of focal length 120 mm. (4.7 in.) be fitted to this camera and sharply focussed on the opposite wall (in my investigation at a distance of  $A = 10$  yards),

the diameter of the image circle is  $D = 2f + \frac{2f^2}{a - f}$

in my case a little more than 24 cm. (9 7-16th in.) for an angle of 90 deg., up to which, the firm's prospectus states, the "Dagor"  $f/6.8$  goes when stopped down. The camera is now adjusted so that the image of the white cord appears at a distance

$\sqrt{\frac{D^2}{8}}$  in my case, therefore, 8½ cm. (3 5-16th in.), later-

from the middle of the plate. It then represents the side

of a square described in the image circle. Now, if the curve of distortion recently published by me for the "Dagor"  $f/6.8$  be followed to  $w = 45$  deg., it will be found that the side of the square, 17 cm. (6 11-16th in.) long, i.e., the image of the white cord, must show a curvature of 0.7 mm., if the lens corresponds exactly with the constructive data on which the curve is based.

It was impossible for me to entirely determine this calculated fact in the two examples of "Dagor"  $f/6.8$ ,  $f = 120$  mm., at my disposal, since the diameter of the circle of light in these, probably belonging to an older series of manufacture (No. 97,719 and No. 7,744), only amounted to 21 cm. (8¼ in.), that is, corresponding to an image angle of 83 deg. The curvature of the side of the square measured on the photograph corresponding to the last angle amounts in both examples to about ½ mm., and agrees sufficiently well with the error 0.4 mm. according to the calculation.

It is certainly not my wish to assert that these curvatures, although distinctly visible, prohibit the employment of a lens for the large angles indicated above, and I also consider that the far larger errors shown by some of the more rapid symmetrical lenses, even for smaller angles, of about 70 deg. angles more frequently occurring in practice, are generally not of a serious nature, i.e., the symmetrical lenses are *practically* free from distortion. If the above article be read carefully, it will be perceived that it is not an attack on the symmetrical lenses, but a defence of the unsymmetrical against remarks such as the quotation from E. Holm's book cited at the commencement of my lately published article. This defence was not based on mere vague statements, but on numerical data accessible to all who wish to prove its accuracy. The curves emphasise the fact that "there are unsymmetrical objectives in which, for the most important cases, distortion is eliminated to a very much more perfect degree than is possible in symmetrical objectives of a like rapidity."

DR. E. WANDERSLEB,

*Of the Scientific Staff of Carl Zeiss, Jena.*

## MR. F. C. TILNEY ON OIL PRINTING.

[On Wednesday of last week, the North Middlesex Society criticised the oil prints done by members, exhibited a number of examples of his own work in bromoil, and had some hints given on the practical details of the process. Omitting the details, we give the text of the lecture in the speaker's own words. We learn that the effects obtained by Mr. Tilney obtained general admiration, and we congratulate the North Middlesex Society on persuading him to step from the seclusion to which the critic is wont to withdraw himself. As one member expressed himself, the syllabus of the North Middlesex was thought to be deficient if it lacked a lecture by Mr. Tilney, and it is therefore good news to hear of his readiness to take his audience into his confidence in matters of photography.—Eos. "B.J."]

the orderly mind, which will have everything perfect, or on the attempt, before the moment of exposure, perhaps printing process excels platinum; but the fudger and the artist, who makes fine pictures from frightful negatives, wants a process that he can control. He is then not printing photographs at all; he is print-painting pictures by a bastard method—that is, neither art nor photography entirely, but a dash of both. Co-ordinately, he himself is required to be both painter and photographer. He can only tell whether he is of this choice blend by watching the effects his pictures upon others. Putting it broadly, and with a very general application, the worse photographer he is, the better will be his oil prints, and *vice versa*.

To use a controllable process certain things are indispensable. First, one must see that the print yielded by a certain negative is capable of improvement. Many photographers do not get far as this stage. Second, seeing it needs improvement, one must see also what would improve it. Fewer still arrive at this point. Third, one should know exactly how to set out the improvement, and how to pull all together to make a plastic completeness. This only an artist—either by birth or

education—can achieve. The artist by education is the best equipped.

Give him your oil print to develop, and he should, other things being equal, beat your photographer *per se* hollow. Now, what do I mean by "artist" and "education" in this connection? I do not mean the successful gold medallist of the life and antique schools, the winner of wall-paper competitions, and so forth. I place the ordinary photographer miles before these in the matter of landscape art. The educated artist is the man who has gone about wishing to use his eyes, and this is what photographers *do* do. He learns by heart all the gentle beauties that belong to the play of light over things, and he fosters his feeling for rhythmic line and mass by attempts at composition, which improve as the feeling waxes. In this manner does the photographer become qualified to use a method that is positively and completely artistic, and not in the least photographic.

But if a photographer use such a method *without* being able to avail himself of this adaptability, he would surely do better to use an automatic process that he cannot interfere with and spoil.

I do not say that there are not negatives from which a straight print in oil—if it could be done quite automatically—would not be beautiful and perhaps have qualities that a platinum print lacked. But the more beautiful the ideal photographic picture, the less is it likely to be well served by a method of control.

In the prints lent to me a few, and a few only, show the eager and grateful use of the control which oil-printing offers. If I had been allowed to see straight prints of the various negatives, I should have been able to tell how much these particular examples have *lost* at the hands of the oil printer. Here and there it appears as though no effort had been made to "treat" the subject at all; but there is nothing to be gained by simply dabbing to let come what may. Straight printing in oil is an anomaly.

As to the bromoil method I am positively untutored. But I do not think one is necessarily badly taught, if self-taught. One learns more effectually by bitter experience than by receiving precepts at one ear and letting them escape by the other, and by watching another man do the work. All one sees or hears has to be confirmed by practical experience before it becomes a personal possession. My very first attempt was better than the second, because I went carefully to work. In the second I went with too much bravado, and found I had dabbed on a quantity of pigment that I could not get rid of again. The pigment supplied I found of the consistency of new putty. It had to be "knocked up," as house painters say, with a considerable amount of medium. I had some of the motor petrol that is said to be indispensable, but I found it useless except for the ordinary purposes of similar volatile spirits. I tried linseed oil, but that took too much pluck out of the ink and was too slow a drier. Next I tried Winsor and Newton's copal oil medium, and found that answer very well, but finally found that a tiny touch of megilp worked better, because of its containing more varnish than the painting medium. I believe that in various contingencies all these may be profitably used. Sometimes, for instance, the megilp dries before one has said the last word to a particular passage, and to those who work slowly, as I do, this is a disadvantage, and the pigment is more conveniently kept workable longer by a touch of something less siccative in its action. Mr. Welborne Piper, the honoured inventor of bromoil printing, works, I understand, very quickly. But such prints of his as I have seen—only one or two, to be sure—do not show much attempt at treatment; they are rather particularly good examples of the straight print in the controlled process. But such work does not display the strength of the method. In

the four or five humble attempts—my very first, I beg you in mercy to remember—there will be seen to be some attempts to supply what pictorial qualities the originals seemed to lack.

In the matter of brushes, I use the *piéd de biche* so highly recommended by M. Puyo. They work very well; but I also have a set of the same sizes and make in the straight-cut pattern, and I feel bound to say that I find they work well too—just as well. Still, the difference is convenient for identification, for I make a rule of inking with the oblique brush and spreading with the straight. It has been said that "hopping," as it is called, is not only undesirable, but impossible, in bromoil printing. Against that I would plead to be allowed to "hop," all the same, if I am to use the process at all. The inexpensive wire arrangement of Messrs. Griffin is indispensable to me; it saves so much muscular effort, and can be used so lightly and so briskly that the hand cannot compare with it. "Hopping" does for me what a thinned-down pigment does for others: it gives smoothness of tone. But it also has this advantage: Since the ink is still what I call plucky, the utmost definition, contrast, and force is possible by using a brushing action instead of the tapping. This, for some reason or other, cleans out the lighter passages and sweeps the ink from them on to the darker, which rapidly gain strength of colour. In the landscape I show you the brushing action has brought out with much vigour the leaves in the light and shade of direct illumination. These trees were "brushed" after all the rest were "tapped," at which stage there was no difference of texture in them.

I find it possible, also, to take out quite white lights with a stiff little brush, dipped in water, and pure water I use liberally on the skies. Without this it is impossible to get the proper key of brightness. Upon the wet gelatine an inked finger seems to be the most useful implement for drawing clouds; but the other parts of the sky I can only graduate by "hopping."

In starting a subject one should take a print in hand and consider it for five minutes comfortably and quietly. Ask the question, "Now, what shall I do with this? What shall I make the subject, and what shall go? Having decided what is to be the *pièce de résistance* of the picture, next think out how it is to be worked up to, what must be suppressed, what broadened, what emphasised, what made more contrasty, and what taken out altogether. I have found it possible in this process to remove the upper portion of a large gable and to turn the bottom part into a tree, and such changes have been said to be impossible in bromoil.

F. C. TILNEY.

## A PROVINCIAL AND THE PROFESSIONAL PHOTOGRAPHERS' EXHIBITION.

AFTER the very varied standard of the last exhibition, the high standard of excellence attained by all the chosen pictures comes as a pleasant change. The visitor is immediately struck by the general lowness of tone of the prints, which still retain, however, a beautifully round bold appearance. Doubtless some of these prints have been intended for exhibition in out-door cases, when they would, perhaps, show to even better advantage than in a room. I do not mean to suggest that any of the exhibits are one whit too dark, for in fact the printing, whether in carbon, or in a few cases platinum, and in one albumen, is, like the negatives, an example of perfect technical work. The fact remains, however, that, even with a most fashionable clientele, there would be a danger of some of these beautiful specimens of correct tone-value being returned as too dark. "My face is so black, you know." If all of this work is exactly the same as sold to the customer, then the public taste is higher than I thought.

The method of selecting the exhibits and exhibitors has been very successful, but personal selection is never to be relied on. To speak of one firm whose specimens I know by heart, only one of their six ought to be included amongst their twenty best recent pictures.

Strong concentrated lighting is the almost invariable rule of the examples. Personally I have been going strong on this as distinctive of my own work; but apparently the general trend has been in this direction. Why this strong lighting should be called "Rembrandt" when used on profiles and three-quarter face heads and not otherwise, I fail to understand; but there are, shall we say for convenience, a few "Rembrandts." Very different they are, too, from the old examples. The high-lights, as with all the high-lights in the room, are not white paper. Here and there, perhaps, there is a spot the size of a pin-point, though a bright, sparkling high-light proves on examination to be full of gradation, and, in



places, nearly as low as half-tone. The shadows, to give the necessary breadth, are of course dark, but quite transparent. Overdevelopment, at least with these representative firms of the best in photography, has disappeared.

The backgrounds are all very dark, but there is no example, we think, of the perfectly plain ground, all grounds here shown being broken up very, very slightly. Downey has two fine oval whole-plate heads against a medium-tone ground, graded from top to bottom, the lightest part being against the head.

Two or three firms have examples of the multiple paper mounts, not more usually a ready-prepared commercial mount is used.

It is rather extraordinary that so many of the best firms should be using mounts with the printed borders. The copperplate certainly does not harmonise in any way with any process, and gives one the impression of bad taste. In spite of the price of platinotype paper, there are some cabinets masked out on to 12 x 10 papers and date-marked. Turner and Sarony have, in addition, added, presumably by a second printing, a border in middle tint round the portrait. Carbon is the favourite process; a colour between red-tink and sepia is a favourite.

The examples of multiple mounting are, as has been noted, few. Anyone who uses this method personally will not find the reason hard to seek. The time, trouble, and waste are very heavy, and in a high-class business it is usually found impossible to charge extra for the mount.

All the prints strike one as being perfectly finished. Those of C. Beresford have more of the amateur look than any, and are therefore duly commended by Mr. Tilney in his review from the artist's point of view. The very close cutting of the prints is mere eccentricity, and spoils the balance and composition entirely. In every case but that of a print of a girl preventing herself from falling the heads are far too big for the space they occupy. In one print it gives the sitter, a young boy, the appearance of a badly deformed and enlarged head. We really must digress to ask why Mr. Tilney should assume that the professional, through ignorance and incompetence, artistically falls short of the results desired by the public. This shifting of the blame from the broad shoulders of the public to the overburdened ones of the photographer is unjustifiable, and shows ignorance of the great and glorious British public. Kipling, though neither art critic nor photographer, but a keen observer of men, knows better. He says, in one of his short tales: "She knew that the public wants to be made to look pretty in a nice card at a moderate price." This is probably slightly misquoted, but woe to the photographer that doubts the truth of the meaning.

It is obvious that operators who can produce work of the style and beauty of that here shown could, at will, produce practically any effect desired, and the fact that the show has a certain general likeness merely proves that the business heads of the firms concerned are assured that this type of work is the one that sells. It shows lamentable ignorance of the public mind to suggest that even one in a thousand is prepared to take an absolutely truthful

likeness in preference to a very flattering and less literary photograph.

Only the other day I photographed an old gentleman in his ninetieth year who disliked medium retouched proofs because they made him look too old. Mr. Tilney forgets that the minority who know or care anything about art are infinitesimal, and the chance of a photographer having a sitting from even one in a year is smaller still. Is he to turn away all his other customers on the chance of getting that one? Supposing Mrs. A presents Mrs. B with a portrait that makes the donor look charming, vivacious, and young, is it human nature in any set for Mrs. B to return the compliment with a presumably artistic contraption that shows her in her worst mood at dusk?—for of course no photograph is a picture unless ugly.

To repeat, the general tone of the exhibition is repose, the lighting concentrated, the backgrounds subdued, the pose graceful, the process carbon, the mounts the manufactured article and light in tone. All of which latter look well, although exception might be taken to Mendelssohn's beautiful warm brown albumens on light grey mounts.

The speed of modern plates has created a new era in child portraiture. The charming expressions secured by Messrs. Turner and Drinkwater in their group of two boys and a dog is an example of an evidently instantaneous exposure, as is also their charming study of a child on a polished floor.

As we have said before, general low tone distinguishes the exhibition, but one or two lighter efforts relieve the show. A beautiful little coloured cabinet by Drummond, Young, and Watson is entirely in light tone; H. P. Robinson and Son have a nice study of a boy in a light suit against a light ground. Messrs. Ellis and Walery have two against light grounds, but are rather cut away from the ground—very suitable for stage portraits, such as theirs, but rather hard for ordinary work.

Moffat's fine Court-dress study is a great example of low-tone work. The high-lights are very small in area. Mr. Moffat has also a fine study of a man, where the hands are well placed and evidently characteristic. His piano group shows the difficulty of this class of work; though perfectly natural in pose and accessory, yet it smacks of the studio. The child studies are very charming. All H. P. Robinson and Son's children are perfectly childlike, whilst a fine child study by Miss Caswell Smith is, perhaps, one of the pictures that will be remembered longest.

Martin Jaconette has six very nicely lit portraits, which, even in this collection, are of noticeably excellent technique. I do not think the two back-view child studies by Lankester can be called professional portraiture. No mother would accept them. "I must see her eyes," she would say.

Gordon Chase also shines with a child group which is evidently what the public call a snapshot of three pleasant children examining the little dicky bird at last provided after long promises. "Look for the little birdie, darling," is as common now from mothers as ever it was from photographers. COUNTRY PRO.

THE LATE G. H. MARTYN.—We regret to record that Mr. George Henry Martyn, of the firm of Messrs. G. H. Martyn and Sons, photographers and photographic dealers of Cheltenham, passed away, after some few weeks' illness, in his 81st year. He had been in photography since the year 1851, and, we believe, in the early days contributed articles to the "British Journal." He had been resident in Cheltenham as a photographer for over thirty years, and was highly esteemed by his townspeople.

PHOTOGRAPHIC SURVEY AND RECORD OF SURREY.—The annual meeting will be held in the Electric Theatre of the Crystal Palace on March 14, at 4 p.m., when Mr. H. Keatley Moore (Mayor of Croydon) will preside, and Sir Benjamin Stone, M.P., will deliver an address. A lantern lecture on the work of the survey will be given at 8 p.m. A selection of 700 prints will be exhibited in the South Nave, and will remain on view till March 21, during which period a lantern lecture will be given each evening in the Electric Theatre. Full particulars of the work of the association may be obtained from the hon. sec., Mr. Frank F. Wood, 11, Milton Road, Wallington.

"ENSIGN" ROLL FILM MONTHLY COMPETITION.—The three-guinea Holborn-Ilex magazine camera offered every month by Messrs. Houghtons Ltd. for the best negative on Ensign roll film, has again gone to India, a sign that Ensign films are in very great demand there. The prize-winner is Mr. R. J. Macnabb, The Residency, Bolarum, Deccan, India.

CATFORD AND FOREST HILL PHOTOGRAPHIC SOCIETY.—The third annual exhibition will be held on March 27 and 28 next at St. John's Hall, Devonshire Road, Forest Hill. Entry forms may be obtained from the hon. secretary, Mr. W. T. Browne, 169, Woolstone Road, Forest Hill.

PHOTOGRAPHS OF SHOP WINDOWS.—Apropos of our reply to a correspondent, we have received from Mr. S. Porter, of Landsend, Chippenham, two photographs of the window display of a tobacconist in his town, to whom a prize was recently awarded. Mr. Porter does not mention the method which he employed to get rid of reflections of opposite buildings, but the photographs show that he has been extremely successful in dealing with the subject.

## THE MULTIPLE MOUNTING OF PHOTOGRAPHS.

[Mr. Frederick H. Evans' lecture and demonstration before the Royal Photographic Society was reported in our columns at the time, but on the publication of the full text in the current "Photographic Journal" we must do our readers the justice of quoting from it such portions as can be separated from the context of the examples to which the lecturer made constant reference. Even thus shorn of its adornments, the paper conveys the best instruction in the modern practice of multiple mounting which is at present available, and amateur workers in particular may be referred to it. The personal labour attached to the work will, we fear, discourage its use by the professional, or will limit it to the fortunate few who can command their own prices—and some customers.—Eds., "B.J."]

Even the simple sticking of a print on to a plain piece of paper or card may easily give rise to error. The position of a print on its mount is not a matter allowing for any incursion of personal "taste"; there is but one proper place for it; and that, as a first practical instance, I would like to insist is *not* in the centre. It has always been the practice of the professional mounter to put it there, I know: mainly, I suppose, because that is the easiest and quickest; the centre of a mount is so quickly and easily struck and the picture placed there as quickly. Most illustrated books have their pictures



Fig. 1.



Fig. 2.

mounted so; and the inevitable and ugly result is that the picture looks as though it had dropped, or that the paper had been trimmed unequally and that the picture was really *out* of centre. Compare figs. 1 and 2.

### Rules for the Margins of the Mount.

The top margin must be less than the side margins; both side margins must be equal; and the bottom margin must be greater than the side margins. Actual proportions will vary with shape of print and size of mount, but the above forms a general rule from which there is no appeal; for though the following exceptions seem to upset this "no appeal" dictum, the result of the exception is but to give the appearance the above rule enforces.

An exception to the rule comes in when we have a long narrow (vertical) print to deal with; if we adhere to the usual proportions, those good for a squarer picture, we shall feel that the top margin looks as though it had been accidentally cut off. If the same picture is mounted with a much greater proportion of top margin and the sides reduced, it will appear precisely as though the usual rule had been followed; the length and narrowness give this illusion. We are compelled, if our æsthetic sense worries us in these minutiae, to give such proportions; a sense of proper balance is not obtained otherwise. The same exception obtains in the so-called "landscape shape" picture. This must be treated in an analogous way to the vertical print; the sides must now be much greater than they would be for a squarer print, and the bottom margin slightly less than the sides. This latter may be varied. In some cases where extreme width of print is not sought to be enforced, a greater proportion of bottom margin to that of the sides may be allowed.

### On Acquiring Certainty in the Choice of a Multiple Mount.

It may sound very arbitrary to say that there is but one right way, and that there is no appeal from it; that there is but one way of placing a print on a mount as to proportions in margins which will fully satisfy the critically æsthetic sense; but I am sure that if those who dissent from me here will work habitually in this search after the one and only way, they will come to recognise that there is really

no appeal from the one proper way, when it is found, of apportioning the margins; that it is right one way (the way I have indicated) and wrong every other. "Taste," that doubtful quality we unduly pride ourselves upon, is no helper or arbiter here; its only use is to help us to know when we are wrong, not to tempt us to insist that our wrong is right, right because our "taste" has invented it. The eye gets gradually trained to an instinctive sense of correct proportions. It is not a thing to be learned in a moment, but has to be patiently worked for by study of good examples. The best method of gaining it is to get into the habit of analysing our impressions. When we feel satisfied, work out why we do so; see if we can account for there being no cause for, or sense of, discontent. If we are in the least unsatisfied or restless, analyse that, and see what gives rise to it, and when mounting try and try again, by no matter what minute or numerous alterations, till we reach that curious but delightful state when we can exclaim, "Ah! that's it. I've got it now. I feel that's right at last!"

Having thus settled the proper placing of the print on its mount, we may now proceed to consider its treatment if it is to be placed on more than one piece of paper; and few I think will nowadays be content with the mere sticking of a print on a single mount, however correct that may be in colour.

In the first place, I should like to insist that simplicity be made the chief aim; and though you may smile as you study some of my examples, extending as they do to as many as eight papers, if the result is a simple one, if it has an effect of simplicity, my axiom has been observed. Mere number, mere complexity of tints and papers, only add to the difficulties, both technical and artistic, and distract attention from the picture. It should not content us if the comment, when we produce our latest gem, is, "Oh, what a pretty mount! what a number of papers!" That comment, as to the wonder or beauty of the mount, should come last, not first.

As we are dealing specifically with multiple mounting, I need not argue as to whether it is not best to be content with but two papers, that is, only one between the print and the final or bottom mount. That is very often a quite sufficient method; but as we are now dealing with another method, which is really an easier way of arriving at the French method of surrounding a drawing by ruling ink lines and filling up some of the spaces between them with faint washes of colour—I will deal only with multiple mounting, which is a reaching after the French method by superimposed layers of tinted papers cut to various widths.

A point we may notice here is, what sort of framing we desire to use. If we want a wide or elaborate frame, our mount must be studiously simple; if we are content with a narrow and simple moulding, or a *pas-partout*, we may be elaborate in our mount; but we must not be elaborate in both mount and frame, else we shall reduce our picture to the lowest value of all, instead of its having the greatest.

### Choosing Mounting Paper No. 1.

Our first step is to decide on the colour and texture of the final, the bottom sheet; this must be of a tint that will best show off the main effect of the picture. And here our first difficulty arises, in the fact that our print will most likely not have all its sides of the same depth of colour. If it is a portrait study, we may have the sitter's light dress at the bottom and a dark background at the top; if it is a landscape, we shall perhaps have a heavy foreground at the bottom and a light sky at the top; and the colour of mount that will suit one may injure the other. We must therefore choose a tint that will sufficiently enrich our dark portion, but not ruin the values of the lighter portion of the picture. If our mount is to consist of only two pieces, it will be easiest to do this by the first layer being so chosen as to just detach the print from the main mount, and help the values of both it and the print. In the case of so simple a



mount as two layers only, the first one may be anything from one-eighth to half an inch. But if we are to use three or more pieces, then the first layer is best kept to one-eighth or less; it will otherwise usurp too much attention.

Supposing that our subject is a portrait against a rich dark background, I would suggest first trying a light bottom mount, though at first this may seem wrong, for a dark subject or background seems naturally to call for a dark mount to relieve it. But you will find that very often a dark mount will rob your background of its depth and richness; and that a suitably light mount will enrich it and give it new value. And here comes in the advantage of using three or more layers; there is a certain shock to the eye in a dark background coming directly on to a light mount, it looks too cut out, or cut off; but if this is bridged over by suitably toned intermediate papers, the shock is not felt. A case may occur where a light background must be kept as light as possible, and then a dark mount is best.

It may, of course, happen that a print having a dark background will look as effective on a dark mount as on a light one; if, that is, the subject is so rich in itself as to make the background to it comparatively negligible.

### The "Design" of a Multiple Mount.

The width of the various pieces of paper used are, of course, determinable solely by the worker's taste and skill in design. The only method of gaining success is the old one of trial and error; plus infinite patience; plus the refusal of everything that is not absolutely satisfying to one's most critical judgment; and plus an ample supply of papers to work with. As the total effect of this sort of mounting is to form an inner frame to our picture, I like to follow the French method I spoke of; and if our ruled lines are made by very narrow dark (or light) colours, and our washes made by faint tints between them, we shall achieve a similar effect, only in a much easier way.

### Avoid Colour in the Mount.

Before considering the methods of choosing and using the various tints and widths of papers, I would like to say a word as to colour. No colour should be selected or used that will have a final effect of colour as colour. If we do, we shall inevitably spoil or vulgarise our print and only achieve a garish, inartistic effect. Ours is a monochrome art, and we must beware how we endeavour to enrich it by means of colour in our mounts. The tints of our papers must be such that they are felt only as low-toned washes, or narrow dividing lines; their colour must not be felt in and for itself, but only as a differentiating something to what is on each side of it.

Many of the tints in my collection of samples are not procurable now; it is one of the exasperations of this work that fashion rules here as elsewhere, and what is in stock one "season," is not to be had for love or money the next. Also it must be acknowledged that it is often next to impossible for a maker to so re-colour his vat that an identical tint shall be repeated. Therefore, if one falls violently in love with a certain tint, it will be well to lay in a reasonable stock of it; as, perhaps, later on, when it can no longer be had, a series of mounts cannot be completed. Against this must be placed the caution that what one likes very much at first may soon pall or prove too difficult to use, and a large stock of it will prove a nuisance. But papers that are at one time tired of, or found difficult to use effectively, may afterwards, with the advent of other tints, prove quite valuable. Also a tint that is found quite impossible when used in any width of one-eighth or over, may, when used as a mere dividing line between other tints, prove extremely useful. It is also as well to try and find out if a tint that we propose using in marked widths is really permanent in colour. I lately had some frames back from exhibition and was amazed at my lack of taste in using a certain colour, so bad it now seemed to me; but on lifting it up I found the reason—all the tint I had chosen for it had faded out of it, leaving the horrid effect that so amazed me. Of course, if a print is destined for the portfolio only, this need hardly concern us, as the short time it is exposed to strong light will not hurt it. But the prints I referred to were on the Irish Exhibition walls for six months, and in I know not what strength of daily sun.

### The Practical Way in Multiple Mounting.

To turn from the theoretical to the practical. I find it a good method to save time when selecting tints, to go through one's stock and cut a small piece, say 7 x 5, from each paper; I then true up

each corner, and sort them in lights and darks, etc. These form a sort of palette of tints and can be very readily chosen from as we proceed. Suppose we have decided that our mount shall be made up of these cold blues: I choose what I think will be best as a first layer, and put the top left-hand corner of the print into position on it, showing the exact margin to be used. Holding them together in the left hand, I pick up the next chosen tint and place it behind the first two. Holding them out at arm's length I try the effect of various widths; when satisfied I place the next tint behind them and again test the whole; if satisfied I place them on the final sheet, and as near as possible the proper position on it with the left hand grasping the whole. Holding all up at arm's length and in an even light, the entire effect (as regards the top of the print, at any rate) can be judged. If the slightest feeling of discontent is felt, I make alterations in widths, or change a tint, in either a space or a line, spending anything from five minutes to half an hour until quite satisfied.

I find the time spent—I won't say wasted, for the mere critical exercise is valuable—in this fascinating work is not in the actual cutting and pasting, but in the selection of tints and widths. Sometimes nothing will go right; the colour of a print proves baffling to anything like perfect treatment; when this is so I lay that print aside and give it a rest; later on it will likely come right quite easily when one feels fresher. When at last satisfied with my experimental mount, I lay the collection carefully down where it cannot be disturbed; indeed, sometimes I measure and note the various widths and papers; for it is aggravating if they should get dislocated and one has to do all the experimenting over again. It is now easy to pick out from stock a sheet of each of the papers to be used; and though I urge the advisability of being liberal in the size of the pieces to be cut from, a wise economy will lead us to look among our cut pieces rather than always to cut from a whole sheet. To save time in turning over scraps for this purpose I keep them in piles on a shelf, each pile being of associated tints—greys, creams, blues, browns, etc.

### Securing Squareness of the Tints.

Before sticking our print on its first paper, it is imperative to see that it is truly squared up. The least error will be so magnified with each successive piece of paper as to lead to an almost unbelievable result. Each layer may be measured and cut with scrupulous accuracy, but any initial error in the print itself being out of square will throw all out and lead to a quite absurd amount of error at the end. Placing the print on its first sheet I attach it by a small dab of paste at the top right-hand corner only, and only at this one corner for this reason: it is best to use as thin papers as possible to keep our mounts reasonable in bulk, but thin papers, especially if of a soft and absorbent kind, cockle so easily as to make this multiple mounting very difficult to keep neat and workmanlike-looking. If we attach by this one corner only at first, and paste the other, the top left-hand corner, when all the papers are in position, it will materially lessen the risk of cockling, as each paper can be put perfectly straight with an equal pressure over all, and the risk of uneven tension being set up is more easily avoided. It is also as well to use the mountant as dry as may be. With some papers that will cockle, do what one will, it is as well to put the paste under the body of the print, not behind the corners of mount; the uneven tension may then be a little less visible. But this plan does not make so neat a finish, as the corners will not lie flat on each other, but stick up a little, and so rob the final effect of its full sense of design, especially if many fine lines have been used. Pasting by these two top corners only is usually sufficient, especially with papers that lie quite flat. Any of the modern mountants, of which the euphonious "Higgins" was the forerunner, will give a sufficient adhesive power without being too permanently attached. I think it is also well to lay stress on a certain inherent value in our photographic picture, and not to rob it of its identity by pasting it down all over. No original drawing of any worth is ever so treated; it is always interesting, sometimes valuable as evidence, to turn up the back of an engraving, drawing, or etching and see what style and texture of paper had been used. Our photographic picture is also a thing of itself, and should be so respected, and not have its identity lost by being made one with some other and alien piece of paper or card. Besides, some future owner of your, perhaps unique, print may not approve of your

scheme of mounting, and will want to detach it and treat it afresh; and one should only have to soak off a print as a quite last resort.

#### De-mounting Prints.

How often, indeed, have I had to renew mounts myself! Something one was quite content with at first proves by lapse of time to have been an equally marked lapse of judgment or taste, or a further selection of papers has made a better treatment in parts of it possible. Or, if we are blessed with a good "critic on the hearth," and She receives with a cold sniff of disapproval the new mount we hold out in conscious pride, it is good, when with fresher eyes and unbiassed vision we are ourselves able to realise its shortcomings, to be able to detach it so easily and safely. But even though stuck in this slight manner, it is best not to attempt to remove it from the front. I find a safer way is to place the print face downwards, lay hold of the corner of the paper next it and pull it back; as soon as it begins to leave the print, hold the latter firmly down by the thumb of the left hand on the minute portion thus showing, and continue pulling the mount away from it. To pull a mount off a print in this manner is quite a different thing to pulling a print off a mount; it may then either tear or may split, and leave the print there so thin as to injure the tone value of that corner when re-mounted.

#### Marking Mounting Papers for Trimming.

We have so far only attached our print to its first paper; we have now to trim that to its required margin. This I prefer to do by the guillotine cutter. A knife, on zinc or glass, leaves an undesirable edge or burr to the paper, very often quite spoiling the effect of the mount when seen in oblique lighting. The burr may be taken off by rubbing down with an ivory paper knife, or the thumbnail, but on some papers that leaves a shiny surface that ruins the appearance of the mount.

Unless we are gifted with a very accurate eye, it is best to mark the width to be cut away. I use a hard retouching pencil, and with it make a small dent on each side, top and bottom, when I want to cut. Placing this on the guillotine cutting board, I make these dents come accurately at the cutting edge by denting the paper with the thumb just behind the pencil mark, so that it will be just cut off. This will ensure perfect straightness, and by placing a steel straight-edge over the paper close to the cutting edge the paper will not buckle as the blade comes down along it, however thin the paper may be, or even if not quite dry, though that latter is a very unadvisable thing to risk.

As regards cleanly cut edges, etc., all workers have their predilections; mine is for neatness, precision, and high finish, when I can attain to them. But this is not, I think, inconsistent with artistic breadth; it should not merely connote finicking or niggling work, undue sense of detail, etc. Breadth of impression need not infer slovenliness of technique. One sometimes sees the affectation of a roughly torn edge to either—or both—the print and the mounting paper. This is done, I suppose, to imitate the deckle-edge naturally given by hand-made paper. But such an edge deceives nobody; and, why imitate? why not be content with the natural condition of the paper we are using? These methods never add to the beauty of the picture to me, but rather detract from it. Picture, mount, and frame should make a harmonious whole, with no disturbing elements in it.

In considering our widths of margins we must bear in mind when deciding on the bottom one that if we want to place a title or impress a monogram we must leave room for it. The widths round top and sides are governed by rule, but that at the bottom may vary, sometimes having a good effect fairly close up, and sometimes only right when much further away. As a rule, this bottom width should be twice or more that of the sides.

#### Some Rules in the Use of Tinted Surrounds.

As to design in this work; for a series of papers merely placed one upon the other without suggesting some sort of design, becomes only wearisome and meaningless. Here, of course, the personal equation is everything; nothing but experience, and the most fastidious rejecting of everything that does not quite fully convince and charm us, will tend to success. There are so many ways, alas! of going wrong in this little department of our photographic hobby.

When narrow spaces are ruled in, enclosed by very fine lines, the various spaces must never be exactly repeated, as this gives a dull

sense of monotony; it is mere meaningless repetition with no effect at design; but if the spaces are nicely contrasted, variety of effect will be gained, and a sense of design given. A close approximation to a faint wash of colour may be gained by making a very slight change of tint, one grey, for example, being followed by a very slightly darker or lighter one; or by using the same tint again, but enclosing it by very narrow lines, dark or light, by which the colour between them is heightened or lowered, as may be desired.

Black, it must be remembered, is only possible when used in lines of extreme fineness; and, though so narrow, they are easy enough to cut, but they must be cut correctly at the first, for if not found fine enough they are all but impossible to re-cut, and a new sheet must be used. If a real change of paper is made for such an inlay, to get a different tone, care must be taken not to over-do it. If kept in due restraint quite elaborate effects may be gained by quite simple means. Using light papers of marked texture will also give a good inner-frame effect.

#### The Effects of Light and Dark Tones in a Mount.

It will now be seen that the choice of successive tints for either lines or spaces must be very carefully made so that they do not in any way alter a tone value or effect. A too light tone will very perceptibly darken another light one; while a too dark tone may unduly lighten the one we have already chosen as the only possible one at that stage. Colours that one would not think could go together may, when used in such moderation as very narrow lines or very narrow spaces, prove quite acceptable: therefore do not too readily give up a strong colour, not till it has been tried in very narrow lines, etc. Brown, blue, and grey sounds rather alarming as a suggestion for a mounting scheme; but in a case where I wanted to increase the effect of sombre richness by harmony rather than by contrast, a little scheme of two shades of blue with narrow brown lines enclosing a dark grey, came quite successfully; and though it has five papers, the result is quite simple, with no feeling of undue elaboration.

When choosing grey papers, avoid the cold steely sort, they are too difficult to use, except, and that rarely, with special shades of blues; with any other tints they seem to get too pinkish, or too blue, and are quite impossible. It is the neutral range of tints we shall find most useful. In browns, avoid the hot or yellowish sorts; they work up too suggestive of mere colour.

One good comes from the non-ability of getting the same paper in succeeding seasons, and that is that one is compelled to design and work out new effects; grooves or mannerisms get difficult, and variety is enforced, which is a very wholesome testing of one's individuality. I may perhaps suggest a plan of my own: never to use an already completed mount as a pattern, unless one is making an exact replica for a special purpose, and with a perfectly similar print, similar in depth of tone, that is; for the same subject, if lighter printed, will need a quite different treatment in its mount. I prefer to think out each scheme afresh, repeating from memory rather than from example; this compels variety and the finding of new ideas, it avoids monotony, and largely increases one's experience.

Sometimes a darkish line is needed round a print, not close to, or next it, but just enough away to give the feeling of being close up. It actually next the print it would not have the frame effect desired; it is got by cutting the first layer to, say, one-eighth or three-sixteenths and then using a fine dark line, and then repeating the first paper to whatever width may be desired for the next space. If we repeat the idea as the outer border it will be best to make the line much broader, say one-eighth instead of the fine line we first used. This will vary the effect while having the value of repetition, and make a simple design but of very good form. Also, if this outer dark line came directly on to the light basal mount, it would be a little abrupt in effect, and it is much improved by the softening down the outer pale grey line gives.

#### How to Store Multiple-Mounted Prints Flat—the Cut-out Mount.

One great objection to this multiple system of mounting is that when prints accumulate and a pile is made, they cannot lie flat; they are all so much thicker in the middle than at the sides that the pile is a very unsightly and unhandy one, either in a drawer, cupboard, or portfolio. One way out of the difficulty is to keep the mount as simple as possible, using the fewest number of papers that one can, and then to use the last layer but one, untrimmed. If



then treat the very last sheet as a cut-out mount, cutting the opening in it so as to show exactly the desired proportion of the last one, which we left untrimmed for this purpose, and then lay the whole down on cardboard, the cut-out, especially if we can get it in a quite thick paper or thin board, will largely allow for the thickness of the papers inside it, and a pile of such mounts will be found to lie quite flat. I find it best, when using this method, to paste the untrimmed sheet on to the cardboard foundation, lay the cut-out sheet on to it, and then adjust the print and its mounting papers in position in the opening, all having been very scrupulously measured and squared up first. The true-ing up is more essential in every step in this method than in any other, as the cut-out sheet when finally put into position reveals errors in a most cruel fashion.

FREDK. H. EVANS.

#### THE KODAK COMPANY'S PROFESSIONAL DEPARTMENT.

It is probably no secret, even to those not engaged in the business of photography, that for years past the powers of the Kodak head office in Clerkenwell Road have looked after the professional photographer as persistently as so large a buyer of goods deserves. Photographers throughout the country have been kept promptly acquainted with the Kodak wares by the firm's travellers, and by the exhibitions of apparatus and apparatus which have been periodically held in the large centres. The local demonstrations, notably those of the Aristodion paper, have been very efficiently organised, and have been a means of bringing the professional worker directly into touch with the maker. These measures, however, were formerly taken almost exclusively in regard to the Kodak plates and papers, several details of which may be said to have been produced specially with a view to their employment by the portrait maker. During the last year or two professional supplies of all kinds have been taken up by the Kodak Company and worked chiefly from the London

of which are here kept ready for examination in a moment. We saw here some examples of a new design of background, to be called the "New Gallery," which are fine specimens of delicate painting, and lend themselves excellently to vignettes and effective portraits and light tones. Cameras and other photographic equipment equally figure in the department, as do also various types of furniture and accessories, in the design of which the makers are making a commendable departure from the hoary conventions of the studio. Of some other



quite new apparatus we may be able to speak later. It is sufficient to mention now the blocking and embossing room which is attached to the department in order to permit of urgent orders for mounts being promptly dealt with. Another shop devoted to apparatus enables such work to be quickly done, whilst a tour round the stock-rooms was sufficient to convince us of the powers conferred on the Clerkenwell staff by their large holdings of floating stock. Altogether it is satisfactory to find the professional photographer so



in Clerkenwell Road and from the provincial houses of the West-End and City depots still remain exclusively amateur. The firm's energies in the new direction have been in the hands of A. J. S. Catford, under whom is a staff drawn from the ranks of the profession, and therefore familiar with their customers' special requirements. A recent visit to Clerkenwell Road showed us the measures taken for dealing with this branch of the business. At hand to the exhibition gallery, decorated in a simple yet expensive style, which a photographer would profit by studying, a spacious floor, provided for the display of all the apparatus and accessories necessary in the professional photographer's establishment. The two photographs, taken from opposite ends of the premises, will give some idea of the variety and size of the stock thus available for inspection. As shown in the centre of the larger room, at one end of the show-room a studio is arranged with means for testing the systems of lighting (the Aristo lamp, arc lights, etc.) sold by the firm. A well-fitted dark-room immediately in the rear stands at the disposal of the photographer who wishes to test his exposures here himself. On the right in the smaller photograph can be seen a double block of backgrounds, some two dozen

thoroughly catered for, even to the provision of a certain amount of reading matter, issued monthly as "The Professional Photographer." This publication contains in each issue reproductions of notable photographers' work, and the professional worker can be advised not to omit a glance through its pages.

**OPTICAL AMALGAMATION.**—The current number of "The Prism," the little magazine issued by the Bausch and Lomb Optical Company, of Rochester, New York, announces a business alliance between the Bausch and Lomb firm, the Carl Zeiss Optical Works, Jena, and Mr. G. N. Saegmuller. The Zeiss Works become part owners of the Bausch and Lomb Optical Company, although the latter will still preserve its separate existence, and will see no change in its management. The two firms will co-operate to assist each other in every possible way by mutual confidence as to methods of manufacture, results of research, and business organisation. Mr. Saegmuller contributes to the alliance his mechanical skill and qualifications as an inventor of optical appliances and a constructive mechanic.

## MR F. C. TILNEY AND THE EXHIBITION OF THE P.P.A.

[The following letter, addressed to the secretary of the Professional Photographers' Association by Mr. T. C. Turner, of Hull, apart from its controversial passages, is particularly deserving of a careful reading, in that it represents the experience of a most successful and alert photographer. We give practically the full text of the letter. Mr. Tilney is well able to take care of himself, and we, on our part, need only say that Mr. Tilney was asked to give his impressions of the photographs, chiefly *because* he could not be suspected of looking at them from the photographer's standpoint, and secondly, because he was a stranger to the exhibitors.—Eds. "B.J."]

MR. T. C. TURNER writes:—My curiosity is aroused by the unsympathetic criticism in the "B.J.," which in the main suggests that the show is pretty dismal with its "banal smoothness," its "unalloyed vulgarity," its evidences of "old-time principles, methods, and traditions," and the absence of "freshness, which is now undoubtedly lacking in almost all professional work."

It is a scathing indictment, and it would be interesting to know if Mr. F. C. Tilney is a gentleman fitted by professional experience to be our judge. His comments strongly remind me of the lectures my late father received from his pupils (myself included) many years ago. My father was a photographer, then making some thousands a year, achieving a success based largely upon a keen knowledge of human nature, and—I am inclined to believe—a good deal of "tinkering" (if that is its proper description) "with the drawing and modelling of the features."

I find this evening that since those days I have photographed some seventy odd thousand sitters, and—alas, for well-sounding theory!—am more than ever convinced that "the old-time principles and traditions" are in the main quite safe to follow if success in business is the aim in view. The postulate of the professionals of the seventies and eighties were that clever lighting would make the sitter look his best, that clever retouching would eliminate the worst facial effects of business anxiety or physical or temperamental weakness, and that clever posing might make even the slipshod, slovenly youth look, for a few moments, a man.

And now we are assured in the columns of our leading professional journal that the modern amateur goes to work "with a captivating freshness of attack uncontrolled by studio paraphernalia," unenslaved by "studio routine"! Can anyone be seriously convinced that the old ideals of a good operator can be reached without long-continued practice, without personal contact, in a studio with hundreds, or even thousands, of sitters of every type.

Reading this somewhat ungracious criticism one is reminded of the habit which prevails with some writers on photographic subjects to represent professional photographers as men deficient in artistic abilities, and, persisting in this attitude, they ignore the fact that millions of their fellow-men and women have been, and are to-day, frequenting these studios and accepting with pleasure the work they, as critics, affect to despise.

There are scores of British photographers (and some have contributed to this small exhibition) who from end to end of the kingdom will probably be remembered when our unfriendly critics, who pose only in print, have long been forgotten. Is this popularity all based upon humbug?

Mr. Tilney mentions the reception of an amateur portrait with the remark from his sitter, "Well, that's the first photograph of myself that I have ever had taken that did not look smug, and it's the only one I ever liked." To those of us who spend our whole lives on the studio floor from early morn to dewy eve "the boot seems on the other leg," if our sitters describe to us their experiences at the hands of amateur friends honestly. It is pretty safe to assume that the public have always, and will always, recognise the fact that under the well-arranged studio light they are more likely to secure what is sometimes described as "a flattering likeness." And sooner or later the most enthusiastic itinerant photographer of the umbrella-brown-paper school comes to be of the same opinion.

The eternal law of "the survival of the fittest" applies as much to photographers as anyone else, and the people who paint portraits or take photographs regardless of the tastes or desires of their sitters are likely to weary pretty quickly, and men who embark thousands of pounds in photographic establishments are not long in deciding what the public require and will pay for. If a thousandth part of the unfriendly nonsense written about professional photo-

graphy carried conviction with it there would be a debacle such would sweep away the whole lot of present-day photographer "studio paraphernalia," "porcelain faces," and all.

No doubt there is a lot to be said for unretouched work, and a critic has omitted to recognise the fact that now many hundreds of "professional" photographers are working on these happy and economical lines; but there is also an unfortunate side to the medal, and it is that the public refuse to give more than 6d. or 1s. a dozen for the copies, and even when enlarged to 12 x 10, toned sepia and beautifully fuzzy, the market value seems to rise no higher than 1s., or mounted on an artistic shade of brown paper, 1s. 2d.!

But, reverting to the P.P.A. Exhibition, it is possible the "lay" public, after the assurance that "at least they will have the advantage of a select and bird's-eye view—a better view than can be obtained by promiscuous glances into the same old series of 'stagnant cases'"—will not feel over eager to swarm into the "B.J." Gallery, but we must hope all the same that it may be the means to establish a bond between (professionals) which shall be "commercially advantageous."—Yours sincerely,  
T. C. TURNER.

## Exhibitions.

## ILFORD PHOTOGRAPHIC SOCIETY.

THE annual exhibition of this society was held on February 26 and 27 in the Town Hall, Ilford. There was an interesting invitation section, and in the open competitive class the judges, Messrs. H. Bennett and E. T. Holding, made the following awards:—Silver plaque: (No. 92), "Profile Portrait," Oscar Hardee; bronze plaque: (88), "Roses," C. H. Hewitt; bronze plaque: (103), "Long Reach," H. C. Hornsey; bronze plaque: (162), "In the Transept—Wells," F. C. Boyes; bronze plaque: (166), "Diligence," F. A. Tinker.

## Patent News.

*Process patents—applications and specifications—are treated "Photo Mechanical Notes."*

Process patents—applications and specifications—are treated "Photo-Mechanical Notes."

The following applications for patents were received between February 17 and 22:

ANHYDROUS THIOSULPHATE.—No. 23,217 C/07. Improvements in the manufacture of pulverulent anhydrous thiosulphate. Verein Chemischer Fabriken. George William Johnson, Lincoln's Inn Fields, London.

FOLDING CAMERAS.—No. 3,630. Improvements in folding cameras. Arthur Lewis Adams, 24, Charing Cross Road, London.

ARC LIGHT.—No. 3,700. Improvements in electric arc illuminating apparatus, more particularly for use in photography. Josef Schmidt, 31, Bedford Street, Strand, London.

PHOTO-TELEGRAPHY.—No. 3,701. Improvements in the method of transmitting graphic signs, photographs, and the like by means of electric current. "Polyphos" Electricitäts-Ges. m. b. H., Bedford Street, Strand, W.C.

DEVELOPMENT-TANKS.—No. 3,721. Improvements in development tanks for photographic plates. George Frederic Green, Riccarton Studio, London Road, St. Alban's, Herts.

PHOTO-TELEGRAPHY.—No. 3,728. Improvements in apparatus for the telegraphic transmission of designs, portraits, and the like. Guillermo T. Guillén Garcia, 23, City Road, Finsbury Square, London.

DRY MOUNTING.—No. 3,737. Metal folder for use in connection with dry mounting of photographic prints and the like. George Wilson Morgan, 393, Union Street, Aberdeen, Scotland.

PORTABLE DARK-ROOMS.—No. 3,790. Improvements in portable photographic developing chambers. Jakob Wojciechowski, 31, Bedford Street, Strand, London.

CINEMATOPHGRAPHS.—Improvements in cinematograph camera. Ernest Francis Moy and Percy Henry Bastie, Greenland Place, Camden Town, London.

CAMERAS.—No. 3,849. Improvements in photographic camera



Thomas Charles Naylor and Otto Sichel, 1, Great James Street, Bedford Row, London.

IMPROVED PLATE FOR CINEMATOGRAPHIC PROJECTIONS AND APPARATUS FOR THE MANUFACTURE OF THE SAME. Jean Leon Muller and Jules Rousset, 7, Southampton Buildings, London.

IMPROVED PLATE FOR CINEMATOGRAPHIC PROJECTIONS AND APPARATUS FOR THE MANUFACTURE OF THE SAME. Jean Leon Muller and Jules Rousset, 7, Southampton Buildings, London.

# COMPLETE SPECIFICATIONS ACCEPTED.

Specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

IMPROVED TELEPHOTO LENSES.—No. 18,121, 1907. The invention consists essentially of a set of negative lenses which can be used singly or in groups, the combination of two or more enabling the camera extension to be greatly shortened for a given magnification. This combination can be satisfactorily made only with lenses of selected foci and radii, such as are described below by way of example.

Fig. 1 shows in section the rear portion of a lens mount, such

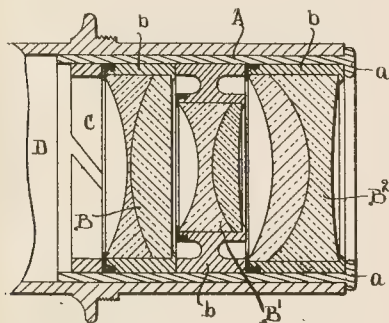


Fig. 1.

is used with telephotographic lenses, provided with a form of improved negative lens system. Fig. 2 is a diagram to show necessary optical data.

The adapter A, which carries the lens system, is provided with a flanged end a, against which the end lens B<sup>2</sup> abuts and in front of this lens are placed the remaining negative lenses B<sup>1</sup> and B<sup>3</sup> being used in the illustration. The lenses employed are chromatic doublets or triplets, the former only being shown in the arrangement illustrated. At the back of the lens system is used a retaining split ring C which holds the lenses in position,

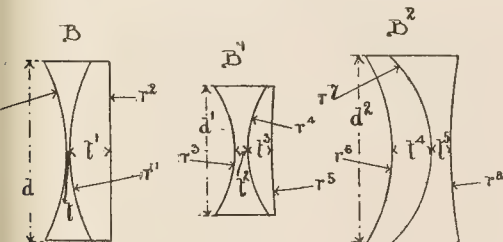


Fig. 2.

lens cells b however themselves fitting closely in the adapter. The set of lenses is introduced from the inner end of the adapter, which is removed from the main lens tube D for the purpose of inserting or removing the lenses. At the other end of the tube is the ordinary positive photographic lenses. In the illustration the lenses are shown of three different foci, the strongest being in the middle, and by properly arranging the order, inserting the diaphragms if necessary, various corrections can be made, while great variation in size of the image can be obtained using fewer or more independent lenses.

By this system the same telephoto lens can give a great range of magnifications with a small extension of the camera.

The following are the essential data for the arrangement of lenses illustrated, the letters of reference being shown on the diagrammatic view, Fig. 2;

$d$ ,  $d^1$ ,  $d^2$  are diameters;  $t$ ,  $t^1$ , etc., thicknesses, and  $r$ ,  $r^1$ , etc., radii of curvature for the surfaces.

## FOR LENS B:

Focal length = 65mm.

Positive element of flint glass, refractive index = 1.62521.

Negative element of crown glass, refractive index = 1.523.

$d$  = 25mm.

$t$  = 1mm.

$t^1$  = 5.5mm.

$r$  and  $r^1$  = 28mm.

$r^2$  =  $\infty$ .

## FOR LENS B<sup>1</sup>:

Focal length = 30mm.

Positive element of flint glass, refractive index = 1.61873.

Negative element of crown glass, refractive index = 1.53751.

$d^1$  = 19mm.

$t^2$  = 2mm.

$t^3$  = 3.2mm.

$r^3$  and  $r^4$  = 14.3mm.

$r^5$  = 172mm.

## FOR LENS B<sup>2</sup>:

Focal length = 50mm.

Positive element of flint glass, refractive index = 1.7509.

Negative element of crown glass, refractive index = 1.5005.

$d^2$  = 26mm.

$t^4$  = 5mm.

$t^5$  = 2.35mm.

$r^6$  = 26.20

$r^7$  = 18.93mm.

$r^8$  = 95.26mm.

The lenses are not separated, but are placed as nearly as possible in contact with each other. Alfred Edward Staley, 19, Thavies Inn, London, W.C., and Owen Wheeler, Strathmore, Prince's Road, Weybridge.

ROLLER-BLIND SHUTTER.—No. 4,830, 1907. The invention consists of a roller-blind shutter, by means of which exposures can be made during the movement of the curtain in both directions. It consists in enabling both movements of the curtain to be produced by means of a torsional spring arranged in or in connection with either or each of the curtain rollers and adapted to be tensioned in both directions, so that for the movement of the curtain in both directions, the drive can be imparted without the use of reversing mechanism. The absence of reversing mechanism such as has been used in shutter-mechanism of the same type wherein the actuating spring can only be tensioned in one direction, is an obvious advantage, and as compared with the mechanism wherein a straight wire spring or plate spring is adapted to be bent in opposite directions for moving the curtain upwards and downwards respectively, the torsional spring has the advantage of greater compactness and convenience. Reginald Hadden, for the Optische Anstalt C. P. Goerz Aktiengesellschaft, 44/46, Rhein-strasse, Berlin-Friedenau.

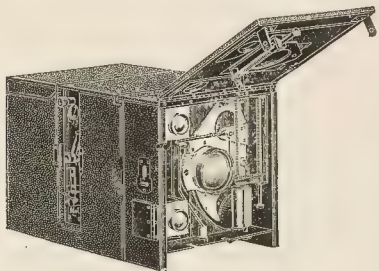
DEATH OF MR. P. E. NEWSTEAD.—Mr. Percy Eland Newstead, more popularly known as "Peter Eland," died on Saturday last at Idle, Bradford, at the age of thirty-eight. Although little known to photographers of to-day, those of ten and fifteen years ago greatly appreciated his contributions to the photographic press, under his pen name, and his humorous "pen" sketches, for Mr. Newstead was an accomplished black and white artist, with an immense amount of humour. He was with his friend, "Richard Penlake," one of the original sub-editors of the now defunct "Practical Photographer" in its early days at Bradford. Photography not affording scope enough for his vein of humour and his rare and versatile gifts, he entered the theatrical world, and during the past few years produced a large number of pantomimes, dramas, and music-hall sketches. His lectures on photography always drew crowded audiences, for his subjects were always unique, and he could see fun in everything. The terrible physical handicap under which he ran the race of life from boyhood to the grave failed to cripple his restless humour, and he was ever the incarnation of a jest.

## Dew Apparatus, &c.

The N. and G., H.S. (high-speed) Hand-Camera. Made by Newman and Guardia, 90 and 92, Shaftesbury Avenue, London, W.

Not to know the hand-cameras of Newman and Guardia is, of course, to write oneself down as ignorant of the perfection to which the construction of this type of camera is susceptible, and we can claim to be familiar with the various patterns of N. and G. cameras, and with more than one, through regular use. Yet we must confess that, until the fact was recently brought to our notice, we were unaware that Messrs. Newman and Guardia manufactured a camera which is a variation of the well-known "Special B," in that it possesses, in addition to the shutter of the latter instrument, a focal-plane shutter, which allows of the separate use of both exposing devices, and, in fact, is adjustable to keep one open while the other is being used. Such a camera is, of course, one with the widest range of possibilities as regards speed, for the front shutter gives exposures down to one-half of a second, and the focal-plane allows of times from one-tenth to one 800th in the convenient manner familiar to those who have used it on one or other of the "N. and G." patterns of reflex camera.

In addition to this range of shutter movement, the "high-speed" camera is made so that the modern lenses of largest aperture can be mounted upon it. Thus it will accommodate the Zeiss Planar ( $f/3.8$ ) or the new  $f/4.5$  Tessar instruments which are naturally of the greatest value in securing full exposure at the higher speeds and in circumstances of dull light when ordinary snapshot photography is out of the question. It is not merely in the provision of these



facilities that the camera earns our commendation, but equally in the way in which every movement is arranged for convenient manipulation. If this were not so and if the workmanship of the camera were below the "N. and G." standard, the camera would be scarcely preferable to instruments which can be purchased for a twentieth of the price. It is the perfection of working, finish, and the fact that the working quality will be found unimpaired if the camera lie by for a year or more that give the "N. and G." its value and justify its price. In saying this we are but repeating the experience of users, but it is necessary to recapitulate such facts before reciting the movements which the camera possesses, otherwise the reader might well question the wisdom of paying a price which would purchase a suite of furniture or a motor bicycle.

As we have said, the High-Speed is a modification of the "Special B," and externally in the quarter-plate size is an inconspicuous black box measuring 6 x 6 x 10 inches, and with just one projection, the key of the focal-plane shutter. As in the "Long-Focus" pattern of reflex, the focal-plane shutter is removable and replaceable in an instant. It is, of course, the one-tension pattern with alteration of the speed by width of slit after exposure. The front shutter is the well-known N. and G. pattern, all the parts "get-at-able," the setting done from the top of the camera and the speed alterations made very conveniently below the shutter. The two-way rise of front, the provision of tested finders, levels, and focussing scales are all on the lines of the "Special B," the rear portion of the camera carrying focussing screen, and dark slides, changing box, film pack or roll-holder. As we have said, it is enough to compare the "High-Speed" with other N. and G. models to award it the highest praise. For the full particulars of the camera, application should be made to the firm at 90-92, Shaftesbury Avenue, London, W.

The Soho Head-Screen and Soho Eye-Rest. Sold by Marion & Co., Soho Square, London, W.

Messrs. Marion, in designing a new form of studio head-screen have produced one adjustable in every direction by means of a ball socket clamp. The fittings of the screen are in nickel, and the



base and support is japanned, giving the whole apparatus a handsome appearance in the studio. The price is 21s.

An "eye-rest," serving to assist the operator in securing a portrait with the eyes of the sitter in just the right direction, has also been placed on the market by Messrs. Marion at 7s. 6d. It stands 6ft. 6in. in height, and the movable block on which the sitter's head is to rest is pushed at once up or down, and remains where it is placed.

THE "FULMENAR" ANASTIGMAT.—Questions put to us from some readers of the review last week of Messrs. Sichel's  $f/6.8$  anastigmat show that a portion of our review has been misunderstood. Speaking of the lens as "not of the very highest rapidity" intended, of course, to distinguish it from the  $f/3.5$  and  $f/4.5$  anastigmats issued at treble the price of the "Fulmenar." Our tests of the latter showed that its working rapidity is actually claimed for it, a fact which, apparently, was not understood in our paragraph.

LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.—On Thursday, March 19, 1908, Mr. W. R. Stretton will lecture upon "Tones and Values." Visitors will be heartily welcome at the meeting, Ye Olde Napier Tavern, 25, High Holborn, at 7.45.



## CATALOGUES AND TRADE NOTICES.

"THE AGFA HANDBOOK."—The 1908 edition of the handbook of formulae and instructions for the use of the Agfa plates and chemicals comes from Messrs. Chas. Zimmermann and Co., St. Mary-at-Hill, London, E.C. It contains revised directions for use of the Agfa plates and a good deal of practical information on working methods which involve, as so many do, the use of one or other of the world-famous Agfa developers. This includes hints on the use of formal for the time development of ordinary and Autochrome negatives, notes on the use of the Agfa intensifier, rapid fixer, and wash powder. There is also a directory of dealers known to stock Agfa products. The new "Handbook," obtainable free, is certainly a volume to have at hand.

"CITY SALE" BARGAIN LIST.—A catalogue of many pieces of second-hand apparatus, hand cameras, stand cameras, studio cameras, enlargers, and lenses has just been issued by the City Sale and Exchange, 81, Aldersgate Street, London, E.C. The list includes a great many of leading makers' goods, which are offered in good, perfect working, condition at greatly reduced prices. A postcard to the City Sale will bring the list, which certainly ought to be studied by those purchasing apparatus for the season.

## Meetings of Societies.

## MEETINGS OF SOCIETIES FOR NEXT WEEK.

## FRIDAY, MARCH 6.

Ingham Camera Club. Lantern Lecture. W. L. F. Wastell.  
 Camera Club. "Photographic Chemicals."  
 Photian Photographic Association. "Imitation and Imagination." T. N. Hepburn.  
 London Photographic Society. "Press Photography." A. Hirschfeld.  
 Photographic Society. "Around London." F. C. Williams. "Gower."  
 R. C. Harris.  
 London Photographic Association. Rotary Carbohydrate Paper.

## MONDAY, MARCH 9.

Borough and District Photographic Society. *Photographic News* Prize Slides.  
 Photographic Society. "Autochrome, Demonstrated." Frank Cooper.  
 Borough and District Photographic Society. "Portraiture." J. T. Tanner.  
 Photographic Society. "Enlarged Negatives on Negative Paper." E. H. Jackson.  
 Photographic Society. "A Scamper through Holland." W. Sumner.  
 Hampton Camera Club. "Servia and its People." C. R. Howdill, A.R.I.B.A.  
 London Photographic Society. "What Can be Done with Ozobrome." W. H. Womersley.

## TUESDAY, MARCH 10.

Photographic Society. "Photo-telegraphy, or the Transmission of Photographs by Wire." T. Thorne Baker.  
 Hampton Camera Club. "Michael Angelo." Rev. J. O'Connor.  
 Photographic Society. Annual Exhibition of Members' Slides.  
 Photographic Society. Annual Meeting.  
 Photographic Society. "A Yorkshire Holiday." F. W. Gosling.  
 Camera Club. Rotary Carbohydrate Paper.

## WEDNESDAY, MARCH 11.

Camera Club. "Photogravure." Herbert Denison.  
 Technical College Photographic Society. "The Practice of Tele-photography." E. Clifton, F.R.P.S.  
 Urban Photographic Society. *Photography* Prize Slides.  
 Middlesex Photographic Society. Exhibition of Home-made Apparatus and Photographic Curiosities.  
 Polytechnic Photographic Society. "The Carbon Process." H. Stuart.  
 Suburban Photographic Society. "Bromoil." C. Welborne Piper.  
 London Camera Club. "Flashlight Photography." F. J. Mortimer, F.R.P.S.  
 Camera Club. Rotary Carbohydrate Paper.

## THURSDAY, MARCH 12.

London Photographic Society. "Exposure and Development." C. Wille and C. H. Madden.  
 Parsley and Calverley District Photographic Society. "Stereo Photography." S. Bentley.  
 London and District Photographic Society. Annual Meeting.  
 School of Photo-Engraving and Lithography. "Methods of Painting." John Cooke.  
 Amateur Photographic Association. "Birds I Have Met." F. Featherley.  
 London Camera Club. "Lantern Slides from Drawings in the British Museum." J. J. Ellis.  
 Photographic Society. *Photography* Prize Slides.  
 Photographic Society. Practical Evening.  
 Worth Photographic Society. "The Camera." J. W. Baker.  
 Windsor Photographic Society. Rotary Carbohydrate Paper.  
 London and Provincial Photographic Association. "Personal Notes on Tones and Values." W. R. Stretton.

## ROYAL PHOTOGRAPHIC SOCIETY.

Meeting held Tuesday, March 3, Mr. E. J. Wall in the chair. Mr. Martin Duncan gave a lecture on "The Autochrome Plate Applied to Natural Science," and prefaced his remarks with a reference to

the Gravier method of developing Autochromes. This he found not to give the increased transparency claimed by its advocate, nor was the colour-rendering as correct as that when the Lumière directions were followed. Mr. Duncan developed an Autochrome exposure, a photo-micrograph of the screen-plate itself, and projected it upon the screen. He then exhibited a number of slides of photo-micrographs and nature subjects, illustrating particularly animal mimicry. In the course of a discussion a number of questions were asked, in replying to which Mr. Duncan gave some hints as follows: In taking his photo-micrographs he uses acetylene light and a Lumière filter. He intensified all his slides: the omission of this part of the process he found sacrificed brilliancy. In the case of a slide that was somewhat too dense, he found a very weak Farmer's reducer brightened up the Autochrome. During the last few months he had noticed no frilling of the plates. His own opinion as regards varnishing was that it was essential; he doubted the recommendation of Von Hübl to substitute for varnishing the immersion of the Autochrome in a solution of glycerine, leaving (on the slide drying as much as it would) a small proportion of the glycerine in the film. He had not tried rodinal as a developer. The meeting concluded with a hearty vote of thanks to the lecturer.

## Commercial &amp; Legal Intelligence.

"BROWNIE" AND "ENSIGN" FILMS.—In the Chancery Division on February 25, before Mr. Justice Eve, Kodak Ltd., brought an action against Mr. W. G. Grenville, dealer in photographic accessories, of Corporation Street, Birmingham, for an injunction to restrain him from infringing plaintiffs' trade-marks and from passing off other goods as and for plaintiffs' goods.

Mr. Walter, K.C., explained that in 1906 Mr. Blake, a representative of his clients, sent an hotel porter to the defendant's place of business with a written order: "Please give bearer one 'Brownie' film, 7d.," but the porter was given an "Ensign" film. Mr. Blake then went to the shop himself, but no explanation was offered him, and in due course a writ was issued against Mr. Grenville. Upon receipt of this defendant wrote asking that the writ should be withdrawn, and saying that he was ready to give every reasonable assurance that their rights in the matter should be respected. The plaintiffs subsequently applied for an interim injunction, but no order was made. The issue of fact to be tried in this case was whether the assistant told the porter what the article was that was being supplied.

Mr. Blake gave evidence as to sending the porter to purchase the film. Cross-examined by Mr. Ogden Lawrence, K.C., for the defendant, he denied that he gave the assistant no chance of explaining what he had done.

Mr. Berry, the defendant's assistant, said that when the porter came to defendant's shop they had no "Brownie" films, and so he offered the "Ensign" film and asked the porter whether it would do. The porter looked at it and then took it away. He denied that he had any instructions to push the "Ensign" films.

Mr. Grenville, the defendant, gave evidence that he had no intention of deceiving, and had given no instructions as to selling "Ensigns" instead of "Kodaks."

Mr. Lawrence submitted that it would be monstrous to grant an injunction against the defendant, for such a proceeding would be out of all proportion to any injury that could possibly have resulted to the plaintiffs.

Mr. Walter said his clients had heard there were firms passing off "Ensigns" in Birmingham, and Mr. Blake sent to three firms for "Brownies," and two of the three gave "Ensigns."

His Lordship, in giving judgment, said he had no hesitation in accepting Mr. Grenville's statement that he gave no instructions which would lead to the selling of the "Ensign" films in preference to "Kodak" films, and he believed him when he said that, so far as he was concerned, it was a matter of entire indifference whether a "Kodak" or "Ensign" film was sold. He therefore acquitted him of any intention to pass off "Ensign" goods for goods of the Kodak firm. At the same time he thought that in this case Mr. Grenville had been the victim of an over-zealous shopman. He was sure that he would be employing a Nasmyth hammer to crack a nut if he were to grant an injunction in that case. He believed he was dealing with a perfectly honest tradesman, and he would be visiting on him

a penalty which was not deserved if he were to grant an injunction; but he knew there were other consequences beside injunctions, and he had to say how the costs in the action were to be borne. He believed that Mr. Grenville would have done better if he had admitted at first that a mistake had been made; but he had not done that, and the case had come up for trial. He came to the conclusion on all the circumstances that this was not a case in which he could give the plaintiffs costs, but at the same time he did not think he could order them to pay costs. He would therefore make no order in the action as to costs or otherwise.

#### NEW COMPANIES.

**HIGH STREET PHOTOGRAPHIC COMPANY.**—120A, High Street, Margate. Partnership for five years from February 1, 1908. General partner: C. H. Walker, above address. Limited partner: J. Pitcher, Hazlewood. Palmers Green, Middlesex, contributing £50 cash.

## News and Notes.

**CONVENTION NOTES.**—The *Ministre des Chemins de Fer* has kindly placed a large steamer at the disposal of the local committee for a cruise on the Scheldt on the occasion of the Convention visiting Antwerp (July 10). Members will therefore have an excellent opportunity of viewing the wonderful panorama of shipping for which this port is famous, and obtaining snap-shots galore of good river subjects.

The papers and lectures already arranged for include "The Structure of the Autochrome Plate," by Dr. W. Scheffer; "Belgium" (illustrated by about 100 slides by members of the Association Belge), Mr. M. Vanderkindere; "A Chat on Venice," by M. Marisseau, the artist; and a specially prepared lecture-demonstration, by Mr. F. Martin Duncan, entitled "Screen-Plate Photography and the Latest Application of Cinematography to Science."

Arrangements have been made with most of the railway companies whereby members residing more than thirty miles from the metropolis, who hold Continental tickets to and from Brussels, may obtain tickets to and from London, at a single fare and a quarter.

**A PHOTOGRAPHER'S GRAVE.**—Letters received at Cape Town from Portuguese West Africa mention a touching instance of the devotion of natives in tending the grave of a white man buried within their borders. Two years ago a party of prospectors, representing a Cape syndicate, "trekked" from the Transvaal to Portuguese West Africa. One of the number, a Mr. Leslie Barclay, of Cape Town, who was the photographer of the expedition, died, and was buried in a lonely desert grave on the banks of the Luiana River. The survivors left on the grave Mr. Barclay's camera. It was useless through constant wettings, warped, and twisted, but it made an appropriate "headstone." It now appears that the few natives in the locality regard the camera as an important part of the white man's burial rites, and although it has been repeatedly carried away by hyenas, they are zealous in recovering the battered and dilapidated instrument, and restoring it to its original position at the head of the grave.

**THE OXO COMPANY** is offering to enlarge photographs of their patrons. Anyone who sends a guinea's worth of coupons with a portrait will receive, free of charge, a well-executed enlargement, on pearl grey mounts, entirely free from advertising matter.

**CITY SALE AND EXCHANGE.**—On Saturday evening, February 29, the employees of the City Sale and Exchange, Aldersgate Street, Fleet Street, Lime Street, and Sloane Square, held their annual dinner at the Manchester Hotel, Aldersgate Street, E.C. Mr. Richard Green in the chair. After the Royal toast with musical honours had been given, Mr. Green's health was enthusiastically drunk in champagne, to the strains of "For he's a jolly good fellow." Songs were rendered by several members of the company, with Miss Dorothy Green at the piano. At the conclusion of the dinner the whole company proceeded in taximeter cabs to the Lyceum Theatre, where seats had been reserved in the stalls for them, and concluded a most pleasant and enjoyable evening.

**THE NEW SOCIETY OF PAINTERS AND SCULPTORS.**—It is a sign of the times that painters are now so often combining into small bodies

in order to make a direct appeal to the public. The few established societies are almost all "close," and do not admit the work of outsiders. The dealers are practically as inexorable. The young painter has no chance but to wait till he is no longer young, by which time he may have made a reputation in a series of lucky strokes few and far between. The "New Society" is composed of ten painters and a sculptor. Most of them are about 25 years old, but it must in fairness be said that in the case of two or three their style is quite mature. E. Whitney-Smith shows accomplished statuary; M. Norsworthy some impressions of white sunlight; Louis A. Sargent displays much power and promise in woodland scenes, interesting examples of under-exposure effect in paint; E. H. Fischer exhibits studies of wild beasts, full of action, but not gymnastic; J. H. Amschewitz revels in ideal and poetic subjects, something in the manner of Shannon, fine in colour and decoratively impressionistic in form; Carruthers Gould's work is already well known. We expect both his name and his accomplished work will be of advantage to the society. G. W. Philpot must get more attractive subject matter. Amazing simplicity and dexterity of methods are shown in J. Nickal's water-colours. J. H. Lobley's work culminates in a fine portrait, and lastly are the very distinguished sketches of A. S. Wilkinson. The exhibition is at the Rowley Gallery, 140, Church Street, Kensington. We wish it well, but fear it is not for the man in the street, and, until he is educated, picture painting will remain uphill work. Photography is his only hope; that may perchance turn his mind into pictorial channels.

**THE "FALLOWFIELD" SMOKER.**—The annual smoking concert of the staff of Jonathan Fallowfield, the well-known firm of the Charing Cross Road, was held on Friday last at Frascati's Restaurant, under the presidency of Mr. F. W. Hindley. A large company of the staff and their friends of both sexes filled the hall and bestowed full approbation upon an excellent programme of songs, recitals, and other "varieties" of entertainment. Among those present were Mr. Winter and Mr. Hill, of the Imperial Dry-plate Company, Mr. S. H. Fry, Mr. Edgar Scammell, Mr. Wain, of "Focus," Mr. Pharoah, of "Photography," Mr. P. R. Salmon, of "The Photographic Dealer," Mr. A. Lawrence, of Wellington and Ward, and Mr. A. W. Brooks and Mr. G. E. Brown, of "The British Journal of Photography." In response to a vote of thanks to the chairman, Mr. Hindley expressed the pleasure it gave him to be present. On his vacating the chair to catch his last train, his place was taken by Mr. A. J. Goode. A most successful evening came to a conclusion shortly after 11 o'clock.

**"THE SCOTTISH FIELD,"** a monthly illustrated paper devoted to sport and outdoor life, has commenced the publication of a series of "Photographic Notes," and in its March issue deals fully with the Scottish Salon and the celebrations attending its opening. The issue contains a number of excellent sporting pictures from negatives obtained with Thornton-Pickard apparatus.

**THE BLENNHEIM CLUB.**—On Thursday, March 12, Mr. E. J. Wall will give a lecture on "The Spectroscope and its Applications," at the rooms of the club, 12, St. James's Square, S.W., at 8.30 p.m.

**UNITED STEREOSCOPIC SOCIETY.**—A gathering of the London members of this society took place on the 23rd ult. at the residence of the president (Dr. S. Walshe Owen). A programme of the summer excursions and meetings was arranged. During the evening Mrs. Owen kindly presented the awards of the annual competition, the plaques being the gift of the vice-president, M. Victor Selb, of Brussels. The result of the competition proved as follows:—Best collection: Silver plaque, S. W. Shore; Class A—Landscape: Bronze plaque, A. J. Snow; Class B—Still life: Bronze plaque, P. Snow; Class C—Architecture: Bronze plaque: A. T. Mole; Class D—Open: Bronze plaque, A. Lester; while the following received hon. mention: Messrs. F. Low, S. W. Shore, J. Veitch, A. Lester, and G. W. Stannard. Although at the moment the society has its full complement of forty members, the hon. secretary, Mr. A. J. Snow, of 74, Lloyd Road, Walthamstow, will be glad to send particulars to prospective members. The membership is confined to stereoscopic workers.

MR. HAROLD HOOD writes us that his private address is now "The Fields," Nunthorpe, S.O., Yorks. Those who have reason to write him, apart from the business of Hood and Co., Ltd., are asked to make a note of the change.



## Correspondence.

We do not undertake responsibility for the opinions expressed by our correspondents.

Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

### SULPHIDE TONING.

To the Editors.

Gentlemen,—In a postscript to a letter in your issue of February 28 Blake Smith makes a statement to the effect that in sulphide of sodium sulphide yields silver sulphide. By silver sulphide some the compound  $\text{Ag}_2\text{S}$  is implied. But from some experience I made in 1906 (published both in the "Journal" and "Lancet" of that year) I came to the conclusion, on what seemed an irrefutable experimental evidence, that an alkaline solution of sodium sulphide in the presence of gelatine reacts with silver to form a dark-brown body held in pseudo solution—a body cannot by any permissible licence of nomenclature be called silver sulphide. From this solution no solid is separable by immediate filtration through the most retentive filter-paper, but on course of time the solution slowly deposits very small quantities of a dark-brown solid. To the investigation of this precipitate, does not at all resemble ordinary silver sulphide, I hope to devote some of my summer-time leisure.

I may add that the advisability of reducing the bromide content of ferricyanide-bromide bleacher to the proportions suggested in experiments in the paper referred to has in the meantime come out to the test, and has been fully justified by results.—Yours truly,  
DOUGLAS CARNEGIE.

Castle-on-Tyne.

Coming to pressure on our space this week several letters, paragraphs, and notices of new apparatus are held over.

## Answers to Correspondents.

Matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.

Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.

Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., Wellington Street, Strand, London, W.C. For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 7d. each photograph, to cover cost of registration fee, form, etc. Unmounted copies of each photograph must be sent with the

### PHOTOGRAPHS REGISTERED:—

Mr. E. C. Brown, 34, Castle Street, Llangollen. Photograph of John Poultons, Esq. Brown, 10, Bolton Street, Bury, Lancs. Two Photographs of Combined Photographs and Drawings of: (1.) Prel Cotton Mill by Night; and (2.) Pilot Mill by Night, both at Bury, Lancs.

NOTE.—(1) What is the strength of the commercial solution of sodium bisulphite in the amidol formula for development of bromes on p. 10 of "Colour Photography" Supplement February 7, 1908? Is it the same solution as mentioned in solution of the MM. Lumière instructions (sol. bisul. lye)? Is any unevenness of the film of the gelatine strip filter behind lens (it coddles slightly in the mounting) in any way the definition and precision of the image and the correction of the lens?—A. D. GOSTIEFF.

We believe it is the same. MM. Lumière refer to the bisulphite solution which they place upon the market, and no doubt when using the same preparation. (2) If placed behind lens it will certainly affect the definition; whereas, if placed in front of the lens, a little unevenness will be of no account. PROFESSIONAL PHOTOGRAPHY.—(1) Is there a book published which gives the up-to-date modes of work in developing, printing, etc.—in fact, the full working particulars of a professional photographer? (2) Where can it be purchased? (3) Price?—CLONMEL.

Only book we can advise you to get is "Professional Photo-

graphy," by C. H. Hewitt. Iliffe and Sons, Vol. I. and II., 1s. each.

E. A. P.—You should send us something more than an untuned P.O.P. print if you want an opinion of the portrait. We should not consider it up to the standard of the leading exhibitions. One defect is the symmetry of the lighting; the light tones on either side of the face need differentiating in brilliancy; certainly there will have to be a little retouching. Send us a print, say, on rough bromide paper, and we will willingly advise you further.

G. B. H.—Air-space lenses require more careful shading from strong direct light, but the definition they give is equal to that of other lenses, often more critical. Some types do not work well with small stops—e.g., at  $f/32$ , but that would not apply at  $f/11$ . We suggest you send us a print or two showing the specific complaint.

LANTERN.—The illumination is very even, equal to a condenser, but not as powerful as a strong direct light, such as the arc or even incandescent gas.

B. DOS SANTOS LEITAS (Lisbon).—(1) We have seen only a working model of the camera. We cannot say more until the finished instrument reaches us for review. We should say one or other of the leading makes now on the market should meet all your wants. (2) Certainly the process is most practical. It is largely used in this country, particularly for transparencies. The makers also supply materials for prints on paper.

REFLECTORS AND BACKGROUNDS.—(1) What material is generally used in reflecting screens—muslin or calico? (2) I have some flatted oil backgrounds. The paint has cracked with rolling up on roller. How can I restore them?—SCREENS.

(1) For reflectors, white or pale blue calico is what is usually employed. For diffusing screens thin white muslin is the proper thing to use. (2) We are afraid that nothing can be done. It is a very useful thing for flatted oil backgrounds to crack in the way described, unless they were painted over distemper ones. Possibly this may be the case in this instance.

COPYRIGHT.—I have had given to me a print of a prize fighter. The name of the photographer is at foot, but it is not marked copyright. Can I copy it for my customer and supply him with prints to sell? I myself do not wish to make any use of the photographs, only to copy it and supply prints in the usual way.—E. B.

If there is no copyright in the picture you are, of course, at liberty to copy it. It is not necessary that a copyright picture should be marked as "copyright." It is most likely that with such a picture a copyright in it would be registered. The only way to ascertain that will be to search the register at Stationers' Hall.

BACKGROUNDS.—Will you kindly inform me what ingredients and quantities are required for painting distemper backgrounds?—J. F. H.

The ingredients used in making distemper backgrounds are common size, whiting, lampblack, or other dark pigment. It is impossible to give quantities, as they must necessarily depend upon the colour or tint desired. If our correspondent will refer to page 82 of our last volume he will see full practical instructions for making distemper backgrounds.

FAILURE TO GIVE REFERENCE.—Receptionist and retoucher wants to know what she can do. Her late employer does not answer any letters that are written to him with regards to her reference. She was with him ten months. She does not know of any reason why he should not, and it is getting quite a serious matter to her, as she is entirely dependent on herself to get her living.—M. L.

We do not see that our correspondent can do anything, as an employer is not compelled to give a late employee a reference unless he chooses. In this case it may be simply negligence on his part. We should advise "M. L." to write him a polite note and point out that his omission to reply is doing her an injury by preventing her from obtaining employment.

N. O. D.—Illustrations Bureau, Whitefriars Street, E.C. (office of the "Daily Mirror").

2.—We advise you to apply to Mr. P. L. Thornton, 74, Fulham Park Mansions, S.W., who, we should say, would put you in the way of obtaining what you require.

G. LAURENS.—Jacks and Co., Glasshouse Street, London, W.; Fradelle and Young, Regent Street; or F. A. Bridge, East Loage, Dalston Lane, N.E.

H. L. A. F. (Finsbury Park).—The only solution which can be recommended is that for the Kallitype process. Formulae and other

directions are given in the "Almanac" for the current year, page 832; or we may refer you to the "B.J." for February 8, 1907, in which an article by a well-known worker of the process appears (p. 96).

**STEREOSCOPIC PHOTOGRAPHY.**—Could you kindly inform me if there is any inexpensive text-book on stereoscopic photography, and if so, the title and name of the publisher?—N. W. FAIRBROTHER.

There is no really good book on stereoscopic work. We advise you to get No. 5 of the "Photo Miniature," which is on stereoscopic photography, and the translation of a work by Drouin, in each case from Messrs. Dawbarn and Ward.

**PHOTOGRAPHER AND SITTER.**—(1) How far is a professional photographer justified in making use of his sitters' photographs by making a public exhibition of them (of course, in his studio window)? (2) Does he leave himself open to legal prosecution for damages by a sitter if he or she sees his or her photograph in the window of the studio where the photograph was taken?—TROPICS.

(1) A photographer has no legal right to exhibit photographs (or, rather, duplicates of photographs), for which he has been paid. (2) He does, unless he has obtained the sitter's consent.

**ELECTRIC CURRENT.**—Will you please inform me if photographers using mercury and arc lights for portraiture are charged by the power or ordinary rates, as I am charged by the latter 5d. per unit, and was given to understand by the makers the charge would be by the former?—ELECTRIC.

It is usual for electric supply companies to charge photographers by the power rate, certainly in the case of consumption during the day time.

**LEASE QUERY.**—I should be extremely obliged if you could advise me upon the following matter. Some few years ago I opened a photographic business in small premises. My premises were a small portion of a larger business premises. The occupier of the business premises is my landlord. When I took over my portion the occupier of the whole premises told me that he had a lease of some seventeen or eighteen years to run, and that he would grant me a lease for seven years. The lease was accordingly made out, duly signed by us both, and stamped, each of us having our own half or portion. My landlord, the occupier, used to live over the business part of the premises, but has lately removed, and it has just come to my ears that he is going to give up the premises very shortly. This, I understand, he can do, as his lease was a terminable one at different periods. I would like to know if he can do this without coming to some arrangement with me. There was nothing said of this when he granted me my seven-years' lease, and I have some four years of this to run. Would the superior landlord turn me out of my portion, and, if so, have I any claim against my landlord for disturbance of my business, which would be very serious? My lease contains the usual clauses, that I am to have free and undisturbed possession as long as rent is duly paid from the lessor, his executors, or assignees, etc., etc. I may say my landlord tried to sell, and failed, and this is why he is going to give up the premises.

If you have to leave the premises before the end of the term of the lease granted to you, you have good cause of action for damages against your landlord. He is held by the terms of the lease he granted to you, and if he is not able to fulfil them he will have to give you compensation. The superior landlord has nothing to do with you, as you are not his tenant. If he takes possession of the premises you will have to go unless you can make an arrangement with him that you remain. Possibly you may be able to do that. Anyhow, you have cause of action against your landlord for not giving you undisturbed possession of the portion you rent from him.

**MATERIAL FOR BACKGROUNDS.**—Will you kindly let us know where we can obtain a fairly stout canvas for painting backgrounds in flatted oils, also material (cream colour) used for backgrounds (not painted)?—WILLIS.

The best material for backgrounds is unbleached sheeting. It is sold by all large drapers and upholsterers. It may be had in different widths up to about nine feet wide. We do not understand the query "cream colour not painted." We know of no such fabric.

**COPYRIGHT.**—Messrs. A. invite the Rev. — to sit, which he does. They then present him four complimentary copies. Upon receiv-

ing these he orders a dozen of them, for which he pays. We copy his photograph (with his permission) and publish in form of postcards, or would such a proceeding be actionable?—MARLBOROUGH.

The sole right to copy the photograph belongs to Messrs. A. D. ORBEEL.—The Chief Inspector is B. A. Whitelegge, C.B., R.O. Office, Whitehall, London, S.W.

W. E. HOLLIDAY.—The camera you mention may be obtained from A. E. Staley and Co., 19, Thavies Inn, Holborn Circus, London, E.C.

WOGHLI.—Carey Lea's papers on the silver salts were reprinted in the "B.J. Almanac" for 1902, p. 312.

HYPO.—The best materials are the glossy-drying colours sold by large dealers—e.g., Fallowfield, Houghtons, Kodak, or Marion.

A. NIEMOLSKI.—The Tress Company, 4, Rathbone Place, London, W.C.

F. W. JEFF.—Billcliff's Camera Works, Manchester, S.W., their list.

J. BACON AND SONS.—So far as we know, the powder is not on market. The "Agfa" flash-powder, as the article mentions, resembles it rather closely. No doubt a chemical firm, such as Griffin's, would prepare the mixture for you.

THE FUNERAL of the late Mr. A. Horsley Hinton took place Saturday last at the City of London Cemetery, Little Ilford. Among those present were Messrs. H. Snowden Ward, F. J. Mortimer, Brookes, A. H. Blake, G. E. Brown, L. J. Bolton, F. A. Briggs, S. G. Kimber, Reginald Craigie, C. Winter (Imperial Dry-plate Company), A. W. Tipp (Thornton-Pickard Company), and several members of the staff of Hazell, Watson, and Viney. Messrs. J. W. P. Rawlins, Alex. Keighley, Percy G. R. Wright, and W. Hazell, sen., were among the mourners.

Tributes to the memory of Mr. Hinton in the form of flowers were sent by Mrs. A. Horsley Hinton, Miss Evelyn Rawlins, Mrs. Gould, Mr. and Mrs. E. Clarke, Mr. and Mrs. James Musset, Mr. and Mrs. Gould and Mr. Tayle, Mr. and Mrs. Frank Maud, Mr. and Mrs. Leonard Clarke, Mr. and Mrs. John Rolfe, Miss and Mr. E. Clarke, Mr. and Mrs. J. W. Palmer Rawlins, Mrs. Kitchin family, Mr. and Mrs. S. Booth, Mr. and Mrs. F. Blott, Mr. Mrs. Bennett, Mr. and Mrs. Alex. Keighley, Mr. and Mrs. H. Hunt (London), Mr. and Mrs. Arthur Rawlins, Mrs. W. Warren, Mr. and Mrs. Goldby, Master Lyster Goldby, Mrs. C. and family, Mr. and Mrs. Arthur Alger, Mr. and Mrs. G. Walton, Mr. and Mrs. George Davison, Mr. and Mrs. Russell, Hunt and family (Reading), Mr. and Mrs. Sharples, Master Sharples, Mr. and Mrs. Rowe, Dr. and Mrs. Acworth, Mrs. L. Miss Claire Cameron, Miss Kitching and Mr. B. Hicks, Mr. Mrs. Walter Crane, Mr. Charles Houghton, Mrs. Varley and G. Kirkland, The Maids, Hazell, Watson, and Viney, "Amateur Photographer" staff, Southampton Camera Club, British Journal of Photography, "The Photographic News," members of The Linked Ring, East Sussex Art Club, council of Park Photographic Society, members Bowes Park Photographic Society, Royal Photographic Society, Scottish Federation, Lake Wight Photographic Society, Birmingham Photographic Society, Liverpool Photographic Association.

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## SUMMARY.

remarkable invention by Professor Lippmann is described by Paris correspondent. Professor Lippmann has devised and brought to a semi-practical stage a method of preparing photographs reproducing the relief of nature without the aid of a camera taking and of a stereoscope for viewing. (P. 192.)

Further discussion of the markings (white outlines round objects) sometimes found in negatives is provided by some on p. 190, and by an article by Mr. A. Mackie on p. 193.

Practical hints on the method of gold toning a sulphide-print have been published by an American worker. (P. 194.)

C. Welborne Piper, in a paper on the nature of the photographic image, further discusses some of the interesting points raised by Mr. Blake Smith. (P. 195.)

The practice of professional photography and the sulphide toning of bromide prints occupy our correspondence columns. (P. 205.)

A practical hint on while-you-wait photography appears on p. 198.

An exhibition of photographs by Baron de Meyer and Mr. A. L. Brown opens on Monday next at the Goupil Gallery, 5, Regent Street. (P. 203.)

Pictorial photography is to form a section of the forthcoming Franco-British Exhibition. The collection, to be formed by invitation, is in the hands of Mr. J. C. S. Mummery and Mr. Reginald Craigie.

An exhibition of photographs of the "Orient," by Mr. H. G. Ponting, F.R.G.S., will open at the "B.J." house next week.

We publish a photograph and a brief account of the newly appointed professor of photography at Dresden, Dr R. Luther. (P. 198.)

A commendable feature of photographic life in Germany is the photographic exhibition, to which we allude on p. 191.

## EX CATHEDRA.

### The "B.J." Colonial Number.

Our issue of the 27th inst. of the present month will be a special one in several respects. Appropriately to the time of year—the opening of the photographic season—we shall review a number of new goods appearing for the first time on the market. We shall commence one or two new features of special interest to our readers both at home and abroad, whilst those of the latter class in all parts of the world will be brought into touch with the home country by several articles dealing with existing conditions in photography in this country. The issue will be enlarged in order to find room for this additional programme. Lastly, a copy will be posted immediately on publication to photographers in the colonies and in all parts of the world from a list which we have prepared and revised within the past twelve months. This directory of colonial and other professionals and dealers is probably second to none in point of numbers and accuracy, yet it does not include photographers who are known to be already subscribers to the BRITISH JOURNAL, but only those who heretofore, so far as we can judge, have not been directly approached by a photographic journal. The "B.J." of March 27, it is believed, will be the first to bring this large and important body of buyers into touch with English houses.

\* \* \*

### Pictorial Photography at the Franco-British Exhibition.

The Executive Committee of the Franco-British Exhibition have decided to include, in addition to an important collection of paintings and sculpture, a section devoted to British pictorial photography. For this purpose suitable, though somewhat limited, accommodation has been provided. A special committee to organise this section has been appointed, consisting of Mr. J. C. S. Mummery, P.R.P.S., and Mr. Reginald Craigie, with Mr. Ferdinand J. Spielmann as Honorary Secretary. The collection of prints, which it is hoped and intended shall be representative of the best work of recent years, will be made by invitation only.

\* \* \*

### Photographs of the "Orient."

We are glad to be able to announce that within a few days there will be opened at the "little gallery" at the house of the "B.J." in Wellington Street an exhibition of photographs of the "Orient," by Mr. H. G. Ponting, F.R.G.S. During the past five years Mr. Ponting has travelled over nearly every country in the East, and his camera has borne evidence to his use of it in Japan, China, Korea, Burmah, and India. Mr. Ponting went through the Russo-Japanese War, and when some months after its conclusion he arrived in London via the Trans-Siberian

Railway, we were, we believe, among the first to see a collection of his photographs. A number of these we are now able to show, thanks to the courtesy of Messrs. Raines and Co., who have prepared and framed the enlargements. The exhibition will be quite distinct from others we have held, but the collection will possess one or two features about which we shall be able to say more in a week's time.

#### White Markings in Tank Development.

In a leader on "White Outlines Round Dark Objects in Prints from Dry Plate Negatives" published in our issue of February 28, we described some very curious modifications of these markings on some negatives submitted by a correspondent. These effects took the form of white streamers ascending from every dark object in the view. We now hear that we were correct in assuming that the streamers were produced vertically during the tank development, and our correspondent is of the opinion that the particular plates were inverted in the tank so that the marks grew downwards. It appears, however, that the developer was not quite still. Every ten minutes in the course of thirty minutes' development the rack containing the plates was moved up and down briskly to stir up the developer. Consideration of all the conditions rather inclines us to the belief that this vertical movement of the plates may have been the chief cause of the marks. In a perfectly still solution the fresh developer would probably have diffused too slowly to produce such long streamers. The white line might have been even more emphasised, but there is no apparent reason why the fresh developer should ascend or descend in a long, straight line across the plate. The vertical lifting of the plates seems to afford the needed explanation. Our correspondent wishes to know how to avoid the effect in future, but it is rather difficult to advise on this point. One contributory cause may be the too near spacing of the plates in the tank, and, in any case, a widely spaced rack is advisable. The immediate cause apparently being the vertical movement of the plates at long intervals, the effect might be avoided either by not moving them at all, or by moving them at more frequent intervals. In any case, the conditions of tank development are not favourable to perfectly even development, and we doubt if pyro soda is at all the best developer to use. When used in a dish rocking is always advisable, hence it seems an unsuitable developer for use in a tank. We should prefer either rodinal mixed with distilled or boiled water, or glycin. The ideal developer is evidently the one that works most evenly without being kept in motion.

#### "Mackie's" Mark.

As stated in Mr. Mackie's article in this issue on the white line phenomenon, it is a curious fact that the mark is generally rare, and yet so common with certain individuals. We have never seen it on any of our own negatives, which have all been developed in dishes that have not always been kept in motion, but we have frequently seen it on other people's negatives, on roll films as well as on glass plates. Its possible connection with halation is rather difficult to see, and we are much more inclined to favour the development theory than any other. Indeed, the truth of this, in at least some cases, is fairly well proved by the case we last commented upon, in which the white line was drawn out into long streams by lifting the plate in the developing tank. Another very notable case of a line (without streamers) brought to our notice was on a roll film developed in the early pattern of the Kodak developing machine, with which the film was kept in continual motion. The conditions in this machine are rather peculiar. The film is certainly pulled through the deve-

loper, but what kind of movement is imparted to the developer it is a little difficult to say. The films are, however, fairly close together, as they are in a good many ordinary tanks, but we are quite unable to say whether this is the essential condition for the production of "Mackie's Mark." The instance he mentions of the mark being seen on a Daguerreotype is new to us, and certainly we should not have anticipated it. On consideration, however, we are very much inclined to think it can be accounted for in a very similar fashion. It is not difficult to conceive an overlapping over the lights of the vapour that accumulated under the shadows, and a consequent more rapid development just on the borders of the shadows. Though the action of the vapour is altogether different from that of an alkaline developer, still it is used up by the image, and can be replaced by fresh vapour from the shadows as well as by fresh vapour rising up from the bottom.

#### Photographers' Fires in London.

From the annual report of the Chief Officer of the London Fire Brigade issued on Saturday, it appears that a fire occurred at a cinematograph exhibition during 1907 due to defective electric circuit. Five outbreaks occurred at photographers' premises. The causes of the outbreaks are distributed as follows:—Due to defective electric current 1, gasfitters at work 1, hot ashes 1, light thrown down 1, unknown 1. The total number of fires in Metropolitan during the twelve months was 3,320, of which 975 occurred in private houses. Licensed houses headed list of trades with 84 fires, cabinet-makers coming next with 47, and tailors and confectioners tying for third place with 42.

#### The Cut-Out Mount.

A contemporary makes some severe remarks on the use of the "cut mount," stating that its "proper place is round a print which simply records what is on a negative of one of the standard sizes for reference purposes of some kind or another." This is severe, but rather ambiguous, and probably it is the slip-in mount that is referred to, not what is commonly known as a cut-out. For our own part the genuine cut-out mount, which need not conform to standard sizes at all, can have much said in its favour. As regards appearance the recessed effect it gives is often a most desirable one, while practically it affords great protection to a print with a delicate, easily-damaged surface. In addition to this, it is a type of mounting that is easy to carry out. With the cut-out mount it is a comparatively simple matter to avoid that most objectionable effect in picture work, the effect of the picture standing out in front of the mount. With some of the more popular methods of mounting it is very easy to give an unpleasant raised panel effect. A raised panel is a good and very suitable plan for a piece of decorative work, but if more than mere decoration is aimed at it is just the situation to avoid. A picture, properly so called, can never be seen to the full advantage unless the effect of the subject being belied by the frame is secured. Putting the picture in a shallow recess, and literally behind the mount, is one of the easiest ways of producing this effect, provided, of course, the mount is of the right tone.

#### Cutting Out-Outs.

As regards cutting the opening in the mount this is a very simple operation for an amateur if he uses a bevelled ruler and a flat-bladed sharp-pointed knife ground on one side only. With a professional mountcutter's knife and rule it is a difficult task for a beginner, but the bevelled rule and flat blade clear away all difficulties. The print should be mounted on a large board the full size of the mount, or larger,



cut-out mount should then be fixed down over the print with some strong mountant. This is a most permanent and substantial kind of mounting, and it is a very valuable method for prints that are not to be framed. Mounted in this way even oil prints can be stacked away, one over the other, without the least fear of damage.

\* \* \*

**Improved** Mr. R. A. Houstoun, of Glasgow University has just described an improvement in this instrument by which one of the prisms, the Glan-  
**finer** Thompson polariser, is done away with. In the  
**electro-** existing form there are two prisms, the above-mentioned,  
**tometer.** which polarises rectilinearly the light beam, seen at  
top of the eye-piece, and another which reflects natural  
light to the lower half of the eye-piece. Mr. Houstoun's  
improvement consists in cutting the prism at the eye-piece  
into an isosceles triangle, and cementing to its base an Iceland  
spar prism of particular shape. The two beams of light  
are both polarised at right angles to one another. The  
ocular slit is only seven millimetres high, but in spite of  
this small aperture it is stated that there is no difficulty  
in practice in comparing the two spectra.

\* \* \*

**Elementary** Opinions differ a great deal as to the  
**Optics.** value of so-called "elementary" dissertations upon optics, and probably the chief reason for their being  
flatly condemned by some is the fact that they are often so very inaccurate. Optics form a rather profound  
branch of science, but, still, there are many useful optical facts that can be explained accurately  
in simple language. Unfortunately, however, some writers do not seem to be capable of  
employing simple language without descending into striking  
inaccuracies, and an article in an American temporary affords some striking instances of this. The  
author explains how flatness of field can be tested by photographing  
a newspaper tacked to a wall, and then breaks into the remarkable statement that the faster the lens  
smaller is the angle that it will cover with sharp focus, the slower  
the lens the greater is the angle. In view of what modern rapid  
anastigmats will do this is startling, though rather less so than the next statement concerning the second  
test. This second test is made by focussing on a building as sharply  
as possible with full aperture. We are then told to stop down to  $f/16$  and expose a plate,  
after which we are to cover the stop opening by sticking a disc of paper  
on the lens, and then open out to full aperture and expose again through  
the annular aperture. The results are equally sharp the lens has a flat field,  
they are not it has a curved field, which is the most refreshing piece of  
information we have come across for some time! Later in the same article we see a test  
for flare spot with instructions to look for an effect that will not flare  
spot at all; and yet again, an experiment that illustrates the want of depth  
is employed for distortion! Unworkable tests for chromatic aberration and  
anastigmatism are also described, and, altogether, the paper perhaps, the best  
example we have seen of elementary optics in its most inaccurate form.

\* \* \*

**Camera** We live and learn. The lay process has  
**Costly** astonished us now and again with marvels of photography, but of late the  
**Photography.** records have been those of the price paid for photographic work more  
often than of the achievements themselves. Last week we read of a  
photographer who "has just perished a camera whereby he is prepared to take likenesses at  
£200 a piece." An inevitable accessory which, no doubt,

the investor will announce ere long is a machine for procuring the sitters and getting the money from them. However, the new camera can be induced to produce a print at £40 and even as cheaply as £20. Apparently the article is a highly coloured account of somebody who is taking life-size portraits direct, though it is difficult to extricate a possible fact from its tangled narrative.

\* \* \*

**Distortion of** The question of stability of photographic  
**Photographic** films is of so great importance to all who  
**Films.** use them for any work involving measurements of precision that any investigation into the possible changes is of general importance. It is therefore interesting to see stated by Mr. C. P. Butler in "Knowledge" that Mr. F. Schlesinger has been examining numerous plates taken for standard star charting purposes. It was very necessary to find out whether the processes of development, washing, etc., left the films in the same condition as when exposed. Mr. Schlesinger's conclusion is that whatever error there may be due to distortion of the film is much smaller than the bisection error of the best star images, being not more than about 1-1000 mm. for the particular plates employed.

## STUDENTS' PHOTOGRAPHIC EXHIBITIONS.

It would not be an easy task to enumerate all the many and varied activities of the famous Technical High School of Charlottenburg, which has for many years been looked upon as a model of what a high school ought to be. Almost all subjects of a technical nature are represented there, and have their professors or teachers. As is well known, photography is also represented in the Technical High School, though, until now, the subject has only been treated in a half-hearted manner. This negligence of a technical and art-industry that has proved so important for Germany is the subject of frequent complaint, and there is an agitation to make of it a distinct subject for study, having its own particular teachers, instead of treating it as a side issue of the chemical department, to be experimented with and treated spasmodically according to the whim of one or other professor, as is at present the case. There is every possibility that Charlottenburg will soon make amends for this neglect by following the example set by the Dresden Technical High School and introduce a professorship of photography.

Our present interest for photographers in Charlottenburg is the photographic exhibition held by the students there. A glance at the exhibits proves not only the enthusiasm for photography already manifest among the students, but also the fact that the professor, when he is appointed, will have sufficient excellent material to begin with. The present is the fourth photographic exhibition which the students have held, and it seems to be growing greatly in popularity among them. Among the exhibits are many photographs of real merit, and one can distinguish the work of the artist as well as the more technical work of the engineer. There are also some good portraits and landscapes.

The idea of a students' photographic exhibition is not altogether new in Germany, we fancy, nor is it one of the things we have yet to learn from Charlottenburg, still the example cannot be too strongly recommended to our own students and the responsible authorities in the various schools, colleges, and technical schools. In Germany it has been found an excellent means of interesting the students during the long holidays, and of keeping them usefully employed. Though the work may represent the lighter side of student life, as it may be called, being more

of a pastime in contrast to the more serious object of their work and studies, it has, nevertheless, been found to foster and to encourage that spirit of friendly rivalry and competition with which German professors endeavour to imbue their students. Then, too, much might be said of its

social aspects, the opportunities it offers for adding interest to the walking tours which German students make periodically, and of the interest which it gives them in a multitude of subjects which may not be altogether immediately associated with their particular studies.

## STEREOSCOPIC PHOTOGRAPHS MADE WITHOUT A CAMERA AND VIEWED WITHOUT A STEREOSCOPE.

[The following article from our Paris correspondent describes very probably have important developments. We are not sure Lippman has brought it to a practical experimental stage that are clearly described in the article, but it has one other advantage that our correspondent has omitted to point out. In addition to producing stereoscopic effect on a single plate images with absolutely unlimited depth of field, all objects at the same time. It will be seen from the article that the only one of a kind that will probably be overcome; hence it is not very long.—Eps. "B.J."]

ONE might almost say nowadays concerning photographic departures, "Ex Gallia semper aliquid novi." After the telec photographic system of Belin and Lumière's multiple grain-screen colour-plate, we have now from Professor Lippmann—of interferential colour-photography fame—a new method of obtaining stereoscopic effects—and more besides. The nearest analogy to the system proposed by the eminent French savant is to be found in the eyes of certain insects, which, as is well known, are multiple, consisting of an assemblage of minute lenses, each of which forms an image of the object viewed on the corresponding retina. A good microphotograph of a scarab's eye, and the multiple images formed, is given by Mr. A. E. Smith in the "Process Year-Book."

It is by using a plate formed somewhat on these lines that M. Lippmann proposes to take positives on glass giving directly and without an objective the sensation of relief peculiar to stereoscopic views. Not only is this relief more exact, but the perspective changes according to the angle from which the plate is viewed, an approximation to nature not hitherto attainable



Fig. 1.

by any instrument. And all this on one plate exposed in a simple dark-slide to the landscape or object without intervention of objective or camera.

The arrangement by which these remarkable results are secured is as follows:—A film of celluloid or collodion, with a species of honeycomb structure, is prepared. Before coating with the emulsion, whilst still warm or unset, imagine it impressed by a plate so hollowed *in petto* as to cover the film with a relief of small hemispherical surfaces. This is done for both sides. The anterior hemispheres, intended to act as lenses, have a smaller radius of curvature than the posterior ones, which are covered with a sensitive emulsion. Each cell of the latter should receive an image formed by one of the small lenses of the anterior surface. Fig. 1 shows an enlarged section of such a film.

It is necessary that each of the corresponding segments should have the same curvature, and that the relation between the radii of curvature of the front and back hemispheres be equal to  $n-1$ , where  $n$  is the index of refraction of the medium, e.g. collodion. The front hemispheres form a series of lenses, the back ones, the photographic plate, the curvature of which ensures an exact focus over its entire surface, just as in spectrographs

a highly ingenious invention of Professor Lippmann that we think the idea is absolutely new, but it is evident that Professor Lippmann certainly never reached before. The details of the invention are not given, but our correspondent has omitted to point out that without the aid of camera or lens it permits the production of images beyond a microscopic distance from the plate being in focus. The material difficulty in the way is a manufacturing one, and it is too much to hope that the new plates will be available before

plates and films are bent to the curvature of a particular gratings. The whole cell acts as a small camera, comprising lens, camera and film. The intervening wall between any two cells has to be rendered opaque so that very oblique rays cannot pass from one cell to another. The actual film thus consists of a layer of these cells juxtaposed, and all identical in size and position.

We may now consider the formation of an image of any object, and the reproduction of the same obtained when the plate is viewed.

As the focal length of each little lens is only a fraction of a millimetre, all objects beyond a slight distance will be in focus. Each forms on its corresponding section of the sensitive film a microscopic image of the landscape, which varies slightly in

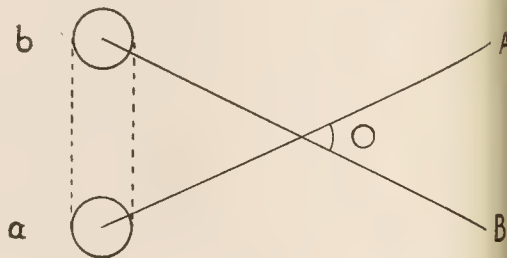


Fig. 2.

point to point as the angle of incidence changes. We think that, therefore, a large array of images of the object, just as the multiple eye of a beetle forms numerous images. Suppose the film developed to a positive and viewed as a transparency from the side L. We shall not see the juxtaposed array of images which might be expected, because (by virtue of its accommodation) the eye only perceives one point of each image, and the assemblage of all these points forms a complete image the size of the plate. As the position of each point perceived varies according to the angle from which the plate is viewed, we can follow the panorama across the plate exactly as in regarding the same scene in nature from different points of view. Moreover the reproduction will be in perfect relief, giving exactly the same sense of perspective.

Consider in Fig. 2 any point  $a$  in one of the small images. The rays issuing from  $a$  are all parallel, since by construction  $a$  is at the focus of the lens. The eye at  $O$  will perceive  $a$  as if coming from the point  $a$  projected to infinity in the direction of  $AOa$ . Further, the direction of the emergent bundle is exact



that of the incident bundle which during exposure was concentrated on *a*. Hence the eye perceives the photographic image of *A* as though projected in space in the direction joining the optical centre of the eye to the point *A*. The same holds for any other point *B*. The directions being preserved, the angles and apparent magnitudes also remain the same. It follows that the real images thus formed occupy in space, with respect to the system of cells and to one another, the same position as the original points, forming images optically equivalent and in three dimensions to the object reproduced. Through its accommodation the eye will perceive them in the aspect proper to the point of view. This changes with the position of the eye, and as we have two eyes in different positions this imposes the corresponding perspectives, and the condition of sensation of relief is thus obtained without the use of a stereoscope.

The image thus formed is obtained as a negative on development, and is also geometrically reversed. The reversal of the image may be secured by developing to a positive, as with Autochrome plates, or, better, by copying the negative on to a second film placed at an arbitrary distance of some centimetres from the first, contact not being necessary, since the process is only a repetition of the original procedure. This method has the advantage of giving any desired number of positives.

In order that the multiple images may give only one impression to the eye, the cells must be sufficiently small and near together, the condition being that the distance between two cells be less than the pupillar opening.

In any given position the image is limited by the edges of the plate, like a landscape viewed through a window. But on moving the head other objects will appear in the same limits, so that one can perceive a complete panorama pass over the plate.

The remarkable capacity for seeing a series of views in succession on the same plate arises from the curvature of the component elements. When viewed directly, the image seen is the summation of elements, each of which lies at the centre of the small cellular elements scattered over the plate. If regarded obliquely the summation extends over elements present in the lateral portions of the cells. If the aperture of these is 120 deg. it follows that 120 deg. of the landscape is included, this being comprised in each elemental cellular image. If we imagine the film bent to a cylinder, one could sweep 360 deg., and with ellipsoidal or spheroidal surfaces take in the heavens and the earth as well as the horizon, thus making the resemblance to certain insects' eyes more complete.

Professor Lippmann comments on the difficulty in realising completely the optical conditions necessary for the perfect clearness of each cellular image. His present results are still very imperfect; the "honeycombing" plates were prepared by hand by a mechanic, and the intervening cell walls spotted out by hand with a fine brush. Owing to the minute dimensions, the exact realisation of the condition that the ratio of the radii of curvature of the two surfaces be equal to  $n-1$  is difficult. It may be possible to use spherules of glass, ground to the necessary surfaces and set in collodion. If a glass could be obtained, say by a mixture of molybdates or tungstates of lead, with an index equal to 2, the parallel rays which it receives would converge on the posterior surface. Such a sphere, covered on one half with the sensitive emulsion, would constitute the simplest conceivable form of the elemental cells or dark chambers. One can only hope that the technical difficulties in the way of Professor Lippmann's ingenious discovery will be overcome.

## WHITE OUTLINES ROUND DARK OBJECTS IN PHOTOGRAPHS.

I was much interested in the article on this subject in last week's "B.J." for two reasons. Some years ago I drew attention to the phenomenon referred to at one of the meetings of the Photographic Club, the example being in a lantern-slide then being shown on the screen, and was promptly told that the effect was merely an optical illusion. On the following evening I brought up the subject at the meeting of the London and Provincial Association with the same result. At subsequent meetings at both places I was able to show without difficulty that it was not an illusion at all, but that many examples existed of prints, transparencies, and negatives where there was this white outline round a dark object shown against a background of light half-tone. The subject cropped up for discussion several times in both places, and the phenomenon itself became known as the "Mackie" line—I heard it referred to thus only a month or so ago. Finally there was a general agreement that the cause was that given in last week's article, namely, that the oxidised developer over the light tone is replenished from the unused developer in contact with the part of the film representing the dark object; hence development in the light tone proceeds more rapidly in the immediate neighbourhood of the dark object. That explanation thoroughly satisfied me at the time.

My other reason for interest in the article is the reference to white streamers proceeding in one direction from dark objects in plates developed by the stand method. Although I have never had this experience on negatives developed by myself, a friend—a professional photographer, to whom I had recommended stand development, and who could not succeed in making the system answer his purpose—showed me several negatives on which this defect was present to an extent that amazed me, and subsequently, on looking over a number of negatives by

another professional photographer who has used the stand method of development for a considerable period successfully, I found a few showing a trace, but a trace only, of the same defect. Whether the streamer proceeded from the dark part of the negative upwards or downwards as the plate stood in the tank I was not able to ascertain. Now, it appeared clear to me that the cause of this encroachment was similar to that referred to in connection with the white line; that seems the obvious conclusion to come to: but as we know that Nature always does the same thing under the same circumstances, the question arises, what are the exceptional circumstances that bring this effect about once or so in a way in the development of thousands of plates, or with one operator only among hundreds? I suppose the difficulty of tracing the cause is the usual one when photographic failures are being diagnosed. The operator can say precisely all the things he did which could not affect the matter, but has neglected to notice those which could affect it; otherwise he could diagnose the case for himself. As I have never experienced the occurrence myself, and could discover no determining cause from those who had, whatever I think is necessarily in the nature of guesswork, but I fancy the solution of the problem may be found to be something to do with change of temperature of the developer while development is proceeding. For instance, with a developer at a higher temperature than the air of the dark-room, the cooling of the developer at the top and sides might create a circulation in which there was an upward and a downward stream, or with a tank of cold developer placed on a warm table a similar effect might occur. The amount of space between the plates also may be a factor. Insufficient mixing of the developer I do not think is likely to be the cause. That, it seems to me, might cause irregular development, a further stage

of development on that part of the plate at the bottom of the tank, perhaps, but not this regular stream which appears on negatives otherwise quite perfect.

Since this article was set up in type I have been furnished with information from the author of the query that the streamer effect only occurred in a few cases out of a large number of negatives—about 250—developed under what appeared like precisely similar circumstances, and it was surmised that the effect was only produced when the skies were downward in the tank. According to the circulation theory, with a downward vertical current in the developer the skies would have to be at the bottom of the tank, and with an upward vertical current the skies would have to be at the top to produce the effect. But with warm solution in a cold tank one would expect to find a downward current round the sides of the tank and an upward current in the central part. Under these conditions adjacent plates in the central grooves, one sky upward and the other sky downward, should show both the streamers, the one towards the middle of the plate, but not at the two ends, the other at the ends, but not in the middle. If such examples can be produced the soundness of the theory will be established.

To return to the white line. I had a very fine specimen of daguerreotypy given me a few days ago. It is before me as I write. It represents a gentleman in a black coat seated before a background of medium tint. The white line is unmistakable in some places where the background abuts on the deepest shadows in the coat. In this case there was no developer to flow. The picture was developed with a vapour, so that with regard to the white line in daguerreotypy the problem requires another solution.

In all photographic problems of these kinds there is an element that requires to be taken into consideration, and that is personal

equation. Is it not the fact that while one photographer is daily attacking all kinds of outdoor and indoor subjects without thinking of backing a plate, except when the nature of the subject renders that course absolutely necessary, and yet producing negatives free from halation, another quite as skilful a photographer, as far as his results are concerned, will have to use backed plates to photograph even the knocker on a street-door? I dare say one could look over hundreds of photographs before finding a good example of the white line, but when that example is found probably it will also be found that one has only to look over the work of the same photographer to find plenty more equally good. It is quite possible that the white line and halation are more closely connected than one might suspect. Not that the cause is the same, but that whether the phenomena are of frequent occurrence or not is a matter arising in a great measure from the methods or personal equation of the manipulator. The halation will also be a white-line. Perhaps some philosopher in days to come will investigate and let us know why it is that often the most careful student of photographic science, the most rigorous observer of all the rules and regulations, laws and by-laws of the text-books, with every aid to success at his disposal that money can buy, and careful and orderly in his procedure, will in practice make negatives always over or under or too or not enough something, with a plentiful crop of just the kind of interesting matters for investigation that led to this article, while an apparently most careless hustler, with apparatus all that apparatus should not be, with a pinch of this and a drop or two of that in a dirty measure, a dirty dish, and a dark-room that would give a tidy man a fit to behold, will produce results almost perfect of their kind. Until this question is properly investigated, let us assume that the answer is, it is due to the possession or lack of the photographic instinct.

ALEXANDER MACKIE.

## RED TONES ON SULPHIDE-TONED BROMIDES.

[The following notes, on a method on which little has been written, are from our Boston contemporary, the "Photo-Era." The writer, Mr. George H. Scheer, evidently thinks well of this process, which, we may point out, was first recommended by Mr. A. H. Avery in "The Photogram" for 1904, and has since been worked and demonstrated very successfully by Messrs. Wellington and Ward. We regard it as too lengthy for regular work, but for occasional use it is undoubtedly a useful process.—Eds. "B.J."] ]

By this process we are able to produce on bromide paper a variety of red tones ranging from orange to crimson, the tint depending upon the brand of paper used, the length of exposure and development, and also upon the length of time the toning is allowed to continue. Naturally, a red tone is desirable only in a very limited class of subjects, such as sunrise and sunset views and fire scenes; but the effect of proper toning on these is marvellous, the tones obtained being so realistic that the picture looks more like a painting than a photograph.

It is hardly necessary to state that it is never advisable to carry the toning process so far that the entire image has been converted into red, as the result could not be anything but unnatural and disagreeable in nearly every instance. The charm of the process lies in the double tones obtainable. The toning-bath will act on the lightest tones first, progressively attacking the darker ones. The toning may be stopped at any point, the action of the toner ceasing as soon as the print is removed from the bath, and no further after-treatment is required, the print merely being placed in a tray of running water for about half an hour's washing.

The first step in the process—or, rather, the preliminary step—is the redevelopment of the print. This may be done as above described, but a print toned brown by the hypo-alum method will tone equally well by this process.

Prepare your toning-bath as follows:—Dissolve ten grains of

ammonium sulphocyanide in ten ounces of water (preferably distilled or pure rain-water) and add one grain of gold chloride. The gold chloride is best kept in a stock solution, the strength of the solution being immaterial so long as you know what it is. The stock solution should be made up with distilled water. As soon as your bath is mixed it is ready for use. Pour it into a clean tray—one of porcelain or glass, if available, being the best to use—and immerse the print in the solution. If you have time it is well to rock the tray constantly, as it ensures even toning. After a few minutes the lightest half-tones will begin to assume a light reddish tint, which will deepen gradually, and one after the other the deeper tones will successively take the tone. The rapidity of the toning action depends upon the amount of gold in the bath. With a bath of the strength above given it will take about half an hour to an hour to obtain the tone desired, the deeper the red the longer the time required. The bath becomes exhausted rather quickly and the toning proceeds more and more slowly as the gold is deposited. To accelerate the action it is only necessary to add a little of the gold solution, removing the print from the bath first and thoroughly mixing the solutions before replacing the print in the bath, for otherwise the toning will be uneven. When the desired tone is reached, remove the print from the toning-bath and place in running water for half an hour's washing. If, when the print is toned, you wish to strengthen the tone in any part of the print, this may be



ly accomplished by resorting to local toning. With a cotton swab, soaked with the gold solution, go over the portion of the print you wish to tone while the print is covered with a shallow solution of the toning-bath. After most of the gold solution has been removed, the swab has diffused into the bath the tray may be tilted so as to leave the spot you are working on uncovered, and you can then go over it with the swab until the desired tone is secured.

Generally speaking, prints which have had a comparatively long exposure and short development, and, therefore, take a light brown tone in redeveloping, will assume more or less of an

orange tone in the gold sulphocyanide bath. On the other hand, prints that have had a short exposure and long development, and which come out of the redevelopment having a deep, dark brown, take a purer red tone. In "Royal" paper the red is brick, or chalk-red, while in Platino bromide it is more of a crimson. So you will see that the tone of red which the print will assume is determined almost wholly by the length of exposure in making the print. Long exposure gives yellowish reds, short exposure brick-red and crimson. Determine beforehand what tone you desire to give the print, and you will be able to get it exactly after a little experience. GEORGE H. SCHEER.

## THE NATURE OF PHOTOGRAPHIC IMAGES.

MR. E. BLAKE SMITH's article on the nature of the image in a P.O.P. print was a very valuable and suggestive one, and I naturally find it of great interest, as it in some measure affords confirmation of the theory of re-development put forward by Mr. Carnegie and myself in 1905. At the time we looked upon the facts which we discovered as interesting rather than important, excepting, perhaps, in the case of the re-developed iodide image which proved to possess such covering power as to render the process a valuable method of intensification. One never knows, however, where the numerous by-paths of a piece of photographic research work lead to, and it is never safe to leave them quite unexplored, therefore we recorded such facts as we had time to determine on the chance that later they might be useful. Mr. Blake Smith seems to have been the first to turn them to account, and after carefully reading his paper I am inclined to think that he has made a very good case for his theory concerning the presence of sulphides in the gold-toned P.O.P. print. In connection with this subject there is a point which possibly he has missed. If silver sulphide exists, then, as it is formed in gelatine, it is very likely to be easily soluble in hot water, and as is the brown sulphide image of a sulphide-toned bromide print, this is the case it can be separated quite easily from the other constituents of the P.O.P. image, and its existence can be definitely proved or disproved. If, however, the sulphide forms a lake with silver chloride, as Mr. Blake Smith assumes, of course, it may not be soluble. If it proves to be insoluble in water, while other tests prove the existence of a sulphur compound, then there is strong presumptive evidence in favour of the lake theory.

There are one or two points in connection with the residual silver compounds that we found in various developed images that are worth mention. Even if a fair quantity of such compound is found after the metallic silver has been removed from the image by nitric acid or some other solvent, it does not necessarily follow that that residue is either quite undevelopable or insoluble or "stable" in P.O.P. A portion of it may exist simply because it was protected from the fixing bath by the silver. We found many instances of such protective effects. Notably in the case of images bleached in bichromate solutions, where the silver haloid compound and the chromium compound are mutually protective, as pointed out in our articles in the "Amateur Photographer." This is a matter that must not be overlooked in the analysis of photographic images, for one cannot be quite certain that all the soluble constituents of the image have been removed until the various solvents have been applied several times alternately.

### Intensification by Increase of Bulk of the Image Compound.

As regards the enlargement of the particles being the cause of the greater density produced by re-development, we did not suggest the formation of a "lake," as it appeared to us that the simple increase in bulk was enough to explain the matter. Mr. Blake Smith does not seem to consider it enough, partly on the ground that by bleaching the image we can increase the size of the particles, and yet decrease the covering power. Naturally, this is so because the small black particles are transformed into particles which, though larger, are white and more or less translucent. If, however, only partial development will render them black and opaque, the necessary condition for intensification is secured without the interposition of a

lake. I think the results we obtained with re-developed iodide images prove this. In these experiments we produced strong intensification and quite black images, though the reduced silver was very small in quantity, too small, in fact, to protect the iodide from the action of a fixing bath in which it, or the greater part of it, was readily soluble. So far as we could determine, the bulk of the iodide was just ordinary silver iodide with no peculiar features suggestive of a lake, and we considered that our experiences and tests of the iodine method of intensification fully justified the suggestion that a simple increase in bulk could be productive of intensification. I am therefore not quite in agreement with Mr. Blake Smith's contention that the formation of a lake must be assumed to account for the greater covering power, though at the same time I am strongly of opinion that some such lakes or solid solutions, or whatever we may call them, are formed in greater or lesser quantity in certain conditions. I think the cessation of development at such an early stage proves their existence in the case of bromides and chlorides, though it may not do so in the case of the iodide. In our articles we mentioned one extraordinary form of silver chloride, but we came across and we repeatedly found very intractable compounds that were certainly not ordinary halides. A notable instance was the deposit found on Krystal gaslight plates. Mr. Smith refers to the coloured images formed on such emulsion by prolonged exposures, but the ordinary black image also contains a similar compound in liberal quantity, and his term of "lake" is probably as applicable to it as to the coloured images.

While studying Mr. Blake Smith's paper it occurred to me that there are certain coincidences in the behaviour of various images that may be worth further study.

### The Two Classes of Bleaching Agent.

We have available two classes of bleaching agents. The one class oxidises the image directly and produces a simple silver halo'd salt that cannot be developed without exposure to light, while the other acts upon the image indirectly and produces a complex compound of silver and halogen that is quite readily developable without any exposure. Bromine water is an example of the first bleaching agent, while a mixture of potassium ferricyanide and bromide is an example of the second—a good example because its action and effects have been closely studied and examined. An image bleached in bromine water, if exposed and developed, behaves in practically the same way as an ordinary bromide emulsion dry plate. It can be rendered undevelopable by over-exposure; it develops very slowly and with difficulty if under-exposed, and it cannot be re-developed to its original density unless exposure has been approximately "correct." There can be no doubt that in both cases exposure produces the same light-product or latent image, which product, according to many authorities, may be a lake or solid solution somewhat similar to the lakes described by Mr. Blake Smith.

### Does a Bleacher give a Compound similar to the Latent Image?

The image bleached in the ferricyanide and bromide solution requires no exposure, and too much exposure will render it undevelopable, while without any exposure at all it will develop very rapidly. These facts suggest that it contains a similar compound, or a similar "latent image," to that produced by the exposure to light of simple

silver bromide, but possibly in a larger quantity. If a similar product is formed either by the reducing action of light as silver, bromide, or by the action of an oxidiser on silver in the metallic form, we may expect the second method to produce the larger quantity, seeing that the action of the oxidiser affects the whole particle, while that of light can affect only a small portion of it, and the suggestion that the oxidised particle contains the larger proportion of "latent image" is supported by the fact that it develops more rapidly.

Here we come to the coincident facts referred to. Analysis, after development, shows that an image rendered developable by exposure to light contains only the faintest possible traces of the mysterious lakes under consideration, whereas the image that has been rendered developable by a process of oxidation contains a sufficient quantity to give it greater covering power, and is, in fact, intensified. Thus, in the case where there is every reason to expect a larger quantity of the product that forms the latent image, we also find a larger quantity of the undeveloped "lake."

This at once suggests a possible connection between the latent image and the residual lake, but if we assume the two to be the same, then the logical sequence is rather remarkable.

### A Theory of an Undevelopable Latent Image.

First, we must admit that the latent image, whether produced by light or by chemical action, is itself undevelopable, but that in its presence the immediately adjoining silver bromide becomes developable: this being quite opposed to the general idea that the image, as a whole, is developable, because the latent image is developable.

Second, we must consider reversal to be wrongly so called, and

must look upon it as the simple consequence of the continuing action of light, or of the production of an excess of undevelopable product.

Third, we may look upon development as being an action of catalytic nature, the latent image being the catalyser.

I am not able to say how far such a revolutionary hypothesis will square with other facts that have been ascertained by those who have especially devoted themselves to the study of the latent image, but at any rate, the suggestion that the latent image is undevelopable instead of being developable, offers a very simple explanation of reversal, which is more than some other theories do. It also very fully accounts for the facts observed in connection with re-developable images. It does not offer any obvious explanation of re-reversal, but that is a phenomenon that has always seemed to me to be one of more or less hypothetical nature.

There is yet one more point worth mentioning. If the lake, solution, or latent image formed by the action of certain oxidisers upon silver is the same thing as the light product formed when silver bromide is exposed, then it is possible to prepare the latent image compound in bulk and analyse it. As a matter of fact, the haloid compound formed by the ferricyanide and bromide bath has already been proved to contain an excess of silver (see Mr. D. J. Carnegie's paper in B.J., November 30, 1906), and therefore to be at least analogous to the assumed composition of the image on an exposed plate. It should be easy to separate the undevelopable and developable portions of the compound, and to determine the composition of the former. The results might be interesting, even though they would not definitely prove that the undevelopable lake and the latent image were one and the same thing. C. WELBORNE PIPER.

## SOME QUESTIONS AND ANSWERS RELATING TO COPYRIGHT.

[An Indian reader of the "B.J.," writing as "B. O. J.," from Kathiawar, addresses to us a number of questions as to infringement of copyright which we can better reply to here than in the usual "Answers to Correspondents" column. The replies to our querist's specific inquiries will perhaps be of interest to others than himself, right Act supplies an unmistakable answer to many of the points in the "B.J. Almanac" for 1906 affords an explanatory review of almost equal importance.—Eds., "B.J."]

Is THERE ANY INFRINGEMENT of copyright in each of the following cases?—

A reproduces a copyright photograph by B of C to C's order:

1. On paper or basis different from that used by C.
2. By a different process:
  - (a) Photographic, or
  - (b) Manual, as by drawing or painting in water or oil colours.
3. The reproduction is not an exact facsimile, but (a) faked, (b) retouched, and (c) manipulated so as to produce (1) a different, (2) novel, or (3) better effect.
4. The reproduction is a caricature. Will it make any difference were it not to C's order but to that of the publishers of "Punch" or the like?
5. The reproduction is an enlargement or reduction on bromide, gaslight, or carbon paper, or
  - A, a miniature, (a) plain, (b) hand-painted.
  - B, a stamp photograph with artistic border.

In reply: It is a pity our querist does not make it perfectly plain as to who is the proprietor of the copyright. If C paid for his photograph to be taken, then all the acts mentioned in 1 to 5 can be done by A to C's order, because C is the owner of the copyright. But if B took the photograph without "good or valuable consideration," the copyright is vested in him, and no one except himself has the right to make copies in any shape or form. It matters not whether (1) the paper is different, (2a) the process photographic, or (2b) hand, nor does it matter (3) whether the copy is worked up or improved, or (5) enlarged, reduced, or coloured. So long as it is evidently a copy or colourable imitation it infringes the owner's (i.e., in this case, the author's) rights in it.

4. In the case of caricatures of photographs or other artistic works, we know of no case in point. But, arguing from literary

copyright, a parody of, say, Tennyson's "Charge of the Light Brigade" would not be an infringement of the literary copyright, and apparently, to judge from custom, caricatures of artistic works which are obviously intended to be caricatures are not infringements.

6. Will it make any difference were it not to C's order but of A's own accord to display it as a specimen of his own work and skill in reproduction?

Presuming B to be the owner of the copyright, it would equally be an infringement.

7. A uses a copyright artistic border design or decoration of other work of B, purchased from him, to surround or embellish his own production.

- (a) Where he uses a border negative direct same size.
- (b) Where he makes an enlargement or reduction of border negatives of one size with him for use by him with larger or smaller size prints.

(1) Where such larger or smaller size border negatives are put on the market by the author of the copyright, and

(2) Where they are not, or not available, the stock being exhausted.

A has no right to make a negative from the copyright border design of B, unless the act of purchase is specified, as it is, in such case, to confer a limited right of reproduction. It is immaterial whether the copy is made (a) same size, or (b) enlarged or reduced. If he has the right to copy he can do both; if he has it not, he may do neither.

In the case of border negatives (1) placed on the market, it is understood that positive copies may be made, but it would no doubt be considered an infringement to reproduce and sell exact (i.e., negative) reproductions of the borders. Such provision is an



vious condition of sale, and would not be affected by the fact (2) that particular sizes of the border negatives were out of stock.

8. Where he supplies negatives of prints (copyright) to manufacturers and other customers, for multiplication, for sale by such manufacturers, or private distribution by customers.

9. If the reproduction were the customer's own likeness.

10. And if something else, e.g. (a) a statue, (b) oil or water-colour painting, (c) a magic-lantern slide, from pictures in illustrated magazines, paintings, etc.

11. Where such magic-lantern slide is projected on the screen and exhibited

(1) To the public for profit.

(2) To private spectators for amusement by an amateur, or lecturer, or expert in science and art.

It is certainly (8) an infringement to make negative copies of copyright photographs. Equally, the issue of prints from negatives so made would be an infringement. Both parties would be separately liable to action.

The fact of the photograph being the customer's own likeness (9) need not affect the matter, unless he had paid for the sitting the usual course—that is to say, unless the copyright was his.

Negatives or other reproductions may only be made of any object when (1) the person giving the order is the owner of the copyright, is acting for the owner, or (2) when there is no copyright in the object copied. (Answer to 10.)

If the form of the copy be a magic-lantern slide (11), the act is

one of infringement, and it is also infringement to exhibit the copies (1) to the public for profit, and (2) privately. The Copyright Act does not distinguish between different kinds of exhibition.

12. A paints or gets painted a background for photographic use from a copyright design or photograph supplied by B, his customer.

A. For use in his own studio (a) generally, (b) for photographing B to his order therewith, (c) for a present to another photographer

B. For sale.

The use (12) of a photograph (in which there is copyright) in the form of a background will certainly be infringement for whatever purpose the background is made. Both the copying and the exhibition, or display, of the background will constitute infringement.

13. In cases 1 to 12 if A is a foreigner and the reproduction is made in a foreign territory for foreign use.

Legally, copyright in an artistic work is unsustainable in a foreign country only when one of the countries does not subscribe to the Berne Convention of International Copyright. Most civilised countries are, however, subscribers to the Convention; the principal exception is the United States of America. Thus (13) if A in Italy copies a photograph in which there is copyright in Great Britain, A exposes himself to action for infringement.

14. If the foreign reproduction is supplied to order of a British subject in British territory.

The liability referred to under (13) is not affected by the nationality of the parties to a transaction.

## THE INFLUENCE OF THE PROPORTION OF BICHROMATE ON THE SENSITIVENESS OF ENAMELENE SOLUTIONS.

(A communication to "Photographische Korrespondenz.")

Eder's "Year-Book" for 1907, page 169, I published some details to the influence of various substances on the enameline solution employed in printing half-tone plates for etching. The following experiments have been made in further investigation of this subject, and are confined to the effect of varying proportions of bichromate the sensitiveness of the coated plates. In these experiments which have been made in the Imperial School of Graphic Arts, Vienna, I prepared a number of enameline solutions, all of which contained the same proportion of Le Page's fish glue, water, and albumen, and differed only in the proportion of bichromate. This latter is given per cents. of the mixture of fish glue and solid albumen; that is say, an enameline solution of 30 per cent. bichromate has the following formula:—

Fish glue .....	30 ccs.
Water .....	70 ccs.
Ammonium bichromate (1 in 10 solution).....	10 ccs.
Albumen solution (1 in 5) .....	20 ccs.

The plates were prepared with the different solutions, printed for the same length of time under a negative, each series of experiments including a short, normal, and a full exposure. These experiments gave the following results:—In the case of exposures by diffused daylight or sunlight a film containing about 10½ per cent. of bichromate proved the most sensitive. The formula is:—

Fish glue .....	20 ccs.
Water .....	45 ccs.
Ammonium bichromate solution (1 in 10) .....	35 ccs.
Albumen solution (1 in 5) .....	20 ccs.

Solutions containing from 9 to 12 per cent. bichromate gave results very little different from the above, whilst the films with less bichromate separated from the plate on development. Others with more bichromate (15 to 20 per cent) swelled up strongly after development and separated to some extent from the plate. Moreover, in the case of the stronger solutions the half-tone dots printed more strongly on the surface of the film.

When printing with mercury-vapour light (Cooper-Hewitt system), a film containing 6 per cent. bichromate proved the most sensitive, those with 4 per cent. adhered badly to the plate in development, while those with 9 per cent. swelled very slightly. The same result

was obtained on exposing with the "Dauerbrand" lamp. Here, again, a strength of 6 per cent. proved the best.

The fact that strongly bichromated films require longer exposure than those less strongly bichromated is to be attributed to a kind of screen action in the film. In order to decide this point I prepared two solutions, to one of which (a) I added about 9 per cent. bichromate, and to the other (b) about 24 per cent. In the case of the above experiments the 9 per cent. films were very sensitive, whilst the 24 per cent. proved very insensitive and adhered badly in development. In the latter experiment, solution (b) was strongly diluted in order to give a thinner film which could be printed through and would not therefore give the same screening action as a thicker film. The two formulæ run as follows:—

(A) Fish glue .....	30 ccs.
Water .....	50 ccs.
Ammonium bichromate solution (1 in 10).....	30 ccs.
Albumen solution (1 in 5) .....	20 ccs.
(B) Fish glue .....	30 ccs.
Water .....	40 ccs.
Ammonium bichromate solution (1 in 10).....	80 ccs.
Albumen solution (1 in 5) .....	20 ccs.

The zinc plates prepared in this way were printed in daylight under the same negative for the same length of time. It was seen that the strongly bichromated but thinner film (b) was just as sensitive as the weakly bichromated thick film (a).

The resistant properties of the enamel were also the subject of observation. The dry plates were burnt-in for the same time and etched in aqueous 5 per cent. nitric acid. The thinner enameline of the film (b) withstood somewhat longer etching than the thicker enameline of solution (a). It was thus seen that the proportion of bichromate is of great influence on the hardness of the enamel, and therefore explains the favourable action of the tanning mixture of chrome alum and bichromate on fish glue prints.\*

The addition of chromic acid or about 1 cc. of ammonia to the first experimental solution above mentioned produced both by daylight and mercury-vapour a depreciation of the maximum sensitive

\* Compare Tschörner, "Phot. Korr.," 1901, page 679.

ness, as regards the proportion of bichromate, the results were the same as without this addition. Experiments have thus shown that for printing by daylight a proportion of bichromate about 10 per cent. gives the greatest sensitiveness in the case of films of normal thickness, whilst in the case of the Dauerbrand lamp, a proportion of 6 per cent. is the best. Thicker films require for the production of the same sensitiveness as the normal mentioned above a lesser proportion of bichromate, whilst thinner films under the same conditions can do with a relatively stronger proportion of bichromate. The fully bichromated film giving a hard enamel, it is advantageous to add to the enamelling solution slightly more bichromate than is necessary for obtaining the greatest sensitiveness. The average formula which can be recommended is as follows:—

Fish glue .....	30 ccs.
Water .....	40 ccs.
Ammonium bichromate solution (1 in 10) .....	40 ccs.
Albumen solution (1 in 5) .....	20 ccs.

J. TSCHÖRNER.

#### THE PROFESSOR OF PHOTOGRAPHY AT DRESDEN.

DR. R. LUTHER, whose appointment to the Professorship of Photography in the newly founded faculty of photography in the Imperial Technical High School at Dresden we announced in our last issue, is the subject of a notice in our Dresden contemporary, "Die Photographische Industrie." Dr. Luther was born in Moscow in 1868, and after passing through the universities of Dorpat and Leipzig became assistant to Professor Beilstein in 1890-1894. From 1894-1896 he was assistant to Professor Ostwald in Leipzig, and in the latter



year became assistant in the Physico-Chemical Institute of the Leipzig University, from which position he was promoted to that of sub-director in 1900. Since 1906 he has been Extraordinary Professor for Physical Chemistry at Leipzig. During his university career Dr. Luther has contributed many papers on photo-chemistry, notably those on reversible photographic processes, the latent image, the swelling of gelatine, the oxidation of sodium sulphite and of sodium thiosulphite in the air.

The photograph which we reproduce is from the well-known studio of Perscheid, Leipzig.

HERR HANS SCHMIDT, the author of several popular handbooks on photography in Germany, has been awarded by the Vienna Photographic Society the Society's silver medal on account of his published works.

#### RAPID PHOTOGRAPHY.

Writing in our Philadelphia contemporary, the "Bulletin of Photography," "Professional" says:—Occasionally we see advertisements offering some wonderful method for sale, but those reading the following simple descriptions will be in a position to turn out just as good work, either as proofs or finished work (where no retouching is required), as can be done in any other way, and without any special apparatus of any kind.

My method of work is as follows:—The plate is exposed in the usual way, then developed with metol-hydroquinone in an Ingenio tank, the plate then being transferred to a fairly strong hypo bath, to which a little formalin has been added to harden the film. By this means the negative is ready to print from in five minutes after exposure.

After taking the negative from the fixing bath, it is rinsed in water and then put between blotters, where the surplus water is blotted off by passing an ordinary mounting roller over it. (The formalin in the fixing bath hardens the film so that it will not stick to the blotters.) The back is then wiped with a soft rag and the negative placed in the printing-frame.

It is better to use a larger printing-frame than the size of the negative, having a piece of plain glass in it and a piece of card cut out to the size of the negative. This prevents the negative from slipping about, and any shaped mask can be used between the card and the glass. When the negative is in the frame and a suitable mask adjusted, a thin piece of celluloid is laid on it and the air-bells expelled by rubbing down with a rag.

Now we are ready to print, and the paper or postcard is placed in position, exposed, developed, and fixed in the usual way, and the finished picture can be in the final washing water in fifteen minutes after the exposure. If thin, clear celluloid is obtained, no blur will show on the finished print, and I have photographs that are just as sharp and clear as it is possible to get from a dry negative. After a sufficient number of prints have been taken from the negative, it should be put in water, washed, and dried in the usual way.

The whole secret is in placing the celluloid between the negative and the paper, and although this is known to a good many people there are thousands who have not heard of it, and who wonder how postcards are turned out so quickly.

## Photo-Mechanical Notes.

#### Electrolytic Etching of Printing Plates.

A method has recently been patented (Specification No. 23,319, 1906), in which the printed metal plate, bearing a resist of bichromated albumen or fish-glue, is employed as the anode in a concentrated solution of a tanning agent. The cathode is composed of metal similar to that of the printing plate. The patentee, Dr. Hans Strecker-Aufermann, of 2, Friedrichstrasse, Munich, claims to have discovered that the hardened layer of bichromated fish-glue upon the metal plate permits an electric current to pass; upon this he bases the electrolytic process. The electric current permits of copper, which is provided only with a coating of chromated glue, being etched not only with iron chloride, but also with other salts, such as zinc chloride, which in a purely chemical application do not etch copper at all. As an electrolyte any concentrated solution may be used which has a tanning action on the layer of bichromated glue. The solution of ferric chloride usually employed is convenient; but any of the solutions which are employed as tanning agents for glues, etc., can be employed with the same good results. Such are sulphate of ammonium, sulphate of zinc, chloride of zinc, sulphate of magnesia, hypo, sulphate of copper, chloride of copper, sulphate of nickel, sal ammoniac, chloride of sodium, sulphate of sodium, chrome alum, ferricyanide of potassium, chloride of manganese, ferrous chloride, chloride of chromium, and so on, in aqueous solutions. The plate is protected at its edges against the etching action by a coating of varnish, and is suspended in the bath as anode. The material of the cathode may be of any kind. The electrolyte is an aqueous solution of one of the foregoing tanning agents. After about five to fifteen minutes the layer composed of glue or the like swells to different thicknesses according to the image. The



quit, having been interrupted up to this point, is now closed and etching begins, the ion of the acid passing to the metal through the layer, which acts as a diaphragm, whilst dissolved metal goes to the cathode. As the current varies according to the thickness of the layer, which in turn is dependent on the greater or less exposure of the film, an etching is obtained corresponding to the image. The process can very advantageously be carried out by arranging a desired number of etching plates, the faces whereof are all directed towards the cathode, and are consequently anodic, whilst the backs, which remain bare and must not be varnished, are all directed towards the anode, and are consequently cathodic. All the anodic sides are etched, whilst the dissolved metal precipitates on the cathodic sides, or hydrogen is set free on them when certain electrolytes are used. The intensity of current must be kept within narrow limits—i.e., between 0.35 and 2 amperes per square centimetre. The electrolyte is generally ferric chloride at 42deg. to 48deg. Baumé. The concentration of the bath is high. It is, however, sometimes necessary to use baths which gradually become weaker, or to produce a dilution of the bath by introducing water. The dilution can also be produced by separating the anode chamber from the cathode chamber by means of a diaphragm and using a diluted solution in the cathode chamber, whilst the anode chamber contains a concentrated one. Diffusion causes the degrees of concentration to equalise—i.e., the solution in the anode chamber becomes gradually weaker. Thus it is not possible to give a fixed current; it is, on the contrary, necessary to follow other well-known indications. When the etching operation is completed the plate is cleaned with caustic soda, after which it is re-etched in the ordinary or in the above described manner. It is not necessary in the above process to supply current from an external source. It is, for instance, possible, as in the well-known Daniel cell, to provide a zinc plate, carrying a layer of bichromated glue or a similar material and a copy of the image, and to dip it into sulphate or chloride of zinc or ferric chloride in front of a copper or lead plate arranged in a porous cup containing a suitable depolarising fluid, so as to obtain a cell having zinc and copper as poles and a diaphragm. In order to prevent (in this case as well as in the process wherein an outside current is made use of) any precipitation of hydroxide of iron which, when zinc etching is carried out, would be formed behind the layer, a suitable material, such as ferricyanide of potassium, oxalic acid, sugar, glycerine, citric acid, tartaric acid, acetate of soda, etc., is preferably added to the ferric chloride. When the circuit of the cell is closed on a resistance or when the cell is put into short circuit, the etching process takes place. Similarly, a Leclanché cell can be formed with sal ammoniac or sulphate of ammonium as an electrolyte, and a solid depolarising agent, for instance, peroxide of manganese, the circuit of this cell being closed on a resistance or short-circuited.

## Exhibitions.

### SOUTH LONDON PHOTOGRAPHIC SOCIETY.

In obtaining the use of the South London Art Gallery, Peckham Road, the South London Photographic Society is to be congratulated on the new opportunities for more adequately displaying their exhibition, opportunities which, it must be admitted, they have used to very great advantage. The collection of photographs to be exhibited until March 21 must be considerably less in number than those we have visited for the past few years at the Camberwell Baths, but the show is none the worse for that, and surprisingly better than the very excellent hanging it has received. In their old quarters the Society were forced to do the work of hanging within very small limits of time, but with the accession of more convenient accommodation they have demonstrated their ability to do justice to the work submitted to them. As in previous years the members' classes, and particularly that set aside for architecture, are a strong attraction of the show. The bronze plaque in Class A goes to Dr. Evershed for "La Brunette"; No. 14, a piece of work which we confess we like less than Dr. Evershed's usually attractive excursions

amid London scenes, on the ground that it lacks variety of tones in the face, and gives an unpleasant suggestion of illness to the subject. Miss M. A. Smart receives a bronze plaque for No. 36, "Apple Blossom," a quite excellent piece of photography of such subjects, and mounted very appropriately.

In Class B the bronze plaque goes to Mr. E. Pady for No. 62, "Christchurch," which has good qualities of light and airiness. No. 67, "Beyond," by G. J. T. Walford, is a subject of the opposite class, but well treated and full of the rich tones and shadows which belong to a dark subject of this kind. Mr. Gideon Clark, the secretary of the South London Society, is commended for No. 76, "A Refuge and Strength," a rendering of a church which caps a hill and dominates the town collected in the valley below. It is a piece of composition which is not without certain sentiment, and well carries out its title. In Class C the bronze plaque goes to Mr. Clark for No. 103, "Chingford Marshes," a very good rendering of a marsh stream; it receives the gold medal awarded to the best picture in the exhibition. Mr. Clark shows his work in almost every class, and is certainly to be congratulated on the high pictorial standard which he maintains. His "Three to Form a Quorum," No. 159, in Class D, is a clever piece of figure study in sunshine, which, however, does not receive an award. "Gossips," No. 171, by H. Creighton Beckett, is spoilt by the line of light which crosses the centre of the picture and gives to the side of the tunnel which forms the foreground almost the effect of a dark mount. In Class F, Dr. Evershed receives a silver plaque for "Lingering Mist," No. 187, though we must confess to feeling dissatisfied with the print as a rendering of this aspect of nature. The veil which masks the more distant portions of the subject seems to rise from one point, and suggests a bonfire more than a mist. Dr. Evershed's "The Signal Box," No. 180, is, we think, immensely better as regards composition, and is technically a better oil print than the medalled picture. The open classes supply a good deal of excellent work, and include perhaps half a dozen or a dozen subjects which might very well have been dispensed with. Mr. G. R. Henderson in "Lilith," No. 193, should use a moulding one-quarter the thickness, and he would then get the advantage of the really dainty mounting of the print. "A Reverie," by Mr. and Mrs. Bracewell, No. 211, is an altogether dainty piece of work. No. 220, a multi-colour print by Edward Warner, obtains a good deal more success than is usual in experiments of this kind. Miss Agnes B. Warburg's "Spring," No. 251, is as commendable a piece of work as any in this class, though it has not attracted the judge's favour, the awards going to "Low Tide," by Walter Selfie, No. 316; "The Garden of Allah," by Louis J. Steele, No. 302; to Basil Schon for "Dingy London," No. 273; to E. R. Bull for "Light and Shadow," No. 246; and to G. J. T. Walford for "Norwich Cathedral," No. 234. There is a section devoted to colour-photography, in which Mr. Henry J. Comley receives a bronze plaque. The exhibition also includes an invitation section as well as a number of trade exhibits, including those of Messrs. O. Sichel and Co., R. and J. Beck, Ltd., Ross, Ltd., Spiers and Pond, Walter Tyler, the Alstona Gallery, and "The Amateur Photographer." Owing to the death of Mr. Horsley Hinton and the indisposition of Mr. Furley Lewis, by whom, in conjunction, the exhibition was to have been judged, the awards were made by Mr. F. J. Mortimer; those in the colour-photography and technical section being made by Mr. E. J. Wall. A word should be said for the excellent production and printing of the catalogue, the work of the St. Clement's Press.

**STREATHAM EXHIBITION.**—The members of the Streatham Portfolio held their second annual exhibition on February 27, 28, and 29, which was very well attended, admission, catalogues, and refreshments being free. The pictures were hung on artistic canvas screens, with natural hanging surface and dado of chocolate distemper finished off with stained wood skirting and rails. The pictures showed distinct evidence of an all-round advance since the last exhibition, which suggests that societies run on the lines of the Streatham, with every effort being directed to advancement through the portfolios, and with meetings of a secondary and social nature, are likely to be very useful in producing better work. Particulars of membership can be obtained of the hon. sec., Mr. F. E. Huson, 56, Salford Road, Streatham Hill, S.W.

## FORTHCOMING EXHIBITIONS.

- March 7 to 14.—Leicester and Leicestershire Photographic Society. Sec., Lewis Ough, F.C.S., Fernleigh, St. James's Road, Leicester.
- March 7 to 21.—South London Photographic Society. Sec., E. Pady, 260, Southampton Street, Camberwell, S.E.
- March 12 to 14.—Shropshire Camera Club. Sec., W. D. Haydon, The Schools, Shrewsbury.
- March 14 to 21.—Sunderland Photographic Association. Sec., W. E. Kieffer, Stirling Street, Sunderland.
- March 16 to 19.—Cripplegate Photographic Society. Sec., J. G. Denyer, 15, Ostade Road, Brixton Hill, S.W.
- March 18 to 21.—Nottingham Camera Club. Sec., S. W. B. Vines, 101, Sherwood Street, Nottingham.
- March 21 to 28.—Midlothian Photographic Association. Entries close March 14. Sec., Robert Oliver, 6, Marieston Terrace, Edinburgh.
- March 30 to April 4.—Malvern Camera Club. Entries close March 21. Sec., J. B. Nickolls, The Exchange, Malvern.
- March 31 to April 4.—Sheffield Photographic Society. Hon. Sec., J. W. Wright, 62, Vale Road, Sheffield.
- April 21 to 24.—Southend-on-Sea Photographic Society. Entries close April 6. Sec., J. Archer, 24, Ashburnham Road, Southend-on-Sea.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents were received between February 24 and 29:—

**PACKING PLATES.**—No. 4,153. Improved packing for photographic plates or films. Marian Romanowicz, 322, High Holborn, London.

**PRINTING.**—No. 4,190. Improvement relating to photographic and postcard printing machine and the like. Ellis Graber, 16, Newton Road, Tunbridge Wells.

**PACKING PLATES.**—No. 4,338. New or improved method of and means for packing photographic plates, films, and the like. Guy Arthur Chambers, 55, Chancery Lane, London.

**PHOTOPHONE.**—No. 4,391. Electric photophone for the production of photophonographs or use as a telephone transmitter, also means of reproducing sound from photographs thus obtained. Josiah Frederick Child, 258, Rosendale Road, Herne Hill, London.

**"ELECTRIC ARC" PRINTING.**—No. 4,394. Revolving table made to carry any size printing frame for printing with the "electric arc." Edgar Watson Bowes, 16, Ethelden Road, Shepherd's Bush, London.

## New Trade Names.

**MOTOGEN.**—No. 298,091. Chemical substances used in manufactures, photography, or philosophical research, and anti-corrosives, but not including photographic developers, and not including any goods of a like kind to photographic developers. Allgemeine Petroleum-Industrie-Aktien-Gesellschaft, Unter-den-Linden, 35, Berlin, S.W., 64, Germany, manufacturers. November 18, 1907.

**ALBUMAT.**—No. 297,799. Photographic paper. Vereinigte Fabriken Photographischer Papiere, Blumenstrasse, 80, Dresden, A., Germany, manufacturers. November 7, 1907.

**CARBONIVRO.**—No. 299,160. Photographs. George Davison Reid, 151, Barras Bridge, Newcastle-upon-Tyne, photographer. December 30, 1907.

**A DAMAGED SHOWCASE.**—One night last week some person or persons are alleged to have wilfully upset a valuable photographic showcase erected in front of Mr. Jerome's premises, 283, Lord Street, Southport. The case was valued at about £25, and was well built, the covering being of lead. The police have the matter in hand, and have issued notices of a reward of £5 for such information as will lead to a detection and conviction.

## Analecia.

*Extracts from our English weekly and monthly contemporaries.*

## An Improved System of Mounting.

THAT a mounted photograph should lie flat and without curl or cockle (writes Mr. Nelson K. Cherrill in "The Photographic Monthly") is an absolute desideratum. Nothing is more destructive of pictorial illusion than unevenness of surface; so much so that the most distressing fate which can befall a really fine print is to get pasted into an album, where, in the general run of things, it will ruin itself and disfigure the book by giving a persistent warp or curl to the page on which it is stuck. Every kind of mountant in ordinary use is prepared with an aqueous solvent, the moisture from which is the cause of all the difficulty of flat mounting, as no means have yet been discovered of exactly balancing the expansion and contraction of the picture and its mount. A vast amount of ingenuity has been expended in the endeavour to overcome this apparently simple trouble. Probably the best solution of the difficulty up to the present time is that offered by the "Dry-Mounting Process," in which a dry print is forced into close contact with a dry mount in a heater-press. To the ordinary amateur, however, this system has two drawbacks: it requires a somewhat costly outfit, and it does not seem applicable to mounting pictures in a book. The process I am about to describe is carried out with a non-aqueous solvent, so that it has no tendency to cockle even the thinnest mount. It requires no heat and only a moderate pressure, so that it is equally applicable to mounting in a book or on separate sheets. The manipulation is also exceedingly simple. It is as follows:—Coat the back of the dry (and preferably untrimmed) print with shellac varnish, which is merely a solution of shellac in methylated spirits. When the varnish is dry the print may be mounted at once or at any future time. To mount it, all that is necessary is to rub over the surface to which it is to adhere with a small quantity of a mixture of acetone and alcohol, and to apply the print at once with a firm pressure which extends all over the surface. In two minutes the solvents will be dissipated and the mounting complete. Anything of its kind more simple or easy of execution it is difficult to imagine.

## Control of Contrast in Carbograph Printing.

In an article dealing with the above subject in the current issue of "Photo Notes" the writer states that contrast can be lowered by selecting a light tone pigment. Considering the brown tones available in carbograph, and ignoring the effect of after reduction, we have two light-toned browns in cold and warm sepia. Either of these gives a soft image from a negative of ordinary pluck and density, though the same negative may give hard results with blocked up shadows if we use "photo brown," "engraving black," or "red chalk." It should be noted that the "engraving black" is not a pure black—such a colour is hardly necessary in a carbograph process—it is a very deep brownish black which may perhaps best be described as an extremely dark sepia. The "red chalk" is also a brown of a very red tint if the silver is not removed by Farmer's reducer. If, however, our negative is very thin and soft we can gain pluck and contrast in the enlargement by using one of the three papers last mentioned, "engraving black" being perhaps best suited to the thinnest negative, while of the other two "photo brown" gives the strongest result.

**YORKSHIRE PHOTOGRAPHIC UNION.**—The annual meeting and exhibition of prints will be held in the Municipal Institute, North Street, Keighley, on Saturday, April 4.

**L.C.C. PHOTOGRAPHIC APPOINTMENT.**—As an experiment for one year the photographic work of the London County Council is to be done in the chemical and gas testing department by one assistant, at a salary of £200 a year, and two assistants and a boy at the rate of pay not exceeding 40s. and 15s. a week respectively. Thirty-five applications have been received for the first-mentioned post, and the Establishment Committee has, subject to the usual sanction, and to the candidate passing a medical examination satisfactorily, appointed Mr. Arthur Edward Lane. He is to give his whole time, and must not undertake any other work.



## New Books.

**Agenda Lumière.** 1908. Paris: Gauthier-Villars. Lyons: A. Lumière et ses Fils. Fr. 1.

Year by year MM. Lumière and their talented collaborators publish the results of experiments made in the Lyons laboratories. Since the results are usually of practical and permanent value we are glad to find the full texts of the papers collected in the year-book of formulæ and directions which the house of Lumière have issued for some years past. Moreover, the Agenda also gives a complete list of the photographic communications from the Lumière laboratory since the first, in 1892. The Autochrome plate, as we should expect, receives due attention, and the full directions for its use occupy pp. 62 to 79. Numerous tables of weights and measures, exposures, and optical matters constitute the middle portions of the book, whilst the later pages are devoted to a formulary for the photographic processes, the directions for the use of the Lumière chemical products, and to a record of exposures, in conjunction with which latter a series of perforated gummed labels is presented, enabling the entry in the register of exposure to be instantly turned out. Although issued in French—at the absurdly low figure of one franc—the book contains much of value to interest the English. Doubtless copies can be obtained through the English house of Lumière and Co., at 79, Great Russell Street, London, W.C.

**MINIATURE PRINTING.**—The "Photo-Miniature," we are glad to see, appearing with its once wonted regularity. The current issue, No. 86, reaches our table this week, and is found to be a manual of the carbon process, the modern methods of which receive careful consideration. Thus we find some words of appreciation of the Kodak Company's spirit sensitiser, notes on Mr. H. W. Bennett's latest sensitising formula, directions for the transfer of the carbon image to various final supports, in addition to brief descriptions of the latest developments in pigment printing, ozobrome, and carbochrome. The "Miniature" is issued in this country by Messrs. Swan and Ward at 6d. nett.

## New Apparatus, &c.

**Shape Holder.** Made by Kodak, Ltd., 57 to 61, Clerkenwell Road, London, E.C.

A very useful and inexpensive accessory for the professional photographer is provided in this little piece of apparatus, which is designed

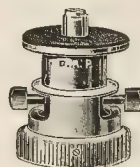


to assist in the cutting of oval or circular prints, and is certainly an effective aid in such work. It consists of a board provided with a spring similar to that of a printing frame. The spring serves to

hold the print under one end of the cutting shape so that pressure of the hand at the other firmly secures it and leaves the worker's other hand at liberty for making the cut. The apparatus is of a size suitable for using up old whole-plate negatives as the cutting base. The price of the apparatus is 1s. 6d.

**The "GGE" Tripod Bolt.** Made by Gustav Geiger, 16, Maximilian Platz, Munich, Germany.

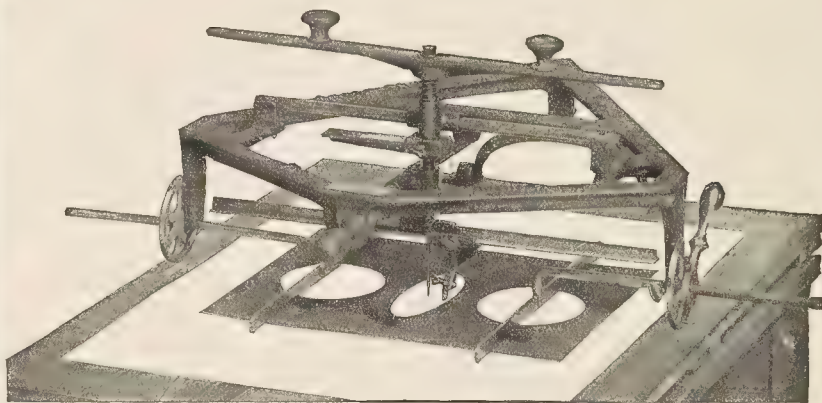
This piece of apparatus is a substitute for the tripod screw, and should be particularly useful for hand-cameras, the use of which on a tripod would be practised much more (with advantage to the results) were it not for the time wasted in attaching the camera to the tripod head and removing it therefrom. In the "GGE" there is no screw, but, instead, the vertical pin of the apparatus is pushed into the socket



of the bush and firmly locked there by the horizontal bolt shown in the figure. The construction permits of the camera being turned on its head just as can be done with a relaxed screw attachment, whilst the certainty and speed of the action certainly commend the accessory to the notice of hand-camera workers. The price of the bolt is 5 marks (5s.).

**The Diamond Oval and Circle Cutting Machine.** Sold by Kodak, Ltd., 57 to 61, Clerkenwell Road, London, E.C.

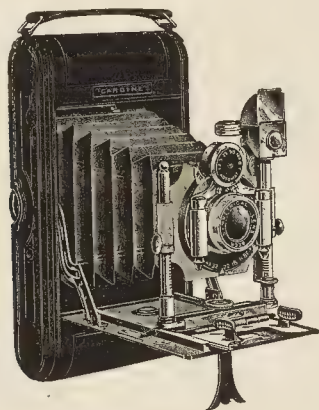
This new piece of apparatus provides for the rapid cutting of oval prints and oval cut-outs, possesses a wider range of adjustment, and is more substantially built than any instrument of the kind which we have yet seen. The machine will cut a circle up to 22in. in diameter, and an oval up to 22in. by 32in., either dimension being instantly obtained by setting each of the two scales. The angle of the cutting knife can also be adjusted to give a bevel outwards or inwards, or to cut perpendicularly as usual in trimming prints. Moreover, a diamond can be used in place of the cutting knife and glass or opal cut in the same way. The machine having been adjusted to a given size, any number of cuts can be done with great rapidity; in fact, the setting itself for a given oval or circle is a matter of a few seconds only. The machine should certainly be a valuable acquisition to the establishment of a photographer who prefers to make his



mounts suit the subject rather than rely invariably upon the stock mounts which he can purchase. The price of the apparatus, complete with knives and base, is £5.

The No. 3 B Carbine Folding Camera. Sold by W. Butcher and Sons, Camera House, Farringdon Avenue, London, E.C.

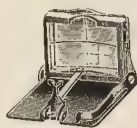
In this new model of folding film camera a quite new feature is the front which moves forward, and is locked in any position in a most rigid manner. The camera provides for the exposure of both plates



and films, and has focussing scales for both. Its other fittings comprise "Automat" shutter, rising and cross fronts, reversible finder and level, and Beck symmetrical lens. It is altogether a substantial instrument, and handsome in appearance. In quarter-plate size the price is £3 3s., in postcard £4 4s.

The Patent Newton Finder. Made by Gustav Geiger, 16, Maximilian Platz, Munich.

From a specimen of the finder submitted to us we see that one very good point in its favour is the automatic opening. On touching the lever on the right both the lens and the sighting-rod of the



finder fly up and fix themselves at right angles to the base. Similarly, on pushing down the lens, the sighting rod automatically "ducks under" the latter, and is thus protected from damage. The finder gives a picture 1 1/4 in. x 3/4 in., and costs, retail, 4s. 6d.

THE MOUNTANT SQUEEGEE.—Messrs. Houghtons Ltd. have issued a novel outfit which should appeal strongly to amateur workers for the reason that it means economy and absence of mess in the mounting of prints. It consists of a small spatula (with which a little of the usual semi-solid mountant is applied to the back of the print) and of a rubber squeegee of special form. This latter is used to spread the mountant evenly over the print, for which purpose it has the advantages of absorbing no paste and depositing no hairs. Both spatula and squeegee can be made perfectly clean in a moment or two, and the outfit, which costs only 6d., therefore prevents accidental contamination of the mountant in the most effective manner.

BENZOLE, BENZINE, BENZOLINE, AND BENZENE.—A correspondent of the "Chemist and Druggist" usefully calls attention to the confusion which exists between these various names. As he states, petroleum spirit is often marked and rightly so, "benzine." "Benzoline" refers to the same article, a light grade of paraffin. Benzene (= benzo<sup>le</sup>), on the other hand, is a coal-tar product, and is known in scientific books as "benzene," but more popularly as "benzole." As pointed out by the correspondent of our contemporary, petroleum spirit answers well for cleaning purposes, whereas benzole is necessary as a solvent of rubber.

## New Materials, &c.

"Deleto," tinting medium for negatives. Made by The Aerograph Co., Ltd., 43, Holborn Viaduct, London, E.C.

This new preparation is brought out by The Aerograph Co. specially for aerograph work, where it is required to lay graduated tints on negatives or form vignettes. It may be used for lightening masses of shadow in which use can be made of a mask or stencil cut from a print from the negative, and used as a shield to confine the action of the medium. The employment of a mask is a very common practice in aerograph work on a large scale, and the firm's suggestion of its application in such work as the above will no doubt be found of considerable service. An advantage of the preparation is that it takes to the glass as well as to the film side of the negative. After some considerable use of Deleto, we have no hesitation in saying that those using an aerograph will find it a most useful preparation for working on a negative. We find that it adheres well to the glass side of the negative, making it quite easy to soften masses of shadow without the suggestion of an outline. Its facility of application to both sides of the negative enabled us to produce very pleasing effects. For artistic vignetting, especially in the case of heads, it should certainly be an invaluable material. "Deleto," it should be added, does not mix with water, and the aerograph should therefore be given a wash-out with spirit before using it. For the same reason it is best not to allow the medium to dry into the air-brush, but if this takes place, a little benzole will speedily remove it. The material is put up in bottles at 1s. 3d. and 2s. each.

Tabloid Sepia Toner (Improved formula). Made by Burroughs, Wellcome and Co., Snow Hill Buildings, London, E.C.

Since we reviewed the "tabloid" set of ferricyanide-bromide and sodium sulphide, the latter compound has been replaced by a thio-stannate, in accordance with Messrs. Burroughs Wellcome's recent patent. In fact, we are informed that for some time past, the sulphiding compound on the market has been thiostannate, a fact referred to by Mr. Welborne Piper in his articles of a couple of weeks ago. In several respects the change is for the better. The "toning" solution is much less odorous, though it is not—and Messrs. Burroughs Wellcome do not claim that it is—completely without odour. It is more stable and it is less liable to decomposition than is sodium sulphide. The makers have found that the occurrence of yellow-brown colour is due to the formation of traces of hypo in the sulphide, a tendency which the thiostannate does not exhibit. The constituents for both baths are put up in the convenient "tabloid" form, and the set, like all other chemicals of Messrs. Burroughs Wellcome, is issued with full directions for use.

ANTIQUE SELTONA.—A new variety of Seltona, the well-known self-toning paper of the Leto Photo-Materials Co., Ltd., has been issued under the name of "Antique." "Antique Seltona" proves in our hands to possess a most pleasing surface, a very fine semi-matte, and to tone with the ease which we have learnt to expect in the glossy, matt, and other varieties of the papers. The makers, we may add, have just issued a booklet of instruction in appreciation of Seltona papers. A supply of this publication, which is essentially for distribution by dealers, is obtainable on application to 3, Rangoon Street, London, E.C.

CARBGRAPH ENLARGEMENTS.—The Rotary Co. has issued a circular of prices at which they are prepared to undertake "Carbograph" enlargements by their new process of that title. There being no enlarged negative required, the prices are fixed on a moderate scale for such work—4s. for a 12 x 10 enlargement. Working-up and finishing in monochrome and colours can be done at the usual prices already in force with the Rotary Co. A carbograph enlargement, whether of pure pigment image, or backed with that of the "bromide" image, may be considered fully as permanent as a print done of carbon tissue in the ordinary way.

SPRING PRINTING.—In the spring the photographer's fancy lightly turns to thoughts of—drawing sitters into his studio! Tennyson up-to-date! It is doubtful whether the tractive force is always employed in the best way, and therefore we are glad to draw attention to a new leaflet issued by Messrs. Walter Pearce and Co.,



entford, under the title, "Portraits, Enlargements, and Miniatures the Spring-time." Messrs. Pearce have a way with them as pters, and the little special circular, only 6in. x 3in., done in en and white, is daintily inspiring, with never a suggestion ut it that its real object is to draw customers to the photo- upers. The brief letter-press is in accord with the get-up, and y two combined make it a most recommendable piece of stationery a kind which a photographer could not possibly obtain from his al printer. Choice paper, decorative type, and perfect inking rarely found except in the productions of specialising firms such Messrs. Pearce, who, of course, limit the issue of the folder one photographer in a town and offer to insert the special par- tials as regards prices—all at most moderate charges. Those who sho to make effective use of postal advices to their customers not conceivably do so in better shape than by means of the new der.

**'CARFOLIO' FOLDER PORTRAITS.**—The ability to show his public distinctive style of portrait being a photographer's most valuable upon, it is to the credit of Messrs. Raines and Co. (of the Raines) Service no less than of Ealing, Middlesex) to have pre- pared a form of portrait print which can be shown by a photo- grapher and is pretty certain of attracting notice and receiving proba- tion. The "Carfolio," as it is termed, is a folder portrait, rich has outstanding merits in the way of attractive appearance d cannot possibly be charged with looking cheap. The paper of a folder itself, the colour and texture of the print, the filigrane vering tissue—all, down to the mauve ribbon, are true to the neral scheme, and, placed in a photographer's window or show- se, are bound to impress customers as being something in the ture of a "creation," and therefore deserving of the enhanced price ich, for example, the *dernier cri* in Paris hats secures in com- ison with feminine decoration of humbler origin. In short, ssrs. Raines have a good special line in the "Carfolio," sell it a moderate price, and use their discretion in its dissemination.

## CATALOGUES AND TRADE NOTICES.

**HOUGHTONS' 1908 CAMERAS.**—The new large list just issued by ough- tons Limited measures 11in. by 8½in., and permits of the prop- riate display of the many types of cameras actually manu- tured by the Holborn firm. These include box cameras of all tterns and prices, reflex and folding cameras, the minute (to be operly accented) "Ticka," film cameras, box and folding, noramic cameras, tourist cameras of all degrees, and, lastly, the significant "Sanderson" in its various forms. Messrs. Houghtons n justly say that this list (which is sent free) gives the intending rchaser an excellent idea of how to lay out his money to the best vantage.

**W. WATSON AND SONS** have just issued a list of second-hand meras and lenses, all of which they guarantee to be in good ndition. The makers' names attached to the apparatus are suffi- ent guarantee as to the quality of the original workmanship, and om the low prices at which many of the articles are listed it is ry evident that Messrs. Watson are offering some genuine bar- ins. A copy of the list will be sent free on application to the ove firm at 313, High Holborn, London, W.C.

**THE TELLER CAMERA COMPANY**, of 68, High Holborn, London, W.C., nd us a copy of their spring clearance list of second-hand and op-soiled apparatus, etc. The list includes a large selection of nd, stand, and field cameras and lenses by most of the well- own makers, which are offered at prices much below the original st. Tripods, shutters, changing-boxes, roll-holders, and many ccessories too numerous to mention are also included in the list, hich we think will repay a careful study by those about to make ditions to their photographic outfit, or to purchase one for the st time.

**AN EXHIBITION** of the work of Baron de Meyer, and of Mr. A. L. urn, will be opened in the Goupil Gallery, 5, Regent Street Waterloo Place), on Monday next, and will remain open daily from to 6, for about a month.

# Meetings of Societies.

## MEETINGS OF SOCIETIES FOR NEXT WEEK.

FRIDAY, MARCH 13.

Cardiff Photographic Society: "Round Towers and High Crosses of Ireland." F. Murphy.  
Bristol and West of England Photographic Society. Rotary Carbohydrate Paper.

MONDAY, MARCH 16.

Caiford and Forest Hill Photographic Society. Lantern Slide Competition Criticism. M. Arbuthnot.  
Scarborough and District Photographic Society. "The Point of View." Dr. J. Harvey.  
Bowes Park and District Photographic Society. "Marine Photography." F. J. Mortimer, F.R.P.S.  
Kidderminster and District Photographic Society. "Bromide Paper Toning." H. W. West.  
Stafford Photographic Society. "Reduction and Intensification of Negatives." Herbert A. E. Hey.  
Southampton Camera Club. The Affiliation Societies' Prize Slides.  
Bradford Photographic Society. "In Search of the Picturesque." W. H. Houghton.  
Cleveland Camera Club. Y.P.U. Slides.  
Walsall Photographic Society. Rotary Carbohydrate Paper.  
Photographic Survey and Record of Surrey. "Survey Work from the Geological and Scientific Standpoint." W. Whitaker, B.A., F.R.S., F.G.S.

TUESDAY, MARCH 17.

Royal Photographic Society. "Architecture in New Guinea." A. H. Dunning.  
Kebley and District Photographic Association. "St. Albans and Lichfield." Godfrey Bingley.  
Epsom and District Literary and Scientific Society. "Lantern Slides." B. J. Edwards & Co.  
Sheffield Photographic Society. "The Land of Carillons, Canals and Coifs." Charles B. Howdill, A.R.I.B.A.  
Wimbledon and District Camera Club. Exhibition of Members' Prints.  
Hackney Photographic Society. R.P.S. Affiliation Prints, 1906.  
Redhill and District Camera Club. "Autochrome Colour Plates." A. Dukinfield Jones.  
Erdington Photographic Society. "Enlarged Negative Making, &c."  
Photographic Survey and Record of Surrey. "Notes on the Folk Lore and Primitive Appliances of Surrey (Superstitions, Obsolete Appliances, House- hold Apparatus, and Children's Games)." Edward Lovett, F.R.H.S.

WEDNESDAY, MARCH 18.

Tunbridge Wells Amateur Photographic Association. "Glimpses of Jamaica." A. Mackie.  
Bristol Photographic Club. "Early Steps in Gum." E. Beaven.  
Woodford Photographic Society. "Autochrome." R. Child Bayley.  
Leeds Camera Club. "My Wanderings with a Hand Camera." A. Nicholson.  
Central Technical College Photographic Society. "The Theory of Time Develop- ment." W. F. Slater, F.R.P.S.  
Croydon Camera Club. "Enlarging and Reducing with Home-made Apparatus." J. M. Sellers.  
South Suburban Photographic Society. "Gun Bichromate." J. C. S. Mummery.  
Borough Polytechnic Photographic Society. Lantern Slide Competition.  
North Middlesex Photographic Society. "Ozobrome." S. C. Puddy.  
Bournville Camera Club. "Enlarged Negative Making, &c."  
Photographic Survey and Record of Surrey. "Ancient Architecture, Ecclesiastical and Domestic, in Surrey." F. M. Johnston, F.R.I.B.A.

THURSDAY, MARCH 19.

South Manchester Photographic Society. "Carbon Printing." H. Holt.  
Optical Society. Presidential Address.  
Rugby Photographic Society. "The Right Way in Photography." Demonstrated with "Tabloid" Photographic Chemicals. R. H. Myers.  
Southend-on-Sea Photographic Society. "The Application of Colour Photography to Book Illustration." H. O. Klein.  
Chelsea and District Photographic Society. Members' Evening.  
Queen's Park Amateur Photographic Association. Annual Business Meeting.  
London and Provincial Photographic Association. "In Search of the Sun." C. P. Butler.  
Blenheim Club. "A Tour in Spain." E. A. T. Wigram.  
Richmond Camera Club. "Time Development." W. F. Slater.  
Hull Photographic Society. "What Can be Done with a Hand Camera." C. P. Goetz.  
Bath Photographic Society. Exposed Plate and Lantern Slide Competition.  
Handsworth Photographic Society. "Handsworth and its Famous Men." E. J. Timing.  
Liverpool Amateur Photographic Association. "The Latest in Ozobrome." Rev. Harry W. Dick.  
Sheffield Friends' Photographic Society. "Enlarged Negative Making, &c."  
Photographic Survey and Record of Surrey. "An Archaeological View of Survey Work." G. C. Druce.

## ROYAL PHOTOGRAPHIC SOCIETY.

MEETING held March 10, the President, Mr. J. C. S. Mummery, in the chair. The Chairman announced the death of Mr. J. Hort Player, an old member of the Society, and inventor of the Player- type process. A gift of books from Mr. G. E. Brown, and one of a new type of selective shutter from Messrs. Dallmeyer, was also announced, and votes of thanks were passed to the donors. Mr. T. Thorne Baker then read a paper on "Phototelegraphy," or the transmission of photographs by wire. After a brief reference to the work of Amstutz, he described in detail the apparatus used by Pro- fessor Korn, illustrating with lantern slides the transmitting, receiv- ing, and compensating apparatus. This was followed by a descrip-

tion similarly illustrated of the transmitter and receiver used by Dr. Belin, and examples of both methods were then shown upon the screen, which examples somewhat surprised the audience, who evidently had not expected to see anything quite so perfect as some of the Belin specimens shown. The slides were supplemented by a bromide print transmitted from Paris just before the commencement of the lecture. An interesting set of slides illustrated the troubles caused by inattentive telephone ladies at the exchanges, who sometimes failed to keep the line isolated, and also defects due to induction. The lecturer, however, took an opportunity of expressing his thanks to the Post Office authorities, who, since the necessity for complete isolation of the line has been recognised, have assisted the experimenters in very possible way. The audience evidently did not feel competent to discuss the matter of phototelegraphy, but in answer to questions by Messrs. McLean, Butler, Dawson, and others, the lecturer explained that while a few prints have been used for newspaper illustration, the generality of the results have not been good enough to permit the process being applied to any particular commercial uses. It had been tried for the purpose of producing a block direct, instead of a simple print, but so far it appeared that the best results were obtained by working from prints. At present a closed circuit was necessary, therefore the telephone wires had alone been used, but probably before long it would be possible to utilise the telegraph cables. The meeting closed with a unanimous vote of thanks to the lecturer.

**EDINBURGH PHOTOGRAPHIC SOCIETY.**—At a meeting of the Edinburgh Photographic Society, on March 4, a lecture on "Recent Developments in Colour Photography" was delivered by Mr. Tudor Cundall, B.Sc., F.I.C., F.C.S. The lecturer reviewed the advances that had taken place in the theory and practice of colour photography since 1900. The processes considered included the Lippman direct method, the Warner-Powrie, and other *additive* three-colour processes, and the Sanger-Shepherd, Pinatype, and other *subtractive* three-colour processes. In criticising the new Lumière Autochrome process, Mr. Cundall said that while he thought it marked a great advance in some ways, it had certain theoretical deficiencies, and that further progress would probably not be along that line. On the whole, he came to the conclusion that, though considerable progress had been made, the three-colour theory needed revision, and that both as regards the making of transparencies, and particularly paper prints, the methods were still lacking in simplicity, rapidity, and exactness.

**SOUTHAMPTON CAMERA CLUB.**—Mr. C. B. Howdill, of Leeds, gave an interesting lecture on Monday last, entitled "Servia and Its People." Mr. Howdill recently made a tour in Servia, and in the form of an illustrated lecture he related some amusing and exciting incidents he experienced. His attentions had been chiefly confined to the study of the manners and customs of the peasantry, and he described several entertaining episodes which occurred in securing his desired photographic records. He explained that the chief occupation of the peasantry was agriculture, which doubtless was the result of free grants of land allotted to them. The average farm dwellings were somewhat primitive in construction, but the Servian possessed surprising ingenuity in accomplishing his employment. The lecture was profusely illustrated with lantern-slides, which portrayed many types of the inhabitants, and also the mountainous and densely wooded nature of the country. Mr. Howdill is to be congratulated on his successful photographic survey he has made of this disturbed and unsettled country, which was not accomplished without some personal risk. A hearty vote of thanks at the close terminated an interesting and enjoyable lecture.

**MR. SPEAIGHT AND THE P.P.A.**—The Professional Photographers' Association has caused the following communication to be sent to Mr. F. W. Speaight, the Senior Managing Director of Speaight, Ltd., the child photographers:—"Dear Sir,—At the last meeting of the committee of this Association, the following resolution was proposed and unanimously carried: 'That the congratulations of the Committee of the Professional Photographers' Association be expressed to Mr. F. W. Speaight upon the successful accomplishment of his Scheme of Improvement at the Marble Arch, now being carried out by the L.C.C.'—Faithfully yours, (Signed) A. MACKIE, Hon. Secretary."

## Commercial & Legal Intelligence

**SOUTHPORT BANKRUPTCY.**—A dividend is to be paid at the Official Receiver's office, Liverpool, on March 18, in the bankrupt estate of James Shaw, photographer, residing and carrying on business at 4, Bridge Street, Southport, Lancs.

**A PICTURE POSTCARD DISPUTE.**—At the Shoreditch County Court on Friday, before Judge Bray, Alfred Henry Cooper, trading as the Photophone Company, at 19, Coleman Street, E.C., sued Sheppard and Company, of 136, Old Street, Shoreditch, claiming £23 6s., the price of goods supplied. Mr. Alexander Neilson, instructed by Messrs. Ward, Berks, and Mackey) represented the plaintiffs. The defendant company's case was conducted by the principal, Mr. Rudolf Shaefer, who made several counter-claims, holding, according to these, that there would be a large balance due to the defendants from the plaintiffs over and above the amount claimed by the Photophone Company, which was in respect of cards printed by the latter for the defendants. It was stated by Mr. Shaefer that the plaintiffs agreed to print for Sheppard and Company 100,000 cards from 100 plates, which the defendants agreed to procure. Part of the cards were to be delivered before Easter, 1907, and the remainder before Whitsuntide. The defendants procured the 100 plates, as they had undertaken to do, but the Photophone Company, in breach of the contract, did not supply any cards whatever before Easter, whereby one of the most important seasons of the year for the wholesale picture postcard trade was lost to the defendants, who, it was alleged, suffered considerable damage as a consequence. The plaintiff company had only printed for the defendants cards from forty of the plates, and had refused to print from the remainder. This refusal had resulted in a loss of a turnover of at least 100,000 cards to the defendants. On these cards the wholesale profit was 15s. per 1,000, and thus, it was contended, the failure to complete the contract had meant a loss to Sheppard and Company of at least £75.

According to the plaintiffs' case an arrangement was entered into with Mr. Shaefer whereby they contracted to commence the execution of the work upon payment of a certain sum to the plaintiffs. Mr. Shaefer, the work being commenced upon the receipt of the required payment. The defendants paid the sum of £21 in question in two instalments of £7 in July, and another payment of £7 in August. The contract was varied, the plaintiffs thereby agreeing to deliver 40,000 cards instead of 100,000. The 40,000 were delivered, and with that, the plaintiffs contended, the matter ended, the first contract being cancelled.

In reply to his Honour, Mr. Shaefer said that he had not written a letter to the plaintiffs complaining that they had not sent the balance of the cards, whereupon Judge Bray pointed out that the inference from that was that there was a new contract, and that the previous contract was cancelled. His Honour held that a new contract was made, the work to be proceeded with as soon as the defendants paid an old outstanding account, which was settled on August 7, and that the contract was, in fact, completed. Counter-claims were also made by the defendants on the grounds that the plaintiffs had wrongfully parted with the possession of certain plates entrusted to them for the printing of picture postcards, and still retained the plates taken from the negatives, which were the property of the defendants, that the plaintiffs had also retained the other plates, called "The Ghosts of Hampton Court," and by doing so had caused the defendants a loss of £37 10s. at least, estimated on a sale of 25,000 of the cards at a profit of £1 10s. per 1,000, and that the plaintiffs had printed for another person cards from plates which were the property of the defendants, in infringement of the defendant company's rights, and in respect of which substantial damages were asked. For the plaintiffs it was denied that there had been wrongful procedure or infringement of the defendant company's exclusive rights. In the result judgment was entered for the plaintiffs on their claim for £23 6s., with costs. The defendants did not succeed in any of their counter-claims. His Honour non-suited them in regard to the alleged infringement, with leave to apply for a fresh action as to this.



## News and Notes.

THE PORTRAITS by Messrs. Ellis and Walery, in the exhibition of photographs by members of the P.P.A., recently held at the "B.J." offices, have been purchased by the Platinotype Company as specimens of printing on their "Japine" paper.

THE RAJAR CAMERA, offered by Messrs. Rajar, Ltd., for the best print on their P.O.P. received during each month, has been awarded to Mr. J. Maud, of Smiddles Lane, Bradford, whose print was judged to be the best submitted during February. The paper on which the print was made was purchased from Mr. J. Mason, Godwin Street, Bradford.

GEORGE FAULKNER.—In announcing the change of address of this firm of enlargers we wrongly gave the new address as 44, Finchley Road; it should have been 44, Archway Road, Upper Holloway, N.

MR. W. CROOKE AND THE GUM-BICHROMATE PROCESS.—At the annual dinner of the Edinburgh Photographic Society, held on the eve of the annual exhibition, opportunity was taken to entertain the Judges, Mr. J. Craig Annan, Mr. William Crooke, and Mr. Martin Hardie, R.S.A. In replying to the toast of "The Judges," Mr. Crooke, after congratulating the Society on the high standard of its exhibition, said that they had in photography a multiplication of processes. Some of them were purely photographic, others were in a sense mechanical, and others were in a sense artistic. They had the gum-bichromate process, by which a man was assisted to obliterate all the photography possible from his work. (Laughter.) If the minds of those who used it were always properly trained, he had no objection to the work. But he had no sympathy whatever with these gentlemen when artistic errors were made. There was every apology for a man who did a simple, pure, and natural photograph, and, the conditions being against him, who did not get exactly what he would like. That man was trying to do a good thing. The other man was trying to spoil a good thing. He had no sympathy at all with those who used his "bi-gum process" (laughter) and did not know what they were doing. Then in regard to platinotype and other processes, treatment in the negative was a good deal practised. There was nothing to be said against this, provided they knew what they were doing, but it was a dangerous thing to do if this were not so. Those things were all means to an end. They had to remember that grandeur, in the sense of poetical and imaginative creations, was not possible to photography, as, while they could modify the operations of a lens, they could not give it a mind.

AFFILIATION OF PHOTOGRAPHIC SOCIETIES.—The Executive Committee have made arrangements with the Council of the parent society, by which one of their staff, Mr. Philp, has been set aside to devote his time solely to the carrying out of the affiliation work, under the style of Acting Secretary, and under the control of the Executive Committee.

Mr. Philp has been assistant to Mr. McIntosh during the past few years, and is fully acquainted with the details of the affiliation work, and the Executive Committee feel sure the new arrangement will meet with approval amongst the societies.

The affiliated societies' outing has been fixed for Saturday, May 23, to Ayot, near Hatfield. The arrangements are in the hands of Mr. W. Davenport (Bournville Camera Club) and Mr. C. H. Madden (Secretary North London Society), and full details will be sent to secretaries very shortly. It is hoped secretaries will note the date and arrange for their societies to be well represented, so that a successful outing may be assured. Many well-known men in the photographic world are interesting themselves in the gathering, and the occasion will be one photographers should not miss.

"LA REVUE DE PHOTOGRAPHIE," our much admired monthly contemporary, issued by the Photo-Club de Paris, announces that it will appear in future as an annual publication. For the past five years "La Revue" has championed the cause of pictorial photography in a manner which has certainly commended itself to ourselves. It has published choice examples of the best work without comment or sickly appreciation, and for its text has put forward some excellent technical articles. M. Demachy, a moving spirit in the establishment and conduct of the "Revue," wrote us, we recollect, at the outset, somewhat in these words:—"We shall give our readers some sound technical reading, and the pictorial reproductions will be allowed to

speak for themselves." The "Revue" has spared no pains, and, we should guess, no expense in carrying out this policy, and if the experiment has proved too costly, M. Demachy and his conferees may be sure that our regrets are added to their own. In future the "Revue" will be in its annual volume of much the same character as the periodical issue.

## Correspondence.

\* We do not undertake responsibility for the opinions expressed by our correspondents.

\* Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

### PHOTOGRAPHY AT THE DOVER PAGEANT.

To the Editors.

Gentlemen,—Information has reached me that a firm of local photographers has approached many of the London papers, stating that none but Dover photographers will be allowed to take photographs at the Dover Pageant, and asking to be appointed agents for the London Press. This statement is entirely unauthorised and incorrect. My committee would be most happy to grant facilities to representatives of any newspaper desiring to take photographs for reproduction. I should be most happy to give you any information desired.—Yours faithfully,

H. R. GEDDES, Secretary.

Pageant House, 2, Effingham Crescent, Dover,

March 3, 1908.

### DRYING NEGATIVES WITH SPIRIT.

To the Editors.

Gentlemen,—I was interested to learn from the "Journal" of February 28 that the explanation I offered of the milky appearance often produced on gelatine negatives by drying them with the aid of spirit had already been suggested by Dr. Lüppo-Cramer. Had I been aware of this I should, of course, have mentioned it in my original letter, as it is evident that Dr. Lüppo-Cramer is entitled to any credit for prior publication of the explanation of the phenomenon, though the explanation I offered has been known to, and considered probably the true one by me and a few friends for more than a year.—Yours faithfully,

F. F. RENWICK.

Norland House, Avenue Road, Brentwood,

March 4, 1908.

### PROFESSIONAL PORTRAITURE.

To the Editors.

Gentlemen,—I had no idea when I wrote my guileless impressions of your professionals' exhibition that I should be stirring up a nest of hornets, but the flying out of two of the genus in your last issue tells me that I have unwittingly touched them in tender spots. These two gentlemen appear to think that I approached the show with a stick for no other purpose than mischievous assault. It is not so, as any impartial reader may see by the commendatory remarks upon each exhibitor's work. What I said of retouching was quite evidently said of professional portraiture generally, and as a principle. Even Mr. Turner and the Country Pro. themselves do not gainsay me. On the contrary, they admit it; and, admitting it, they excuse themselves on the ground that the principle is a paying one. Did I say it was not? Did I say that they were unwise to make their "thousands"?

Both these gentlemen imply derogatory things of the public taste. Their position is, that the public wants to be flattered with lies, and only an "infinitesimal minority" "know or care anything about art." Yet Mr. Turner shows pride in the fact that "millions" frequent the studios and accept work from them with pleasure. But if these millions care nothing for art what is it that they "frequent" the studios for? The answer is, for professional photography. Let them, I say. I should like to see every Pro. in country and London making his "thousands a year," but it would not make me believe that the retouching of their portraits into the monotonous stipple texture of old time methods is admirable, nor that tinkering with the facial lineaments is commendable portraiture. I beg to be allowed to uphold these convictions in the face of all this rapid fortune-making.

I never yet met a person of any intelligence who really *liked* the porcelain texture. I have met many who have grumbled at their photographs. One reason of the gigantic fortunes of photographers may be that the public, long suffering and sanguine, don't at first succeed; but try, try, try again. And when they are pleased it is not because they look like porcelain dolls, but because, as Mr. Turner himself explains, clever lighting has made the sitter look his best, and clever posing has made "even the slipshod, slovenly youth look, for a few moments, a man." Therein lies the secret of the whole matter, and professional, amateur, or poor vilified critic, too, might join hands upon it. The critic, however, finds a fist on every occasion. With marked disingenuousness, Mr. Turner culls a collection of phrases from my article, and, callous as to their meaning in their proper context and their meaning out of it, concocts a sounding sentence with them which he presents as my "scathing indictment." As a *journalist* he would have been a Cressus!

He would like to know whether I am fitted by professional experience to be a judge. But is it professional experience that best fits one to judge? Is not the outside view of better value? I may tell him that I have painted a good many portraits, and eke photographed some; but I don't know whether Mr. Turner will consider such experience professional. At any rate, it is more than a "pose in print."

What pains me is Mr. Turner's cruel construction of my remarks, which were framed to foster the best parts of his profession and to raise admonitions for the worst. He calls it "unsympathetic criticism," "ungracious criticism," and "unfriendly nonsense." All these unkindest cuts are so much in the reverse vein of my article that I feel very hurt. From one whose initials, too, are so like my own it cuts to the quick! My only solace is in Mr. Turner's closing remarks, where he, in a sweetly tolerant spirit, says: "No doubt there is a lot to be said for unretouched work, and our critic (no longer unfriendly, mark you) has omitted to recognise the fact that now many hundreds of professional photographers are working on these *happy* and *economical* lines." With you I italicise these last two adjectives. It is all I want, and all I asked for. Mr. Turner himself pours balm into the wounds he has made. I am resigned to the fate that I shall "have been long forgotten" when "scores of British photographers" "will probably be remembered."

When these happy and economical lines are more generally adopted we may hear less of the sorrows and hardships of those poor pro's who find it hard to make a decent living, charm they never so wisely the vain public who like to be made pretty. There may then even be an end of photographers' associations, framed to be "commercially advantageous." For such associations and the efforts of the profession in other ways to wake up trade, as evidenced by the letters and articles in this and other journals, do not entirely bear out Mr. Turner's assurance that the old lines are "quite safe to follow if success in business is the aim in view." F. C. TILNEY.

March 9, 1908.

#### SULPHIDE TONING OF BROMIDE PRINTS.

To the Editors.

Gentlemen,—In spite of the large amount of work that has been done by careful experimentalists on the toning of bromide prints by sulphuretting the black image, the last word on the subject has apparently not yet been said. Generally speaking, the process may be considered to have reached a point of reliability and sureness of result that brings it into line with the ordinary operations of photography, but occasionally it develops surprises that "give us pause," and make papers like those of Mr. Munkman and Mr. Blake Smith apropos and interesting. One of these "surprises" occurred in my own work some months ago, and as it was the cause of considerable experimental work in the same direction as that of Mr. Munkman I was naturally much interested in his paper.

For quite a time I had been using a certain make of bromide paper which had given me general satisfaction, though I had realised that in toning the colour was capricious, notwithstanding the care taken to maintain constant conditions. The "surprises" came when a large batch of prints, from a fresh delivery of paper, after bleaching in an apparently satisfactory manner refused to tone in the sulphuretting bath. The image returned to its former vigour, certainly, but the colour was for all practical purposes still a black. I naturally imagined that some irregularity had occurred

in the working, so fresh solutions of bleaching and sulphuretting agents were prepared, but with the same result, the image always sulphuretting too near the original black. Half-a-dozen different developers were tried, and the black image bleached with most of the well-known bleachers, but in the end the black image returned unruffled. At length I decided upon trying another make of paper, and accordingly got some of a well-known make. This gave prints of perfect quality, and I bleached a small batch in the ferricyanide-bromide formula that had always given me satisfactory results. As I had procured a fresh supply of pure sodium sulphide I had no anticipation of procuring other than very good sepia colour, so when these too sulphuretting back to almost the original black I realised that there was more in sulphide toning than was "dreamt of in my philosophy." I accordingly commenced experiments to find out, if possible, the reason of my failure, confining myself for the purpose to this one brand of paper. I spent the greater portion of two days in trials with every developer and bleacher I could get, and the end was that the paper would not tone at all with amidol and one or two other developers, with metol-hydroquinone I could get a very dark brown, with iron-oxalate they gave a very good sepia. Although the precise bleacher used made no difference to the result in cases where the image returned nearly to the original black, yet in iron-developed prints the colour was more satisfactory when bleached in the iodine bath as formulated by Mr. Blake Smith. The bichromate-sulphuric bath gave quite an unpleasant shade of yellow-brown. After carefully trying this make of paper I was obliged to decide that, although it was excellent for black prints, as it would only tone satisfactorily when developed with iron-oxalate (which I was desirous of avoiding) I could not contemplate using it. Yet another make of paper was procured, which, from the first, yielded eminently satisfactory colours with any developer and with any bleacher.

Here, then, is my experience, and I think it points conclusively to the fact that the nature of the emulsion has considerable influence on the toning capabilities of the print. It was my intention to make experimental batches of emulsion, containing varying proportions of the halides, to get some idea whether this influenced the finished result, but unfortunately, so far, I have not been able to spare the time requisite. As we are ignorant of the makers' formulae of the various papers, we are working without an important factor in the elucidation of these vagaries. It would seem that as the black image is converted into one or other of the halides it is a matter of small importance whether the original emulsion was a pure bromide emulsion or a compound of several halogens, but this, I think, has to be proved.

My experiments were, as I have said, on lines identical with those of Mr. Munkman, and my results corroborate his in most instances. I am of the opinion, however, that the quality of the negative has considerable influence on the finished result. It was a well-known fact when albumen printing was in vogue that the finest colours demanded for their production a negative of good gradation and opacity, and this I believe to be the case with sulphide toning. I have never been able to get such satisfactory colours with prints from over-exposed "flat" negatives, however they were developed and toned, as with those from negatives of perfect gradation and full opacity. When any bromide paper tones readily with the sulphide toning bath, it does seem, as Mr. Munkman states, that the precise developers used have little to do with the result, but my observations go to show that with a given paper some one developer may give richer sepia tones than any other. Iron oxalate in my hands gives exceedingly fine results, and with some papers I have got with edinol superb results, such as none of the other developers would give. Mr. Blake Smith has well pointed out ("B.J.," February 28, 1908) how dependent the tone is upon the quality of the original image, and this should be borne in mind by those who expect to get good rich colours from any kind of black image.

With regard to the character of the sulphide used, I am quite in accord with your own remarks in your issue of March 6. I have used several samples of sodium sulphide, but am unable to detect any influence on the colour of the finished print, though the appearance of the sulphide would lead one to suppose that the legend implying purity, inscribed on the label, was a literary embellishment rather than an actual statement.—I am, Gentlemen, yours faithfully,

G. T. HARRIS.

Sidmouth, South Devon.



## Answers to Correspondents.

- All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.**
- Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.**
- Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., 24, Wellington Street, Strand, London, W.C.**
- For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.**

### PHOTOGRAPHS REGISTERED:—

**E. Vize**, South Main Street, Wexford, Ireland. *Photograph of James Roche, Champion Boxer.* *Photograph of James Roche with his Two Trainers, Robert Browns and Daniel Kelly.*

**ARIOUS QUERIES.**—(1) Will you kindly suggest some remedy for the separation of gelatine film from its celluloid support in roll films after exposure, and instructions for developing the same? (2) Also some remedy for cracks in collodio chloride self-toning papers? (3) Can you tell me how the tiny microscopic photos usually seen in handles of umbrellas and walking sticks and the like are made, and where the necessary materials therefor can be had? These are small positives on a glass support, about 1.12in. in diameter, with a tiny glass lens mounted thereon to magnify the picture, which attains the size of a C.D.V. when looked through it.—**B. O. J.** (Kathiawar, India).

(1) The cause of the trouble is that in the hot and dry air of India the gelatine has become abnormally dry, and contracted to such an extent that it has separated from the celluloid. The best way we can suggest, if the gelatine film is intact, is to coat the back of it with a thin solution of indiarubber, also a glass plate with the same preparation. When the solvents have evaporated press the two rubbered surfaces in contact, when they will adhere. When the films have been developed, fixed, washed, and dried they can be stripped off the plate and the rubber removed. (2) You do not say whether the cracks (which are evidently due to the Indian climate) occur before or after printing. If the latter, the trouble may probably be got over by adding a small proportion of glycerine to the final washing water. (3) These little pictures are produced by the wet collodion process from ordinary negatives, several very small lenses being used for the purpose. The film is then stripped off the glass, cut up, and mounted on the surface of a small Stanhope lens. These little pictures are mostly produced in Paris, and the apparatus for them is made there. It is probable that Messrs. Marion and Co. will procure all the necessities for the pictures to your order.

**E. BLACKBURN.**—We are quite unable to answer your queries. We are not in the secrets of the two firms named, so cannot tell you the names of the colours they employ. Probably, however, they are mixtures of two, or more, to obtain the tints required. However, they sell the materials ready for use, and we should imagine that it would answer your purpose better to purchase them than attempt to make them for yourself.

**INK DRAWINGS FROM PHOTOGRAPHS.**—I am told that photographs can be traced over with ink and then the photographic bases removed with chemicals, so that the picture looks like a pen and ink sketch, and can be copied and used in printing as such. Can this be done? If so, how?—**SKETCH.**

Yes, the drawing is done in waterproof ink, as supplied by Higgins, or obtainable at artists' depots. The print is then bleached away by solution of mercuric chloride or a mixture of potassium cyanide and iodine, as used for reducing prints.

**ENLARGING.**—Under what conditions is it possible to enlarge by oil lamp or incandescent gas (without a condenser) by the aid of  $\frac{1}{2}$ -plate double extension camera, R.R. lens?—**AMATEUR.**

You must work by reflected light—i.e., illuminate a white surface and reflect the light falling on the latter through the negative. Oil lamps are not powerful enough for this purpose.

The best advice we can give you is to use one or other of the illuminating chambers, made on the above system by Lancaster's, of Birmingham. They can be used with your camera.

**ENLARGEMENTS.**—I have been requested by a firm to do several enlargements for show in their shop windows, to advertise the fact that they do enlargements. (The firm are chemists.) Not having any negatives by me, should I be doing wrong if I copied some picture postcards I have of actresses and made sample enlargements from same?—**IN DOUBT.**

Of course you will. You have no right to copy the cards, whether French or English, as there is certain to be copyright in them.

**AUTOCHROMES.**—Could you kindly inform me (1) is it absolutely necessary to fix an Autochrome after intensification? Will it fade if not fixed? (2) Is there any shutter on the market which is suitable for Autochrome exposures—e.g.,  $\frac{1}{8}$ ,  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1, 1½, 2, etc.? I know Thornton-Pickard, Unicum, and many others, but you cannot get intermediate exposures like 1½, 2½, 3, etc., with them. I work stereoscopic pictures.—**E. Y. E. N.**

(1) It is best to fix after using the acid-silver intensifier. Ordinary lantern slides treated with this intensifier will stain after a time unless fixed. The function of hypo is to remove traces of silver compounds from the film. We consider it quite essential. (2) We do not think you will find a shutter giving exposures with such small differences, and giving them accurately. You might try Newman and Guardia, perhaps they or other makers of focal-plane shutters could make a shutter of this kind with very wide slit and low tension, but it would have to be of quite special construction.

**J. J. S.**—Of course not. As you were paid for taking the photograph you have no copyright in it.

**H. A. L. N.**—"The Cinematograph." By Cecil M. Hepworth, 1s. (Hazell, Watson, and Viney).

**ARCHER CLARKE.**—The Vellum bromide paper is made by the Leto Company, 3, Rangoon Street, E., and was noticed in our issue of January 24, p. 72.

**METAL PLATE.**—We know no firm doing this work regularly. If you apply to any plate and paper maker you might get a quotation for such emulsion-coated plates.

**GLASS NEGATIVES FROM FILMS.**—Kindly advise how film negatives could be glued or stuck to a glass plate, so as to practically make a glass negative of it. I coated the glass and the film with a gelatine solution, but on drying the film came off.—**A. K.** (Zürich).

If you use the formula for film negatives on page 808 of the "Almanac" the stripped film should be soft enough to adhere to the glass plate. If it does not, flow the glass over with a very thin solution of gum, as directed under "Stripping Glass Negatives," also on p. 808.

**M. E. L. F., Abo.**—Stretchers from Griffith's Steam Works, Eyre Street Hill, Clerkenwell, London, E.C. For cardboards, try Berry and Roberts, St. Bride Street, E.C.

**FIXING PRINTS.**—I should be very grateful if you could give me a practical dark-room test for complete hypo fixation of P.O.P. and bromide papers.—**Q. S.**

We cannot give you any test for fixation. The only practical method is to fix for a time that you know to be sufficient. To ensure perfect fixation it is a good plan to use two hypo baths.

**ENLARGING.**—For making enlarged negatives (x two diameters) from P.O.P. or other smooth surface photos, of which I have no longer the original negatives, will you kindly inform me which of the following two methods will produce the sharpest and best enlargements? (a) To directly make enlarged negatives; or (b) to copy same size and then enlarge negatives. Also, I would feel greatly obliged if you will inform me what is the best type of lens obtainable for copying work (mainly monochrome), varying in sizes from  $3\frac{1}{4} \times 4\frac{1}{4}$  to  $10 \times 8$ ? Also most suitable focus and aperture. I have a  $10 \times 8$  camera, with extension 21 inches, and am getting a Lancaster copying attachment, as shown on page 425 of the "B.J." Almanac.—**J. H. I.**

The first method would be likely to give the sharpest results, seeing that it involves only one operation, but much depends on the lens. As to lens, there are many designed specially for

copying purposes, and you had better consult the advertisements in the "Almanac." We should advise as good an anastigmat as you can afford and the greatest focal length that will suit your apparatus. Aperture is only of importance so far as it affects exposure.

F. H. W.—We refer to the matter again in "Ex Cathedra."

INTERESTED.—There can be no other explanation than that the plate is put in with the glass side to the lens. In that event, a fortunate accident has evidently preserved the sharpness of the faces.

C. H.—We should suspect the mounts as a probable cause, that is, if you adhere to the directions for gold-platinum toning. We advise you to test the mounts as follows:—Lay a piece of paraffin paper or thin celluloid over half the mount, and on this again a silver print (finished but unmounted). Back up with a piece of pure filter paper and several thicknesses of moistened blotting paper, put the whole in a printing frame between glasses (to keep in moisture), and place in a warm place for two or three weeks. If the half of the print in contact with the mount deteriorates before the other the mount may be suspected as defective.

ENLARGING.—1. I wish to know of a satisfactory intense form of illuminant for an enlarging lantern so that small enlargements (say 4 in. x 5 in.) may be printed from  $3\frac{1}{2}$  x  $4\frac{1}{2}$  and smaller negatives on a rapid brand of gaslight (not bromide) paper, and giving only a few seconds' exposure. The Nernst lamp seems disqualified, because in the "B.J." of March 23, page 238, you say the filaments without a diffusing screen show on the paper, and in some past issue I believe I have noticed something to the effect that the carbon points of an arc lamp also show. I have heard of photographers who have and have not had this trouble, and conclude it must be in the type of lamp. If this conclusion is right I would be glad to be advised of a firm where a suitable arc lamp may be purchased, one of the automatic type, which, once a clear disc of light is obtained, no further attention is required. 2. In making small enlargements from a negative which is slightly lacking in contrast, where is the proper place for a yellow screen—between light and condensers, condensers and negative, negative and lens, or lens and easel—to obtain a more brilliant print; and where can the proper article be obtained? 3. Should a negative be placed as close as possible to the condensers, or is there some certain distance for best results? 4. Can you refer me to a popular written article or discussion on how to construct a mechanical device for an enlarging lantern to adjust the lens and easel automatically as the scale of the picture on the easel is altered? 5. Is there on the photographic market a heating device which will keep the developing dish which rests on it at one uniform temperature, and if so, who supplies them?—STUART WATKINS.

1. We cannot trace your reference during the past year or two. A Nernst is an excellent lamp for enlarging purposes, being both powerful and constant, although with it, as with every other lamp, some adjustment is necessary when altering the scale of the enlargement, but not otherwise. Enclosed arc lamps are also very suitable, and are used as largely as any other type of lamp by professional enlargers in this country. You should get prices of the "Westminster" and Jandus lamps and of the Nernst high-power projector lamp, particulars of which have been given in our text and advertisement pages. 2. The usual and most convenient place is on the lens hood. So far as we know, a yellow filter for this purpose is not sold. The more usual plan among enlargers is to use an old lamp for such weak negatives. 3. If placed at a distance in front of the condenser the illumination is stronger, because the area allowed is smaller; but usually the negative has to be placed quite close to the condenser, otherwise the corners are left unilluminated. 4. We cannot give any reference to such an article, but, of course, apparatus constructed on these principles is on the market. If you want really critical focus, we should advise you to rely on ordinary methods of adjustment rather than on mechanical devices, which are excellent in theory, but apt to be unreliable in practice. With practice the trouble of adjustment by hand becomes very slight. The only literature we can refer you to is Cook's patent specification in our issue of May 12, 1905, but you must judge as to the fitness of using the facts in it. 5. We know of none sold for photographic purposes. If you apply to a firm which fits out chemical laboratories you can get a tank provided with a thermostat by which the temperature can be kept constant.

E. EIRNES.—Photo-Revue, 112, Rue d'Assas, Paris.

E. WARR and others.—In our next.

E. B.—The eliminator you name is the best of all in our experience. It might cool the tone of a warm-toned silver print very slightly, but on others, and in the case of bromides, etc., it has no visible effect on the tone.

CONFIDENCE.—As you say, the method has been published, and professional photographers, more frequently some years ago, have introduced the novelty into their business. We suggested a trade mark or trade name for this reason:—You, by pushing the novelty under this trade name, establish a connection with it, so that if any of your competitors take up the idea you can point to your origination of the, say, "Duplex" photographs, and so impress the public that, in this particular instance, you were the pioneer. Your competitor could still take and sell such photographs, but he could not use your fancy name.

A. MARSHALL.—We should expect exposures to be unduly prolonged, and the result inferior to either daylight or a strong artificial light and a condenser. This in the case of a 20 x 16. For 15 x 12 the arrangement would, no doubt, suffice, unless your negatives are unusually strong. In any case, negatives which are right for carbon are bad for bromide enlarging.

W. S.—For a proper rendering of the inlaid work an orthochromatic plate and a fairly deep light-filter are almost necessary. It is advisable to make the exposures out of doors, otherwise the time for each is inconveniently long. Some workers get good results with an unscreened plate, but the most general practice of experts in this work is to use a screen and filter. Practically any maker of ortho plates can supply you with a filter, or advise you as to the best.

PAPER FOR ADHESIVE TISSUE.—Being anxious to purchase on a fairly large scale the thin paper for making adhesive shellac tissue, should be glad of your information as to most suitable material.—J. L.

We are not aware what paper is used by tissue-makers. We suggest your stating your requirements to a maker of raw papers such as O. Rosenstiel, 2, Gresham Buildings, Basinghall Street, E.C., or to J. Spicer and Sons, New Bridge Street, E.C.

THE PHOTO-SECESSION.—An exhibition of drawings, by Miss Pamela Colman Smith, of New York and London; etchings and book-plates by Herr Willi Geiger, of Munich; and etchings by Mr. D. S. McLaughlan, of Boston and Paris, was held at the Little Galleries of the Photo-Seceession, New York, from February 21 to March 11. This exhibition will be followed by examples of the work, in colour and monochrome, of Mr. Eduard J. Steichen, which will be on view from April 1 to 20.

THE LATE A. HORSLEY HINTON.—The "Amateur Photographer," with its current issue (March 10) presents a portrait of the late Mr. Horsley Hinton, by Mr. Fredk. H. Evans, which is justly described as the best ever taken of him. The same issue of our contemporary contains a number of personal and other impressions of Mr. Hinton, by Mr. Alexander Keighley, Alfred Maskell, John B. MacLachlan, Anthony Guest, and A. J. Anderson. It also reproduces a number of Mr. Hinton's best known exhibition pictures.

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## The British Journal of Photography.

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## SUMMARY.

Photographs of Far Eastern Scenes.—An exhibition of photographs made by Mr. H. G. Ponting, F.R.G.S., opens to-morrow (Saturday) at the house of the "British Journal," and remains open until April 16.

A review of the exhibition appears on page 214, and some notes Mr. Ponting's photographic travels on page 215.

The "B.J." Colonial Number.—Next week's issue will be a specially large number, and will contain reviews of apparatus and materials just coming out to the market for the opening season.

A new printing process in which a permanent silver image is obtained of a warm tone by physical development has just been brought to a commercial stage. (P. 212.)

Two exhibitions now open in London and deserving a visit from photographers is that of "Fair Women" at the New Gallery, and photographs by A. L. Coburn and Baron de Meyer at the Goupil Gallery. (P. 218.)

Which is better:—To take a small negative and enlarge more, or take a larger negative and enlarge less? We try to answer this question for the benefit of the hand-camera worker, who, in each case, must use a lens of large aperture. (P. 211.)

M. Jos Maes recommends a direct reversal method for the production of enlarged negatives. (P. 215.)

The annual meeting of the Professional Photographers' Association took place on the 13th inst. Mr. H. A. Chapman, of Swanwick, has been elected President. (P. 216.)

Frauds and Pests.—We commend the recently issued exposé of fraudulent persons issued from the "Truth" office. (P. 210.)

Fifty pounds was awarded a plaintiff in Westminster County Court Monday for the loss of his wife through a cinematograph exhibition. (P. 223.)

An international cinematograph exhibition will open at Hamburg June. (P. 211.)

Colour photography, ortho' plates, kite cameras, film packs, and also diaphragms are among the patents of the week. (P. 219.)

Echoes of the P.P.A. Exhibition, markings in tank development, non-spherical lenses, and the Ozobrome and Autochrome processes, occupy our correspondence columns. (P. 225.)

## EX CATHEDRA.

### Prof. Lippmann's New Plate.

The article that we published last week from our Paris correspondent describing Professor Lippmann's method of producing stereoscopic photographs without a camera, opens out quite a new sphere of thought with regard to stereoscopy. The first idea that occurred to most readers was, no doubt, Can the resulting effect be truly stereoscopic? and this question is one that at present we should not care to attempt to answer definitely. Some very tangled complications occur when we try to grasp the exact state of affairs. Copying the image on to a second plate of similar structure involves a very curious reassemblage of the multiple images; and the question of viewing distance involves another series of puzzling matters. For example, if the eye can observe only one point in each small image, and if the situation of the eye is that of the original object point, then nothing but that point can be seen in any part of the plate when we look at the original plate developed to a positive. The same conditions must, then, apply to the other eye, if that happens to be situated at the location of another object point, and the net result is that the two eyes see nothing but two overlapping different objects in all parts of the plate. From this it would seem that there must with every plate be a viewing point from which only a confused effect can be obtained. If, now, we attempt to follow up the effect produced when a positive copy is substituted for the original, some very interesting but rather obscure phenomena suggest themselves. No doubt Professor Lippmann has studied these points, which can no longer be obscure to him, so we trust that it will not be long before he treats us to an exposition of the optics of the matter. In the meantime those interested in optical puzzles will find very full scope for their energies in working out the subject for themselves.

\* \* \*

### The "B.J." Colonial Issue.

Our publishers' announcement of the issue of a special number of "The British Journal of Photography" to be placed directly in the hands of photographers in all parts of the world has been met, we are glad to learn, with almost unanimous approval, a consensus of opinion which has justified the wisdom of our publishers in placing a special issue upon a purely commercial basis. Next week's issue will see the fulfilment of a scheme upon which, with the co-operation of friends of the "Journal" in many lands, we have been engaged for the past year, namely, the preparation of a list of professional photographers and photographic dealers outside the circles of our home readers. Our list forms a round of purchasers, too large for any traveller, other than a newspaper, to traverse; a round, indeed, which is the span of the globe itself. The following copy (of the sub-divisions marked on the guide-

cards of our list) made when placing the names with our addressing staff will show the wide extra distribution of the "B.J." for March 27.

Argentine Republic	Malacca
British East Africa	Manitoba
Basuto Land	Mediterranean
Bechuanaland	Mexico
Burma	Natal
British Columbia	New South Wales
Barbados	New Zealand
British Guiana	New Brunswick
British New Guinea	Newfoundland
British North Borneo	North-West Territories.
Bermudas	Nova Scotia
Bahamas	Nicaragua
Bolivia	Orange River Colony
Brazil	Ontario
Cape Colony	Philippines
Ceylon	Prince Edward Island
China	Puerto Rico
Cochin China	Paraguay
Correa	Peru
Costa Rica	Queensland
Cuba	Quebec
Chili	Rhodesia
Colombia	Straits Settlements
Delagoa Bay	Siam
Dominican Republic	Sandwich Islands
Eastern Siberia	South Australia
Egypt	Salvador
Ecuador	Transvaal
Fiji	Tasmania
Guatemala	Trinidad
Honduras	Uruguay
Haiti Republic	Venezuela
India	Victoria
Japan	Windward Islands
Jamaica	Western Australia
Mauritius	Zanzibar

Our publishers desire us to say that to-morrow (Saturday, March 21) is the latest time for receiving advertisements to appear in this special issue. We may also remind our ordinary readers that some features of special interest will occupy our text pages. In particular the first of a series of articles on the modern studio and its equipment will appear, and some other features will be apparent when next week's issue comes before its readers.

\* \* \*

#### Loss of Density in Fixing.

In May, last year, we referred to a question raised in a contemporary as to the reason of negatives losing density in the fixing bath. The same writer has recently returned to the subject and questions our explanation on the grounds of an experiment that seems to us to be very inconclusive. He copied a print in three sections on a plate, giving one section 15 seconds, the second 30 seconds, and the third 45 seconds. To avoid under-development he left the plate in the pyro developer until the image appeared at the back, and after fixing he found that the first section was very thin, the second of normal density, and the third too dense, from which he concludes that under-exposure is the prime cause of loss of density in the fixing bath. It appears, however, to us that the results do not prove this at all. The resulting print only shows the ordinary effects of under, correct, and over exposure on the same plate, when development is adjusted to the correct exposure. The effect of under-exposure in copying is naturally great thinness of image when development is cut short, and the fact that the image shows at the back of the plate is no proof that all the particles in the thickness of the film are completely developed. As we pointed out in our former note, a completely developed silver particle is not soluble in hypo, except in the presence of oxygen and light. When fixation is conducted in the ordinary way loss of density cannot be attributed to solution of silver, only to the effect of hypo on incompletely developed particles. In the case of the experiments quoted there can be no doubt that the thinness is due to under-development, for the writer states that the part normally exposed showed only normal density when removed from the hypo, and if this was correctly developed it is clear that the more slowly developable under-exposed portion could not have been fully developed. As a matter of fact, a fully de-

veloped under-exposed plate never shows any sign of it in the fixing bath; on the contrary, it is just the kind of plate that shows a maximum amount of density, and gives the effect of what is commonly called "soot" or "whitewash."

\* \* \*

#### The Use of Eccentric Stops.

The ancient experiment of using don't stop with the photographic lens, recently been revived, and we have heard a good deal with regard to the supposed extraordinary properties of "two eyed" lenses and eccentric stops. One of the most popular features of the two-eyed stop is the fact that under certain conditions two dissimilar views can be produced with it; and as these two views can then be combined in a stereoscope it is, of course, assumed that they are stereoscopically dissimilar. It is theoretically possible for them to be so, but in practice serious difficulty arises. The conditions necessary for true stereoscopic effect cannot be fulfilled by Brewster's expedient of cutting two apertures in the cap of a large portrait lens. The "eyes" must be quite differently situated, and it is doubtful if they could be placed in the correct position without using a specially designed or corrected lens. Some examples that have been produced show very violent distortion owing to the wrong placing of the eyes, and it is manifest that two incorrect images cannot combine to give a correct stereoscopic effect. If we think, equally evident that it is not worth while making a large lens that will give the effect correctly seeing that the method at its best is a very inconvenient one. The question of untrue drawing is generally ignored when the stereoscopic question is under consideration, and it is rather amusing to see that another claim is made for the eccentric stop that depends solely on untrue drawing. It is pointed out that by shifting a single stop eccentrically an effect of altered drawing is obtained that cannot be obtained in any other way. As a matter of fact if the drawing is correct with the eccentric stop, the shifting of the stop is exactly equivalent to a corresponding shift of the whole camera, therefore the eccentric stop fulfils no other purpose than that of a fine adjustment of the standpoint. On the other hand, if the effect is peculiar owing to an exaggeration of the drawing, then the idea that the eccentric stops produce a truly stereoscopic pair breaks down altogether. If a correctly situated stop is shifted eccentrically, then, according to elementary laws of optics, any image that is in sharp focus undergoes alteration whatever, and shows no movement. All the strange effects of multiple images, etc., that have recently been described depend on want of focus, and, in the case of solid objects, the varying aspects of the image produced by different eccentric positions of the stop are simply evidences of lack of depth. That this is not generally realised is shown by another remarkable suggestion that has followed upon the revival of these ancient experiments. It is seriously suggested that by placing an agglomeration of stops in front of a lens a useful form of diffusion may be obtained! A much simpler method is to put nothing at all in front of the lens, and leave it to work in its regular fashion, when it will produce precisely the same amount of diffusion. It is remarkable how these simple methods of working get overlooked by authorities in practical photography.

\* \* \*

#### "Truth" and Social Pests.

A red-covered sixpenny book just issued from the office of *Truth* and entitled "*Truth* Cautionary List," is one which we can recommend our readers to spend sixpence on although photography—it is satisfactory to see—does not figure in it to any great extent. Its sixty pages of broad details of the great army of the bogus and the fraudulent



do, however, contain one or two references to free enlargement firms, though curiously the P.O.P. formula fraud of which we occasionally hear appears not to have come under our contemporary's eye. But if it warns its reader of the medical quacks, the money lenders, and trick advertisers, and others whose faith in the gullibility of human nature has brought them fortunes, the sixpence spent upon it is profitably expended. As a matter of fact it is a far more interesting book for a railway journey than the average novel or shilling magazine.

\* \* \*

#### An International Cinematograph Exhibition.

Preparations for the International Cinematograph Exhibition to be held in Hamburg from June 13 to 28 are now well in hand. The exhibition promises to be of a fairly international and interesting nature. It is the object of the society to give as comprehensive a view as possible of the progress that has been made in recent times, and to give an impetus to the interest that has always been shown in Germany. Besides German exhibits there are to be exhibits from England, the United States, France, Italy, and Switzerland. The exhibits will be classed and shown separately in different departments, which include cinematographs and film industry, photographic manufactures, optics and lantern projections, the latest inventions in lighting, and the literature devoted to the various subjects. A special feature of the exhibition will be the application of the cinematograph as a profitable means of advertising.

#### SOME PROBLEMS CONCERNING DEPTH AND ENLARGEMENT.

In our issue of July 26, 1907, we pointed out that if images produced by different lenses are to be enlarged or reduced to one common scale, then a stop of the same diameter must be used in each case, if the final results are to agree as to depth. Quite recently we have received a query showing that the matter of depth and enlargement is one that puzzles many photographers, and that the general application of the rule above quoted is not clearly understood. The query ran somewhat as follows:—If I make a half-plate negative with an eight-inch lens at  $f/8$ , and a quarter-plate negative with a five-inch lens also at  $f/8$ , and then enlarge both images up to  $15 \times 12$ , which enlargement will show the greatest depth?

This question is one that perhaps few photographers are prepared to answer offhand, yet the rule given provides the answer at once. If the lenses had apertures of the same diameter, the enlargements would have equal depth; but, as an  $f/8$  aperture with a five-inch lens is obviously smaller than an  $f/8$  aperture with an eight-inch lens, it is clear that the enlargement from the quarter-plate must show more depth than the other.

The question can be put in many forms, and though every variation may apparently render the matter more mysterious, yet the rule that equal-size images show equal depth if apertures of equal diameters are employed in producing the original negatives will generally indicate a short route to the answer. There is, however, an important corollary to the question. It is obvious that with two lenses of equal rapidity, the one of shorter focus has a material advantage in the matter of depth when we compare prints made on an equal scale. Consequently it is possible to enlarge on a bigger scale from the small negative and still retain the same depth as that shown by the print from the larger negative. This is a view of the matter that does not seem to have occurred to many, for we very seldom see it mentioned. Here we have a new problem:—Suppose a half-plate negative made with an

eight-inch lens at  $f/8$  is to be enlarged four times, then how much enlargement will a negative made with a five-inch lens at  $f/8$  require to give the same depth in the result? To solve this it is necessary to look at the matter from a new point of view. If the depth is equal in the two enlargements, then a particular point in each must be represented by a disc of the same size, according to the view of depth that commonly prevails. Suppose we assume that the lenses were originally focussed on infinity, and that we confine our consideration to the point representing the nearest object in approximate focus in the image produced by the eight-inch lens. According to the rules by which we calculate this distance—commonly called the hyperfocal distance—that point will be a circle of confusion of a certain diameter. If we calculate the hyperfocal distance for the five-inch lens, using the same circle of confusion, then the closest point in focus will be much nearer, but if we vary the diameter of the circle in direct proportion with the squares of the focal lengths, then we shall obtain the same hyperfocal distance with each lens. For example, if we allow 1-100 in. for the circle of confusion with the eight-inch lens at  $f/8$  the hyperfocal distance is about 66 ft., and it will be the same dimension with the five-inch lens if we allow with that a circle of  $1-100 \times 25-64$ , or 1-256 inch. The diameters of the corresponding discs in the originals are, therefore, as 256:100, or as 64:25, or, as the squares of the focal lengths. Therefore the two images will bear enlargement in inverse ratio to the squares of the focal length, so that the quarter-plate can be enlarged 2.56 times as much as the half-plate. If, then, the half-plate bears four times enlarging, the quarter-plate can be enlarged nearly  $10\frac{1}{4}$  times without showing any greater confusion at corresponding points. As a matter of fact its apparent depth will be greater, for, being a larger print, its corresponding points will look relatively sharper, though they are actually the same size. It must be remembered that the ratios given do not represent those of the final results. If two different images are enlarged to the same size, then, according to a well-known rule, the relative degrees of enlargement must be inversely proportional to the focal lengths of the lenses used to produce the negatives. Equal size enlargements are, therefore, produced if an image from a 5-inch lens is enlarged 8 times and one from an 8-inch lens five times. If, however, we enlarge in the ratio of 64 to 25 it is obvious that the final results will be then the ratio of 8 to 5, which is simply the inverse ratio of the focal lengths. If, then, we produce a  $10 \times 8$  print from the half-plate negative, the print from the quarter-plate will be  $16 \times 12\frac{3}{4}$ .

There is yet one more problem worth consideration. We have studied the conditions necessary to produce equal depth in enlargements made from negatives produced by different lens with apertures of the same actual diameter, and also with apertures of the same ratio number. The apertures may, however, neither be of the same diameter, nor have the same ratio number. Thus, for example, the 8-inch lens may be used at  $f/11$ , and the five-inch at  $f/8$ . What, in these circumstances, are the conditions that give equal depth or—as it may, perhaps, better be put—equal out-of-focus effects in the enlargements?

This problem may be tackled in the same way as the last one. In that we found that when focus varied, while the ratio aperture remained the same, then the relative sizes of corresponding confusion discs in the images were directly proportional to the squares of the focal lengths. If the aperture of one lens is varied, then the disc produced by that lens varies directly with the diameter of the aperture, or, what is the same thing, inversely with the ratio number of the stop used. Therefore, if we take two negatives with the same lens using, say,  $f/16$  one time,

and  $f/8$  the other, the first negative will bear twice the enlargement of the second one, or the scale of enlargement is directly proportionate to the ratio number of the stop. If, then, we produce negatives with two different lenses and with different stops the scales of enlargement will be inversely proportional to the squares of the focal lengths, and directly proportional to the  $f$  numbers. Taking the example assumed, if one negative is produced with a 8-inch lens at  $f/11$ , and the other with a 5-inch lens at  $f/8$  the relative scales of enlargements will be as  $25 \times 11 : 64 \times 8$ , or as  $275 : 512$ , or, roughly,  $2\frac{3}{4}$  to  $5\frac{1}{8}$ . The relative sizes of the results will be as  $5 \times 11 : 8 \times 8$ , or  $55$  to  $64$ , which is not a very great difference. The first will be a  $14 \times 10\frac{1}{2}$  in. print, and the other a  $16 \times 12$  in.

Those who understand simple arithmetical formulæ may like to see the above results expressed in condensed form.

If  $F$  and  $f$  are the focal lengths of two lenses, and  $A$  and  $a$  are the ratio numbers (or  $f$  numbers) of their apertures,

then equal depth or equal want of focus in corresponding parts of the image is secured in enlargements when the negative produced by  $F$  is enlarged  $f^2A$  times, and that produced by  $f$  is enlarged  $F^2a$  times, or, which is the same thing, when the relative degrees of enlargement are as  $f^2A : F^2a$ . This produces images varying in the ratio of  $fA : Fa$ . If the apertures are the same diameter, the  $f$   $F$   

$$= \frac{f}{F}, \text{ or } fA = Fa.$$
 Therefore, the relative degrees of enlargement are as  $f : F$ , which produces images of the same size.

If the apertures are of the same ratio number then  $A=a$ , and the relative degrees of enlargement are as  $f^2 : F^2$ , which produces images varying as  $f : F$ .

If the focal lengths are the same, but the apertures vary, then,  $F=f$ , and the relative degrees of enlargements are as  $A : a$ , and the results then bear the same ratio to one another.

## A NEW PROCESS GIVING PERMANENT SILVER PRINTS BY DAYLIGHT DEVELOPMENT.

[The researches of Mr. Sterry and others having of late drawn attention to the aptitude of the latent image to physical development, we are interested in publishing a short paper by the joint inventors of a process, the chief interest of which is centred on its practical outcome, viz., a paper which prints in a few seconds by artificial light and is developed in day or artificial light to prints which have the appearance of gold-toned P.O.P.s, and are, from their method of production, assured of permanency. The essay will explain the principle of the paper, and the very simple method to be followed in working it. Our own short experience of some of the first samples obtainable has placed us in possession of some excellent prints and no doubt our readers will be interested in awaiting its appearance on the market within the next few months by Synoloids, Ltd., 85, Gracechurch Street, London, E.C. We shall have some further notes to make on the paper in a later issue.—Eds. "B.J."]

To make perfectly clear the subject which we propose to deal with in the following article, we must, in the instance, be allowed to recapitulate some well-known theories and facts relating to the methods of developing the latent image formed by exposure to light of the silver haloids. Two developing methods are distinctly distinguished—the physical and the chemical one.

### Physical Development—Upwards.

1. In physical development the silver haloid remains unchanged by the action of the developer, the image being formed of nascent silver reduced from a soluble silver salt in acid solution by a reducing compound, the silver haloid having on exposure gained the property of attracting and fixing upon itself nascent silver in proportion to the amount of exposure received. In this way the image is built up on the sensitive layer from pure metallic silver in the finest state of division, which again is never deposited on parts where an action of light has not taken place. Hence a physically developed image possesses practically no grain, and does not show any lateral spreading of, for instance, black lines into white. A typical example of physical development is represented by the old wet collodion process, well known for rendering images of such brilliancy, clearness, and vigour as hitherto have been scarcely obtainable by any other means, and therefore still greatly used in all cases where such qualities of the negative are indispensable, for instance, in process work. The sensitive layer in this instance is formed by bathing a plate coated with collodion (guncotton solution) containing iodides, or mixture of the same with bromides, as soon as this coating has just set, in a solution of silver nitrate, whereby the insoluble silver iodide (and bromide) is formed in the film, which at the same time becomes imbedded with an excess of silver nitrate. In development this silver nitrate is reduced by the action of a reducing substance (pyro or ferrous sulphate, in acid solution, with acetic or sulphuric acid), and the nascent silver is deposited

on the silver iodide (and bromide) in proportion to the exposure previously given to the same.

### Chemical Development—Downwards.

2. In chemical development no soluble silver salt is present. The light sensitive silver haloid, embedded in some cementing material—most generally gelatine—is itself attacked by the developer, mostly an alkaline solution of some reducing organic substance, and reduced to metallic silver (more or less impure) in proportion to its previous exposure to light. By some secondary so-called "katalytic" process the reducing action is apt to spread laterally within the layer to portions of the silver haloid, which have not received any exposure to light. Hence, for instance, the difficulty of producing a negative in well defined black lines on clear glass from a black and white line drawing on a dry-plate. In addition, owing to the physical condition of the silver haloid and of the cementing material in which it is imbedded, the image itself shows more or less grain.

The difference between the formation of the image by physical and by chemical development is shown in the following diagram:—



Fig. 1.—Physical Development. Fig. 2.—Chemical Development.

For various reasons it seems better to substitute for the terms "physical" and "chemical" development the terms "surface" development and "layer" development, the meaning of which will readily be apparent from the diagram.

From what we have said above it will be easily understood that surface development is preferable to layer development, and attempts have often been made to adapt the first of these methods



dry sensitive preparations, i.e., gelatine emulsions, hitherto, however, without any practical result, as silver haloids formed in gelatine in this respect behave in quite a different manner from those formed in collodion, owing no doubt to the fact that silver haloids form distinct compounds with gelatine or constituents of the same, these compounds not possessing the property of attracting and fixing nascent silver.

It must be well borne in mind that we are speaking of the development of the latent image, which is not to be confounded with the intensification of an image on P.O.P., printed so far as to show all details, and only lacking in intensity, an operation which is wrongly termed "development." We are well aware of the fact that this process is similar to surface development, but it is not identical. It would, however, cause too great a deviation from our subject to prove this difference in an exhaustive manner, and we must therefore beg acceptance of the statement as given.

#### A New Physical-Development Printing Paper.

We have now found means to overcome all difficulties in the way of physical development of gelatine emulsions by abandoning the use of silver haloids and substituting for them the silver salt of an inorganic acid, which now takes the part of, and exactly as, the silver iodide (and bromide) in the wet-plate process, and by compounding a special type of developer, which at the same time gives a very fine tone to the developed image, and if the emulsion be applied to paper will never allow a black deposit to be formed on the back of the print. In this way this developer advantageously used for intensifying slightly printed copies on P.O.P.

We wish now to state the merits of the new process.

All who have used rapid and gaslight developing papers must now know that a great deal of experience, and in many cases doctoring of the negative, are required to get really satisfactory results. If it were not so, papers of this class would no doubt be much more largely used by professional photographers than they are at present. The uncertainty of exposure and of producing a permanent print of warm tone are no doubt the reasons for dismissing with "development" papers.

All these difficulties cease in using papers and transparency plates coated with the new emulsion together with the new developing compound.

The following will explain the method of working the process: The sensitive layer (be it coated on glossy or smooth matt paper, rough matt, white or tinted, clear or opal glass plates, or any other desired support, for any such can be equally well coated) placed in contact with the negative in subdued diffused light, either daylight or artificial light, no yellow or red light being necessary. The exposure is then made, and here we may mention at the correctness of exposure given to an average negative may be judged from the fact that a trace of the deepest shadows is just visible.

#### Printing by Artificial Light.

To illustrate the sensitiveness of the emulsion we may state that, with a negative of ordinary average density, such as is wanted for P.O.P. printing, the correct exposure is about one second to diffused sunlight or three seconds in the shade at this time of the year. If exposed to incandescent gas at a distance of 12 in. from the light the latter should be screened by tissue paper, or a rotating printing-table used to ensure even illumination. The exposure will be about fifteen seconds. From these statements correct exposure to other sources of light or under different conditions may readily be calculated.

As hinted above, in most instances, if the sensitive layer be directly exposed, careful examination of the print in the same light, as was used for filling the printing-frame, will show that slight traces of the deepest shadows are just visible. This possibility of judging the exposure is of still greater importance when enlarging, as it prevents the waste of large sheets of paper. It must, however, always be borne in mind, when filling the frames

and examining prints or enlargements, that the paper is extremely sensitive to light.

Regarding enlargements on this new emulsion, it may be stated that it is astonishing to see the difference between an enlargement on the new material and one on bromide paper, the first resembling a direct print from an enlarged retouched negative, and possessing the same character as the small original negative. After exposure the prints may be stowed away for days or weeks if properly protected from light and moisture, or developed immediately.

To carry this out, a fresh mixture is made of the developer according to our formula. The developing solution is then placed in a dish, and the exposed paper, without previous washing, placed in it, face upwards. The only necessary precaution is to see that the entire surface of the print is covered by the developer, and that no air-bells are present; otherwise nothing else is necessary, no rocking need be done, and several prints can be immersed at once.

After a short time the image will gradually begin to appear, rapidly gaining in strength. The process has the unique property that as soon as the sensitive layer is thoroughly permeated by the developer, which is signified by the picture beginning to appear, the sensitiveness is destroyed so that development can be carried out, if desired, in broad daylight without any fear or possibility of fogging taking place. Hence no dark-room is required for the new process.

The process is an extremely cheap one, and the importance of it to the profession may be realised when we state that a permanent print, indistinguishable from a gold-toned one, can be printed, developed-toned, fixed, washed, and mounted independent of daylight in the short space of time of five or six minutes. Owing to the entire absence of grain, the new process is most valuable for making transparencies, enlarged negatives, and especially for micrography. The correct time to stop development is just before the desired result of the finished print is obtained, as no loss, but instead a slight gain, in intensity takes place in fixing and drying. The print is immediately placed from the developer into an acid fixing-bath.

Were this procedure adopted with ordinary P.O.P. it would be absolutely fatal to the permanency of the photograph; but in the case of the new paper it is widely different, since the pictures produced consist of pure metallic silver, whilst in the case of P.O.P. the picture is formed by a mixture of metallic silver with the sub-haloids of silver, the composition and properties of which are not precisely understood, but are known to form easily decomposable sulphur compounds in acid fixing-baths. Besides this, we transfer in our case an acid paper from an acid developer into an acid fixing-bath, thus avoiding any possible decomposition of the latter which might take place if the fixing-bath were neutral.

Owing to the extreme solubility of the silver compounds in the paper, fixing is extremely rapid, the prints being perfectly fixed in less than one minute in a bath containing 1 oz. hypo to 20 oz. water. After fixing the print has only to be thoroughly rinsed under the tap, when it is permanent, complete, and ready for mounting. An important difference between our process and other silver printing processes is that the presence of traces of hyposulphite in a photograph by the new method cannot affect its permanency. The cause of this behaviour has just been given.

Owing to the qualities of the developer we use no subsequent toning is required, the appearance of a print or enlargement, done as above stated, being indistinguishable from a picture on gold-toned P.O.P. Rich brown to purple tones are easily secured at will by slightly varying the time of exposure, whilst by keeping to the same time of exposure any desired number of photographs can be produced identical in tone. Any difference in the time of development will not affect the tone, only the density of the image. An over-dense picture can be successfully and easily reduced without altering the tone.

Another feature of the developer is that it will develop a very large number of prints; 4oz. of solution will develop thirty-six quarter-plate prints, and it will not go black, even when exposed to the atmosphere for hours after it has been used for developing.

The deepest shadows are always beautifully transparent and

never clogged. It is also extremely easy to get soft prints from exceedingly hard negatives by simply adapting the time of exposure to the character of the negative—i.e. lengthening it in this case.

YORK SCHWARTZ.  
H. J. MALLABAR.

## THE ORIENT IN WELLINGTON STREET.

PHOTOGRAPHS OF THE FAR EAST BY MR. H. G. PONTING, F.R.G.S.

ON Monday next, March 23, will be opened the latest exhibition of THE BRITISH JOURNAL Office Galleries—one which is the record by a clever photographer of his wanderings in search of the picturesque in Japan, China, India, and Burma. The merit of a display of this sort is first and foremost the entertainment it gives to the large public who are unable to visit the distant lands themselves, but to whom travel is a passion the more insurgent because ungratified.

The gentleman who has furnished these photographs is Mr. Herbert G. Ponting. He was commissioned for the task that has so evidently proved a labour of love. Messrs. Raines and Co. have undertaken the seventy odd enlargements that hang here. There is not a single picture that is without its own special interest. Mr. Ponting has had an eye to the life in these Eastern countries as well as to their architectural and natural scenery. His first is a telephoto view, taken at a distance of twenty miles, of Fuji San, the sacred mountain of Japan, popularised in England thirty years ago when Japanese fancy goods swept in a wave over England. Fuji appears upon nine out of every ten designs by Japanese artists: and the penny palm and paper fans sold on London curbstones invariably bore its triangular snow-capped peak. No. 2 shows it again across the Lake Motosu. In No. 4 its crest overtops a remarkable waterfall, where the water spurts out from the side of verdure-covered cliff through a thousand perforations. One of the most impressive portraits of it is "Mount Fuji Above the Clouds" (No. 11). In this there is a foreground of firs, behind which extends the placid lake and the plain beyond to the foot of the mountain. A long swathing cloud stretches horizontally across the middle of the volcano and above it; in the clearest air the peak lifts its scarified apex, displaying its minutest detail of formation. There is perhaps a greater charm in this view than in another, to obtain which Mr. Ponting underwent many patient pilgrimages. He calls it "Mount Fuji and Kaia Grass" (41). It is sunny and placid. The air is so clear that nothing is lost by distance. In front the graceful Kaia grass is not agitated by the slightest breath of air. Without a sign of man, the vast stillness is highly impressive. Such an aspect is rare, and therefore quite worth the oft-repeated twelve-mile journey, and the hours and hours of waiting necessary to bring the precise moment when the grass was dead still and the mountain unveiled by the slightest haze. In another view we are shown a peep of it between two or three stems. Here the splendid enlargement is on such a scale as to give the sensation of actual size. Pictorially considered, the large horizontal view of the immense slope of the mountain-side exceeds the other versions. The snowy peak is supported by lesser wood-covered heights that reach up before it, and a line of cumulus cloud floats gently across its vast proportions. In this picture the sublimity of its mass is better expressed than in the fuller views.

### The Japanese Lady.

Mr. Ponting has been fortunate in ingratiating himself with a Japanese damsel, to whom even Occidental judgment would hand the apple of Paris. Her face is at once the ideal and the real one of Japan. In its regular oval, its smooth texture, and gentle modelling, one sees at once the prototype of the lady's

face on many a screen and fan, and, it may be added, of the mask. It has an undeniable fascination, and in this particular case the half self-conscious glance and smile of the damsel as she stands in a doorway, robed in the becoming fashion of her country, is all but irresistible. This Mr. Ponting calls "O Tsuné San" (5), but whether this is the lady's name or a vocative yearning of the photographer's, others will be able to decide. She appears again "En Déshabillé" (21)—on this occasion only—for Mr. Ponting, and still again in No. 65, in a copse with an umbrella. Here a fine pose, full of action, has been secured, and a charming picture results. In No. 20 she is "At Home" kneeling and warming her hands before setting the tea.

### Typical Eastern Figures.

Mr. Ponting excels in the seizing of action in figure groups. "The Man with the Rake" (7) is a good example. An old Chinaman, in strong light and shade, slouches along most convincingly with rake on shoulder and basket on back. "A Shinto Priest" (53) steps down with dignified air the stone stairs of his temple. Other examples of good movement will present themselves to the visitor. "The Great Wall of China" is shown in No. 10, where it is seen to be low enough to allow a native to lean over. In No. 31 we are shown the "Walls of the Tartar City," Peking—an elevation of one of the enormous fortifications, with traces of its recent bombardment in the ruined roof. A train of camels, splendidly caught, comes towards us with slow swing from a gap in the outworks. Their path cuts across the antique frontier at right angles.

### Indian Figures and Architecture.

Amongst the Indian pictures is one of "A Fakir of Holy Benares" (64) lying at ease on a bed of sharp three-inch spikes. "Burmese Women Praying in the Paingu Caves" (58) has the most curious effect. The two immense idols appear, somehow, of human size, and the group of women look like a score of little dolls placed before them. Much the same illusion is felt in No. 16, "A Prayer to Buddha," where there is but one supplicant. This is a print of exceptional quality.

The buildings of India have given Mr. Ponting some good opportunities. "The Taj Mahal" (11) is shown against a cloudy sky, which relieves the gleam of its white marble. Some of the Chinese temples show a little undue forcing of effect.

In the shadow of a marble entry stands "A Servant of the Maharajah" (12) chained to a stone, for he is an elephant, and makes a most effective picture.

No. 45, "With the Allies in China," a photograph of a pack of mules being driven along a dusty road, is a wonderful representation of movement, and one sees in it, perhaps at its best, the genius of the photographer for seizing on the very instant when the subject is free from awkward positions which usually turn photographic attempts at movement into ugly records of arrested movements.

Of the landscapes there remains not much to be added to what has been said already of the mountain pictures; but mention may be made of "Tea on the Hills and Rice in the Plains" (66), a Japanese panorama which affords an instructive view of the



parts of the country under cultivation and of the manner of the workers.

### A Touch of Eastern Colour.

Mr. Ponting has very wisely added a few prints in colour. The most pleasing of these are "Under the Purple Wistarias" (40) and "Evening at Matsushima" (50), which gives excellently an outdoor effect. The Purple Wistaria picture is certainly the

most decoratively disposed of any, hence Mr. Ponting made a wise choice in selecting it for colour. Its traditional look is due to the ladies' figures that stand and sit upon a sort of pier made of slight timber and bamboo; a river runs below, and the wistaria blossoming from a broad band of colour just in the approved method of Japanese art.

The exhibition should prove of unusual interest to the public, who may visit it free of charge. F. C. TILNEY.

### A PHOTOGRAPHIC ILLUSTRATOR IN THE EAST—SOME NOTES OF MR. H. G. PONTING'S WORK.

MR. H. G. PONTING, whose photographs of Eastern scenes are now being shown in Wellington Street, is still a young man, and younger still in photography.

A year or two ago he was ranching and gold mining in California, but photography has always been his hobby, or, rather, his best-loved pastime. He had a roving commission to go to the Far East writing and photographing, and was correspondent for "Harper's" with the first Jap army. He was one of the correspondents who received from the Emperor of Japan a medal called the Imperial Order of the Crown with a diploma. All the pictures of Japan, Korea, and Manchuria which appeared in the English and Continental papers before the war, under Underwood's copyright, were his work, as he travelled in those countries with a stereo camera before the war as well as during it. He was, we believe, the only correspondent who was allowed to spend three days on the half-sunk Russian warships in Port Arthur, watching the salvage operations, a few months after the fall of the fortress.

Mr. Ponting has undertaken three different commissions to visit the Far East, and his photographic travels have covered (in the East) Japan, Korea, Manchuria, China, the Philippines, Java, Straits Settlements, Burma, India, and Ceylon, and, furthest west, the Sandwich Islands. His illustrated articles have been published in "Harper's," "The Century," "World's

Work," "Country Life," "L'Illustration," of Paris, "Illustrated London News," and "Leslie's," of New York.

All over Japan he is known as "the Fuji man," a nickname bestowed on him by the Japs, as he has photographed Fuji from more points than any one else. In order to get his two pictures of "Sunset" and "Above the Clouds" from the top of Fuji he was compelled to remain at the summit (12,365 feet) four days and nights, during most of which time the weather was such that it was impossible to stand outside the hut, the force of the hurricane was so great. Mr. Ponting describes Fuji as the loveliest mountain in all the world, and as he has stood on the summit of the queenly Jungfrau, has gazed down on Italy and France from the summit of Mont Blanc, and has viewed Everest and Kinchinjunga in the Himalayas, he may perhaps be permitted to express an opinion.

On the few occasions in his photographic career that Mr. Ponting has entered the western world, where there are such things as photographic exhibitions, he has made his own exhibition prints, but as he is at present away from home, temporarily in London, it has been impossible for him to do so, and therefore he has placed such negatives as he had with him in the hands of Raines and Co., of which enterprising firm he writes in terms of the warmest praise of the care and attention paid to his wishes.

## A METHOD OF MAKING ENLARGED NEGATIVES DIRECT BY REVERSAL.

[The name of Mees being familiar to readers of photographic literature in this country, it may be interesting to state, in translating the following article from the "Bulletin of the Association Belge de Photographie," that the author, M. Jos Maes, is probably a member of the same family as Dr. C. E. K. Mees, who traces his descent from a Dutch or Flemish ancestry on his mother's side. It was M. Jos Maes, if we remember rightly, who, a year or two ago, suggested that the materials for a developer could be measured sufficiently accurately in mustard-spoonfuls, a procedure which we can hardly imagine commends itself to his English kinsman.—Eds. "B.J."]

Of the various methods of making enlarged negatives, the simplest and most rapid is that based on the reversal of the image in a manner somewhat on the lines of that employed by MM. Lumière in the manipulation of the Autochrome plate, and used also in many photo-mechanical workshops, particularly in years gone by, for the duplication of negatives. M. Lalagny, of Paris, has revived the system of late, and I can now recommend it, after having used it with great success for enlarged negatives on plates and papers. The actual enlarging process, either by daylight or artificial light, should be chosen for the convenience of the worker. I myself use an arrangement of two incandescent burners placed on either side of a paraboloid reflector, which gives an absolutely equal illumination to the negative, and proves quite satisfactory for a negative of 7 by 5 inches.\* The negative can be turned with its film in either direction, according to whether the worker desires to have his enlarged negative a facsimile or a reversal of the

original taken. While ordinary dry plates give very good results, the enlarged paper negative may be specially recommended, as it is far easier to produce, and is more handy in use. Moreover, it can be printed from either side, and is therefore available for all kinds of printing processes. The kind of paper which has proved best is the ordinary platino-matt employed for ordinary enlargements. Naturally, a paper of as fine texture as possible will be selected; also, the negative papers made by several makers may be used, but their rapidity, which is practically that of a medium dry-plate, renders them perhaps less convenient in use than the slower bromide paper. The developer found best for the enlarged negative is as follows:

Amidol .....	1 gm.
Sulphite of soda, anhydrous .....	2.5 gm.
Potass. bromide, 10 per cent. solution ...	10 drops.
Water .....	100 ccs.

The image appears in five or six seconds, and development lasts about a minute. The time of exposure should be adjusted to allow of the above times being observed, and in this case the

Messrs. Lancaster, of Birmingham, make a variety of these convenient illuminating burners.—Eds. "B.J."

image should be quite strong enough, and will appear in the film; in other words, the positive print should be a little flat. The enlarged print, whether on plate or paper, having been thoroughly washed—this is a very essential point—we are ready for the reversal process. The print is brought out into white light, either by opening the window of the dark-room or by exposing it to the light from an incandescent burner. This brief exposure is necessary in order to fully impress all portions of the silver bromide which, not having been exposed to light during the first exposure, would not be reduced to metallic silver by the developer. With an incandescent burner at 20 to 30 cm. distance, the exposure should be from thirty to sixty seconds. It will be noticed at this stage that the white film becomes slightly grey and tinted; in the case of platino-bromide papers the tint will appear faintly violet. This need give no cause for anxiety, but is in fact a condition for successful results. Exposure having thus been made, the further work is proceeded with in the dark-room. The print is placed in the following solution:—

Potass bichromate .....	15 gms.
Nitric acid .....	6 ccs.
Water .....	500 ccs.

As soon as the plate has been covered with this solution, the positive image springs out for a moment, the reduced silver is dissolved from it, and at the end of a few minutes disappears completely. The silver image is converted into silver chromate.

The print is then thoroughly washed, to remove the salts of chromium; or instead of a rather protracted washing the following solution, due to M. Balagny, is used:—

Sulphite of soda, anhydrous .....	100 gms.
Bisulphite of soda solution .....	20 to 25 ccs.
Water .....	500 ccs.

Five minutes' immersion of the print in this bath will completely remove the chromium salts, after which it is washed in several changes.

The plate or paper print is then again covered with the amidol developer used in the first instance. It reappears at the end of thirty seconds as a negative, which gains density somewhat slowly, and obtains sufficient intensity in ten to fifteen minutes. It is necessary to continue development up to a point when the image appears fogged and somewhat too vigorous, and then, after washing, the print is fixed in an acid fixing bath in the usual way, washed, and dried.

The paper negatives are somewhat opaque, but they can be rendered transparent by rubbing the backs of them with a tuft of cotton wool soaked in:—

Alcohol .....	2 parts.
Linseed oil .....	1 part.

This is done two or three times, so as to allow the solution to penetrate the paper, and the excess is then wiped off. An enlarged negative is thus obtained having the appearance of being made on a very fine ground glass. A trial of the method will show how easy it is to obtain enlarged negatives possessing all the delicacy and gradation of the original. The method can be warmly recommended to amateurs desirous of preparing an enlarged negative for any of the processes, such as oil, bromoil, and gum-bichromate, commonly employed at the present time.

JOS MAES.

**DEATH OF MR. JOHN GROVE JOHNSON.**—We very much regret to hear of the death on Wednesday last of Mr. J. G. Johnson, the head of the well-known firm of Johnson and Sons, of Cross Street, Finsbury. Mr. Johnson had been associated for many years with the important chemical firm which bore his name, and had witnessed the modern developments which it had experienced in the preparation of photographic developing and other compounds, which during the last few years have come upon the market under the trade mark of "Scaloid."

## THE PROFESSIONAL PHOTOGRAPHERS' ASSOCIATION. ANNUAL GENERAL MEETING.

THE annual general meeting of the Professional Photographers' Association was held on the 13th inst. at the Royal Photographic Society, 66, Russell Square, W.C., Mr. H. C. Spink, president, in the chair.

The Hon. Secretary having read the report of the committee, in moving its adoption, Mr. Alfred Ellis said that members could see from the report that the work of the association during the year had covered a wide range, and it could be fairly claimed that the objects of the association had been kept well in view. Perhaps the matter that had given the committee the most anxiety was the proposed new Copyright Bill. In the Artistic Copyright Society's original draft the rights and interests of photographers had been ignored, and it was only by persistent sticking to their points that any concession could be obtained. The entire brunt of fighting the battle for the rights of photographers had fallen upon the P.P.A., and not the slightest assistance had been received from outside the association. The sub-committee had been successful, however, in obtaining such modifications of the original draft that if the Bill passed in its present state photographers would have little to complain of. The good work done by the association in the matter of this copyright question alone was a sufficient justification of its existence. In reference to the Employers' Liability Act, Mr. Ellis said a considerable amount of work had devolved upon the committee in making the necessary arrangements with the Fine Art and General Insurance Co. Naturally, with regard to a new and far-reaching Act such as this there was everything to learn. The insurance company knew no more than they, but the matter was taken up in good time, and before the Act came into force they were able to present to their members an arrangement which they felt satisfied was reasonable in terms and covered the entire risk. He thought it a pity that more members had not availed themselves of the opportunity, and feared that some of those who had neglected to insure would find themselves in a bad way when trouble arose.

Mr. H. Chapman, J.P., in seconding the motion, said it was difficult for an association when the work was done in the office and in committee to make known the extent of the good work it was doing. The publication of the report should have the effect of informing professional photographers outside the pale of the association of the benefits they generally, and the members particularly, derived from the association, and he hoped that those present would impress upon their fellow professional photographers the importance of supporting the association.

Mr. S. H. Fry said that when Employers' Liability first came into force there was a general expectation of daily accidents, but as time went on and nothing happened out of the ordinary course there was a tendency to ignore the possibility of accidents. He thought it the duty of the committee to rub it into the members that there was a risk, and that it could only be satisfactorily met by insurance. With regard to the report generally, he hoped the members would consider it a satisfactory record of a year's work, for while the members of the committee thought it an honour to serve it should not be forgotten that a considerable amount of work devolved upon them.

Mr. T. C. Turner (Hull) said, with reference to the exhibition, they were much indebted to THE BRITISH JOURNAL OF PHOTOGRAPHY for their hospitality, but while, in his opinion, the exhibits were creditable to the exhibitors, he thought they did not show to as great advantage as they might have done in a gallery better lighted and less cramped in space. He took exception to some of the criticisms of the exhibition.

Mr. Fry thought it would be generally agreed that the present exhibition was far superior to the previous one, and there was therefore every possibility of each succeeding exhibition showing an improvement.

The Hon. Secretary, in course of a general commentary on the matters dealt with in the report, said probably the least satisfactory feature of the report was their stationary membership. That seventy-five new members had joined was not unsatisfactory, and they must expect a certain percentage of loss from death, resignations, etc., but it was not a thing to make them proud of their profession that fifty-two members would have to be removed from the list who owed two years' subscription, but had accepted during that time all the benefits



membership. Commenting on a letter he had received from one of them, which ran: "Dear Sir,—I wish to discontinue my subscription to the P.P.A."—he said it showed that some photographers must have a curious sense of right and wrong to imagine that an obligation could be wiped out in that summary way. The committee were seriously considering methods of increasing their membership, and hoped their next report would be more satisfactory in this respect. With regard to the free portrait swindle, he said there had been numerous complaints from members, and instructions had been given him to deal with the cases. About sixty copies of the letter for publication, referred to in the report, had been sent to country newspapers, and he believed in most cases had been inserted. He felt quite convinced that the photographers in a locality being canvassed, or two or three of them, or even one, with the expenditure of a little energy and a small expense, could so advertise the methods of these people that their efforts would fail to be remunerative. Their two members' meetings had been most interesting, but considering the number of members they had within convenient distance of Russell Square it was a pity the attendances had not been larger. He hoped to be able to announce a lecture or paper for their meeting in October.

Mr. H. J. Rigden (Bowes Park) said that all those who had spoken were members of the committee, but as an ordinary member he should like to express his appreciation of the large amount of work the committee had performed during the year. There could be no possible doubt of the usefulness of the association to members, or of the value of the association's work to photographers generally.

Mr. E. Hilton (Hunstanton) said he had had occasion to make a claim on the Fine Art and General Insurance Company for a loss by fire, and received a cheque in settlement within forty-eight hours, and on the only occasion he had had to write to the Hon. Secretary was to place a case of infringement of copyright in the hands of the association, and he had a cheque in settlement within a fortnight without any trouble to himself.

The adoption of the report was then carried.

The Hon. Treasurer presented a statement of accounts showing a small balance on the year and £194 to the credit of the association to the bank.

The Hon. Secretary said a statement of the accounts and balance sheet would be sent to each member, with the new Handbook to be issued shortly.

Messrs. Frank Turner and C. St. J. Vaughan were re-elected auditors. The list of officers for the new year was then read:—President, H. A. Chapman, J.P. (Swansea); past president, H. C. Spink (Brighton); members of committee—London; F. A. Bridge, Alfred Ellis, Ernest C. Elliot, S. Herbert Fry, H. Edmonds Hull, Langfrier, Alexander Mackie, Daniel Prodger, Edgar Scamell, Langfries, C. H. Skillman, R. Fellows Willson; country: G. P. Abraham Keswick, T. Birtles (Warrington), J. C. Burrow (Camborne), Hy. J. Comley (Stroud), Wm. Gill (Colchester), W. H. Hawkins (Plymouth), Lankester (Tunbridge Wells), F. P. Moffat (Edinburgh), A. F. Towell (Liverpool), R. W. Robinson (Redhill), T. Rowe (Eastbourne), and the treasurer and hon. secretary are appointed by the committee at their first meeting after the annual general meeting.

In leaving the chair, Mr. H. C. Spink congratulated the association on their choice for their new president. Mr. Chapman had given good proof of his interest in the work of the association by having travelled from Swansea on five occasions to be present at their committee meetings. He thanked the members and his fellow members of the committee for their kindly support during his year of office.

Mr. H. A. Chapman then took the chair and was invested with the presidential badge. He thanked the members for the honour conferred upon him, and promised to do his utmost to build up and extend the usefulness of the association. He hoped to attend every meeting. His first duty was to propose a very cordial vote of thanks to Mr. Spink for the able fulfilment of the duties which had devolved upon him since taking the chair a year ago, and asked his acceptance of a replica of the centre of the presidential badge in gold, the gift of the members of committee, as a memento of his year of office.

Mr. Ellis, in seconding, said Mr. Spink had approached the office of president with considerable diffidence, but they had all been sure that he was able and competent when they invited him to take the chair, and he had proved that their faith in him was well placed.

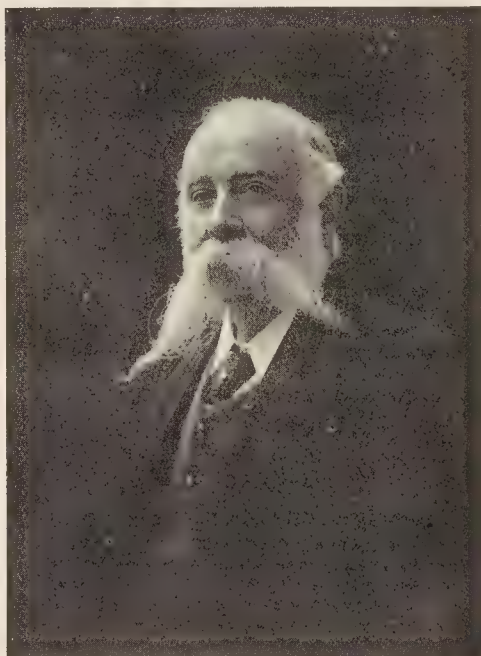
The Hon. Treasurer would like to add a few words to testify to the appreciation of the members of committee of their past president's leadership. He had followed a succession of strong and able presidents, but he had done well, and had earned his place in their roll of past presidents.

The vote was carried by acclamation.

Mr. C. St. J. Vaughan proposed a vote of thanks to the committee, which was responded to by the hon. treasurer and the hon. secretary; and a vote of thanks to the auditors closed the proceedings.

We must hold over the text of the report of the Committee until our next issue.

Mr. H. A. Chapman, the newly elected president of the Professional Photographers' Association, has been intimately connected with photography since very early days, and his long and varied experience should prove of much service in enabling him to fulfil the duties of such a position. Though an Englishman by birth, Mr.



MR H. A. CHAPMAN, OF SWANSEA.  
Elected President of the Professional Photographers' Association, 1908-9.

Chapman has spent the greater part of his life in Wales. As far back as 1853 he was working the Daguerreotype process in Lincoln, and in 1857 moved to Swansea, where he commenced his professional career. His innate sense of humour and genial disposition soon made him a favourite with the Welsh population amongst whom he has lived up to the present time, and who have testified their appreciation by making him, at various times, Town Councillor, Alderman, Mayor, a member of the Board of Guardians, and Justice of the Peace. As president, therefore, of the Professional Photographers' Association Mr. Chapman adds one more distinction to an already goodly list. The portrait which we reproduce was taken in his own studio at Swansea.

**SOUTHEND-ON-SEA PHOTOGRAPHIC SOCIETY.**—The annual exhibition will be held in the large hall of the Technical School, Southend, from April 21 to 24. There will be four open classes, including one for colour photography (prints or transparencies), and bronze plaques will be placed at the disposal of the judge, Mr. F. J. Mortimer, for award in each class, together with a special silver plaque in the champion class. Exhibitors at the South London, South Suburban, and Catford Societies' exhibitions can have their exhibits transferred to Southend carriage free. The hon. sec. is Mr. John Archer, 24, Ashburnham Road, Southend-on-Sea, from whom further particulars and entry forms may be obtained.

## Photo-Mechanical Notes.

### Drawings for Reproductions.

A recent patent specification (No. 19,721, 1907) of Emile Laporte, 107, Rue Neuveville, Fribourg, Switzerland, describes a process for prints resembling etchings. The process consists, then, in taking a translucent sheet, of which the surface is grained or roughened in order to permit of the artist executing his drawing thereon. The grain thus formed upon the surface which receives the picture having destroyed the transparency of the material of the sheet, it is necessary to restore to the supporting sheet employed its original transparency. The supporting sheet can then serve as a negative for a half-tone or litho plate.

The material of the plate is polished celluloid of the clearest and most transparent kind obtainable. On it is formed a grain close and fine according to the design which the artist wishes to depict. This graining of the sheet of celluloid may be effected by different means. One method of obtaining a convenient graining on the surface consists in sprinkling or spraying with a solution of resin in alcohol. When the alcohol evaporates there remains on the celluloid a grained surface of fine particles, which is very convenient for a highly-finished picture.

To thus fix the drawing, and at the same time restore its transparency to the celluloid, one may have recourse to different means, for example, to dip the sheet of celluloid into a bath of acetone, alcohol, or other suitable liquid. Or one may cover the surface of the picture with acetone, alcohol, or the like by means of an atomiser so as to produce the necessary transparency.

### PHOTO-MECHANICAL PATENTS.

The following patent has been applied for:—

PROCESS SCREEN.—No. 4,740. Improved half-tone process screen. Leon Eustace Smiles, "Cheshunt," Park View Road, Welling, Kent.

## Exhibitions.

### FAIR WOMEN AT THE NEW GALLERY.

THE latest display of the International Society of Sculptors, Painters, and Gravers is called the Exhibition of Fair Women, but it must be admitted that many of the women adorning its walls are not fair in any sense of the word, and the visitor who goes with hopes of a dream of fair women will possibly have a rude awakening. It is a fact that a large proportion of modern pictures do not wear well. Methods of painting and mannerisms of style have respectively dulled the material and spiritual lustre of many. But a few do stand the test of time, rising superior to all changes of ideas of fashion and environment.

It is a principle of the painted and photographed portrait alike that where there is arresting design, good tones, choice colour, and, above all, a record of something really human that goes straight to the spectator's heart; then all those antiquated circumstances which cause the flippant to employ epithets like "guy," "frump," "hideous," and so forth, sink absolutely beneath notice in view of the eternal and universal qualities, or else gain from those qualities a glamour and charm. The present reversion of public taste to early and mid-Victorian costume is largely, if not entirely, due to the best work of the painters of those times, far enough removed now to be fresh to the younger generations. Amongst all, the sound and feeling work of Alfred Stevens, the Belgian, stands out as especially admirable. His "Lady at the Piano" hanging here, is so zealously painted as to put to shame much of the cheap shorthand that passes for accomplishment to-day, when the "single interest" fetish gives such convenient excuse for empty spaces. In Stevens the whole thing is the single interest, sound and modest, and harmonious yet magnificently strong and convincing. His unflinching portrayal of dress, furniture, and the light and shade that reveals or obscures them, combines a roundness and solidity of form with the most advanced impressionism. He gives for a close view what Sargent gives for a view at a few paces. But both feel the same qualities of light upon texture and form, though they offer them so differently—the

one by the patient manipulation of an old master, the other by wizard's hypnotic stroke.

The large triple portrait by Sargent dominates the whole exhibition. These three white-clad ladies—Lady Elcho, Lady Tennant, and Mrs. Adeane—sitting together in sunlight whilst the spacious room behind them is in its proper relative gloom, save for a fleck of wall and picture-frame—this stupendous canvas certainly goes further in recording the beauty of certain natural phenomena than any other painted work, Rembrandt's only excepted, and even his had it not been for Sargent's wizardry of touch.

An exhibition of this sort, where everything preaches its own particular sermon of tone, pattern, or pose, is of the utmost value to photographic portraitists. Not only example and precept is here, but warning too; for in a few cases one cannot but regret a prosaic or unhappy arrangement of sitter and accessories, or an insinuating and eccentric manner of presentment. It may also be seen how often the best artists seem to proceed in directions quite opposed to those of tradition and theory. For instance, in Sargent's full-length Duchess of Portland, and in the seated portrait by Neven Du Mont of the artist's wife, the chief accent is by no means on the face. In the Sargent the brightest and greatest expanse of light is on the lower portion of the dress of the tall figure, and in the Du Mont the head is in comparative tone, shaded by trees over the garden seat where the lady sits with her "owl and pussy-cat." "La Rose," by von Glehn, is a study of broken beams, where the hand catches gleam of light and the face lies in shade.

The infinite variety of arrangements and poses, the differing ideas as to the placing of the figure on the canvas, and other matters of like importance may be studied here to better advantage than in an ordinary exhibition, because other branches of art do not claim attention, and because the pictures shown cover a long period of time and are therefore very varied in their styles. The maker of portraits should be strongly inspired by a visit. Particularly to be recommended is Furse's "Lilac Gown," another sunny exercise of a lady whose face, although in tone, is flooded with reflected light under parasol. The distant garden is a revelation in backgrounds, and the composition is boldly halved across its oval limits by the horizontal line of a hedge. The reticent and accomplished Greiffenhagen's "Mrs. Beresford Ryley" is a most delightful harmony of low-toned colour. Had Whistler painted it, his contentious admirers would have had a fine argument. The same artist's "Miss Sybil Waller" is well patterned. The head with its rich colour and generous painting is largely massed up by the plentiful hair and tells as a fine shape in tone against the background. In Alexander's "Marjorie" we see a whole picture in low and quiet tone from which the face emerges with a fuller and more solid modelling. This is, of course, the general method; but it need not always deal in low tones. An opposite way is that of Chaplin, the brilliant Frenchman, whose portrait of Mdlle. Lemaire has the voluptuous charm of brilliant colour. The hands, so exquisitely painted, lie almost indistinguishable among the stiff and ample folds of flashing silk of their own colour; the white bodice is so delicately harmonised as scarcely to suggest contrast. The head alone, firmly and smoothly painted with despairingly faultless drawing, stands out from a dream of indeterminate pink and white and flesh-tints. The portrait is well known by reproduction, but its captivating colour and execution can only be enjoyed in the original.

Many other works of great charm might be detailed did space permit, but it is impossible to do more than whet the appetite by one or two examples. The visitor will notice with enjoyment certain things by Lavery, Watts, Orpen, Nicholson, Blanche, Potter, Lebach, Besnard, Bonnar, Laszlo, Millais, Leighton, and Duran, and may also be interested to see the bright and ingenuous countenance of the famous Mrs. Evelyn Thaw, dextrously given by Harrington Mann.

The exhibition remains open during the present month—daily from 10 to 6.

### CAMERA PICTURES BY A. L. COBURN AND BARON P. MEYER.

An exhibition of sixty-one photographs has been opened at the Goupil Gallery, 3, Regent Street. Thirty-seven of these are by Mr. Coburn, and are, in our opinion, quite the cream of his work.



residue, by Baron de Meyer, are likewise more effective than anything we remember to have noticed from his hand, and therefore we have no hesitation in pronouncing this exhibition one of the most interesting and artistic shows of photographic work that we have ever seen.

Mr. Coburn includes many of his portraits of well-known people, and among those of chief interest are George Moore, Sargent, Le Sidaner, and C. H. Shannon. These make an appeal because of their unhackneyed subjects. It is interesting to find that George Moore is now a smart, stout gentleman, and that the last trace of his early Bohemianism has gone, apparently for ever. We find it difficult to believe that the bullet head of Sargent, as here given, is not somewhat due to the photographer; but the delicate profile of C. H. Shannon is a refined piece of work. In landscape, Mr. Coburn strikes us as having developed further than in portraiture. He shows a very rare originality in selection of subject. His vision has become matured. We once thought him capable of being proud of his work when it was merely new in aspect. Now he seems to get quite as new a point of view as formerly; but he takes care that it has beauty also. In his "Tunnel Builders" we see the figures of workmen silhouetted against the floating smoke of their labours, and standing upon an eminence of Cyclopean steelwork. It is not only a picture of great charm, but is grimly eloquent of its subject also, as well as effective and impressive. Another remarkable print for subject and originality of view is Mount Vesuvius from Pompeii, showing the volcano wreathed in mists and looming up behind the amphitheatre. "The Sea-Side" is an almost bird's-eye view of Ramsgate sands, teeming with bathers, and lit by an eerie flash of sunlight. An extremely high horizon just permits a glimpse of a stormy sky to show itself. An allegorical mood has beset Mr. Coburn in "Life," which shows an old and sturdy creeper spreading over a wall at the foot of which are two tombs wherein the roots find the death that is their life. We may grant the truth of the fact and the aptness of the allegory; but pictorially it is, perhaps, the print of least value here.

Baron de Meyer is a firm upholder of principles that belong to photography rather than to art. He has in one or two cases marred a most beautiful print by his Quixotic respect for what "was there" when he operated. We are not allowed to forget that his pictures are camera pictures. The most flagrant example of this want of subtlety is in the portrait of a lady, which has a staring and offensive triangle of light just where it drags the attention away from the important element of the picture. In other respects this work is a magnificent performance. We admire most his portrait of "The Lady Ottoline Morrell," a fascinating picture in every respect, and "Pepita, the Little Dancer," has character and grace also. Some of Baron de Meyer's Spanish scenes are of great beauty.

The characteristic of all the work here is its distinguished quality, its thoroughness and sincerity, and its absence of that wish to shock which has not infrequently been an attribute of modern pictorial photography. We congratulate the promoters upon their excellent choice of a gallery and the highly distinguished company in which their pictures find themselves. We recommend visitors not to leave the building without a glance at the dreams of colour furnished by Le Sidaner's Hampton Court and London pictures on the ground floor.

#### NOTTINGHAM CAMERA CLUB.

The following is the list of awards made by Mr. Furley Lewis at the exhibition of the above club, which closes to-day. Open classes: Rose bowls have been awarded to the following:—Class A: A. Benussi, No. 46, "Arco Istria"; Dan Dunlop, No. 82, "Edinburgh Castle from Greyfriars"; Class B: J. S. Atherton, No. 157, "Autumn Leaves"; Dan Dunlop, No. 160, "The Old Professor"; Class C: V. E. Morris, No. 173, "Looking into the Cloister" (debarred); W. A. Clark, No. 182, "The Abbot's Chapel"; Class D: Mrs. R. Dunlop, No. 191, "Chrysanthemums"; Class E: Samuel Manners, No. 216, "Apples"; Class F: H. Wormleighton, No. 23, "Busy Sisters"; J. E. Morris, No. 12, "Looking into the Cloister."

The following have received honourable mention:—Class A: Benussi, No. 45, "Studio, Paesaggio"; T. H. Thorpe, No. 71, "The Mists of Morning"; A. K. Dannatt, No. 51, "The Early Day"; Harry Lindoe, No. 52, "The Deserted Mill"; Oscar Hardee,

No. 38, "Bruges Canal"; A. E. King, No. 20, "Sun and Mist." Class B: F. A. Tinker, No. 133, "Diligence"; Mr. and Mrs. Alfred Bracewell, No. 141, "Reverie"; Mrs. E. Peake, No. 99, "Seeing the World"; A. W. Ward, No. 110, "The Drinker"; C. W. Pearson, No. 127, "Head of an Old Man"; J. S. Atherton, No. 134, "The Fisherwoman"; C. H. Eden, No. 133, "Might is Right"; Harry Lindoe, No. 109, "A Portrait Study." Class C: W. H. Blake, No. 166, "An Old Stairway"; H. Jacob, No. 171, "A Cathedral Door"; C. H. Hewitt, No. 168, "In Canterbury Cathedral"; S. D. Middleton, No. 179, "A Gleam of Sunshine." Class D: G. A. Booth, No. 206, "Gooseberries"; Dan Dunlop, No. 188, "Campanula"; J. Maddison, No. 200, "Reflections." Class E: H. C. Holden, No. 240, "A Portrait," No. 239, "Interior," No. 242, "Flower Study"; H. Burrows, No. 243, "Flower Study"; G. W. McIntosh, No. 231, "Anemones"; W. E. Clifton, No. 221, "The Root of all Evil"; T. H. Jones, No. 224, "Two Sticks." Class F: R. Hancock, No. 6, "Carding Spider Attacking Ermine Moth"; Alfred Taylor, No. 38, "Maggies."

#### FORTHCOMING EXHIBITIONS.

- March 7 to 21.—South London Photographic Society. Sec., E. Pady, 260, Southampton Street, Camberwell, S.E.  
 March 14 to 21.—Sunderland Photographic Association. Sec., W. E. Kieffer, Stirling Street, Sunderland.  
 March 18 to 21.—Nottingham Camera Club. Sec., S. W. B. Vines, 101, Sherwood Street, Nottingham.  
 March 21 to 28.—Midlothian Photographic Association. Sec., Robert Oliver, 6, Murieston Terrace, Edinburgh.  
 March 27 to 28.—Catford and Forest Hill Photographic Society. Sec., T. Browne, 169, Woolstone Road, Forest Hill.  
 March 30 to April 4.—Malvern Camera Club. Entries close March 21. Sec., J. B. Nickolls, The Exchange, Malvern.  
 March 31 to April 4.—Sheffield Photographic Society. Hon. Sec., J. W. Wright, 62, Vale Road, Sheffield.  
 April 21 to 24.—Southend-on-Sea Photographic Society. Entries close April 6. Sec., J. Archer, 24, Ashburnham Road, Southend-on-Sea.  
 April 22 to 25.—Plymouth Photographic Society. Entries close April 14. Sec., Wilfred Grist, The Athenæum, Plymouth.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for Patents have been received from March 2 to March 7:—

- FLASHLIGHT.—No. 4,691. Improvements in photographic flashlight apparatus. Albert Victor Bailey, 55, Chancery Lane, London.  
 COLOUR PHOTOGRAPHY.—No. 4,745. Process of colour photography. Charles Louis Adrien Brasseur, 18, Southampton Buildings, London.  
 ANIMATED PICTURES.—No. 4,829. Improved means for displaying animated pictures and the like. Frederic De Mare, 72, Cannon Street, London.  
 DARK SLIDES.—No. 4,935. Improvements on photographic plate-holders or dark slides. Ernest Luckwill, 88, Chancery Lane, London.

#### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

COLOUR PHOTOGRAPHY.—No. 5,692. 1907. Three negative colour records are taken through orange-red, green, and blue-violet colour filters respectively, and from these three negatives are formed four combination negatives by means of the bleach-out process.

From the before-mentioned three negative colour records three positives are made in the usual manner. Each of these positives

is used in combination or conjunction with a colour light filter. Thus, from the orange-red negative colour record I obtained a positive which is used, combined with an orange-red light filter, and the combination is hereinafter called "red positive."

From the green negative record the "green positive" is made, to be used in conjunction with a green light filter. From the blue-violet negative record a positive is obtained, to be used in conjunction with a blue-violet light filter, and hereinafter called the violet positive.

A special bleach-out tissue is used wherein the fugitive dyes, erythrosine, auramine, methyl green, and aniline violet are made more sensitive to the action of light and are rapidly faded or bleached by rays of light of a complementary colour. This tissue is prepared in the following manner:—Dissolve in spirit the blue-green dye, known as methyl green; to the resultant add a little chloral hydrate, dissolved in spirit, a small quantity of resin similarly dissolved, and to the whole some enamel collodion. This mixture is coated on to a support of gelatine and dried at a warm temperature, obtaining a blue green sheet of sensitive tissue that will bleach on exposure to red light. Make a second mixture, as above described, using in place of the blue-green dye, the red dye erythrosine, and rather less chloral hydrate. This mixture is placed over the blue-green tissue, a thin coat of gelatine between the two tissues acting as an insulator. Also make a third mixture, using the violet colour. This mixture is coated on to a separate support of gelatine; and a fourth mixture or coating, using the yellow dye auramine; a little resin, oil of aniseed, and collodion is placed on the violet tissue, a thin coating of gelatine insulating the two coatings. Thus, as will be understood, there are two sensitive tissues, one composed of red on a blue-green ground, and the other composed of yellow on a violet ground.

The sensitive surfaces of the two tissues are placed in intimate contact and firmly bound together, but in such a manner that the two sheets may be separated when desired.

The total sensitive tissue is placed under or in contact with the before-mentioned red positive and exposed to light, with the result that certain portions become bleached, and a black positive on a red ground is the result.

The sensitive tissue is then adjusted under the green positive, and exposed to light, and a combined effect of the green and red positive is formed. The tissue is next exposed to light under the violet positive, after which the tissue will then display a picture in the colours of the object photographed.

Four combination negatives are next formed from the tissue. The portion of tissue bearing the blue-green and red positive records is placed in contact with a photographic plate or other photographic surface, and covered with a green light-filter during exposure, and thus the red portions of the tissue do not affect the plate, which on development will give a negative from which the printing block for the red colour is made in the usual way.

In order to obtain a printing block for the blue colour, the same portion of tissue is placed in contact with a photographic plate or the like, and exposed with a red light-filter over.

The printing block for the violet colour is made in a similar way, using the other portion of tissue, and a green light-filter, the yellow printing block being obtained by using the same tissue, and a violet light-filter. The tissues carrying the positive records being thin, care must be taken in placing the proper surface in contact with the photographic plate or the like, so that the resultant negative is not reversed from that of the three original negative colour records.

Two claims are: 1. A process for the reproduction of four printing blocks for the reproduction of pictures in colours, by the combination of three negative records with a sensitive tissue wherein four colours are used.

2. In the reproduction of pictures in colour, as claimed, the application of four colours, red, yellow, blue, and violet, approximately corresponding to wave lengths 7000, 5550, 4900, and 4250 (multiplied by 10<sup>-7</sup> mm.) respectively. George Woodiwiss, Cullingworth, Bradford.

**ORTHOCHROMATIC PLATES.**—No. 17,452. 1907. The invention relates to the making of a non-screen plate, for which purpose a quantity of yellow dye, known as yellow filter K, manufactured by Meister Lucius and Brüning, of Hoechst-on-Main, under Patent No. 2,622,

of 1906, is added to and mixed with the emulsion, and the mixture so produced is applied to the plate or film, and allowed to dry thereon, and when dry the plate or film is ready for use.

It is found that by adding about 5 cc. of a solution of yellow filter K (containing about 1 gramme of colouring matter to 40 cc. of water) to 200 cc. of emulsion, a mixture is obtained which is in every way suitable for the purpose of this invention. Thomas MacWalter, Colnbrook, Granville Road, High Barnet, Herts.

**MERCURY-VAPOUR CYLINDER PRINTER.**—No. 21,209. 1907. One, or more, mercury-vapour lamps are supported so that they can be surrounded, or partly surrounded, lengthwise, by a type of copying apparatus, which consists of an outer flexible sheet, of any suitable opaque substance, such as cardboard, thin sheet metal, vulcanite, and an inner sheet of flexible translucent material, such as celluloid, between which sheets the drawing or tracing to be reproduced, and the sensitised paper, are placed, and brought into close contact with each other when the necessary curvature is given, to place them in position to surround, or partly surround, the lamp.

By these means the apparatus can be used either horizontally, as on a table, vertically as against a wall, or in any other desired position; a lamp of the ordinarily well known self-tilting type being preferably used in order to start the illumination.

In order to obtain the desired curvature of the flexible copying apparatus whilst surrounding, or partly surrounding, the lamp, suitable flanges, or metal bands of desired form of curve, are provided, on or by which they are secured in position and the required curve retained. Frederick Wilfrid Scott Stokes, 22, Victoria Street, London, S.W.; and Charles Jennings Hillman, 6, Dyer's Buildings, Holborn, London, W.C.

**DRAWINGS FOR REPRODUCTION.**—No. 14,858. 1907. The object of the invention is to furnish the best surface on which to execute drawings or designs, semi-opaque, grained, or otherwise, such that in the progress of the drawing the work may be erased or changed, and that afterwards the lines may be made immovable upon the surface, and the surface bearing the drawing or design may be easily converted into a transparent support.

Gelatine, Nelson's No. 2, is dissolved in water and poured on to finely ground glass warm, and allowed to set and dry upon the surface from twenty-four to thirty-six hours. The sheet of gelatine is then peeled off and is found to have a sharp grain and to be semi-transparent, well adapted to be placed over a drawing to be copied, and is flexible, and presents an ideal surface for the artist to work upon. The drawing may be erased at will, or scratched out, as may be done with a lithographic stone, or may be worked with a brush or with pen and ink, or as a mezzo tint, up to the next step to be described.

After the drawing is complete, the sheet of gelatine bearing the drawing is flowed over with flexible collodion, which permanently fixes the drawing, and at the same time renders the gelatine support transparent. Both sides of the sheet may be varnished as protection from moisture and handling. Having thus made the film transparent, and having fixed the photographically opaque lines, we now have a transparent positive, which may be applied to a sensitised copper plate or otherwise, used in making accurate reproductions upon suitable surfaces.

In producing an etched plate this drawing is placed in a printing frame, face to face with a coated copper plate, as in the usual half-tone work. Ozias Dodge, Norwich, New London, Conn. U.S.A.

**FILM PACKS.**—No. 19,864. 1907. This invention relates to an improved package of the kind in which a number of photographic films are held in a flat state in such a manner that any selected film may be exposed.

The improved package comprises an envelope, a body telescoping therein and open at the front and a stack of films having tabs for selective engagement of any individual film through the wall, and recesses for selective engagement of the remaining films through the wall of the envelope. The invention further relates to an improved holder adapted to contain a film package of this character and expose the selected film.

To dispense with paper sheets between the films is the principal object of the invention, and there has been embodied in the package and holder herewith illustrated, the idea of withdrawing all of the



films excepting the one to be exposed, which latter remains in the frame or body part of the package, while the other films are held in an envelope part and protected thereby from access of light, the end edge of the stationary or exposing film remaining in its place overlapping the withdrawn films, so that when the envelope is pushed back to close the packet the exposed film slides properly into place with respect to the rest of the films. Magnus Nicoll, 140, West-23rd Street, New York, U.S.A.

**THE CAMERAS.**—No. 22,697. 1907. The invention consists of a light platform from which one or more cameras may be supported, means for suspending the platform from the captive string of a kite or balloon or other accessory extending from a kite or balloon, elongated arms extending laterally from the supporting frame, and an elongated pendulum suspended from the ends of the steadying arms. The frame, its supporting means, and the arms are all made of light strong material, such as bamboo and aluminium, so that very little surface need be presented to the action of air currents. By providing an extremely long pendulum connected to the ends of the arms, the slight disturbing influence of air currents is counteracted and the platform and the photographic apparatus supported thereby will be maintained stable under any atmospheric conditions which may be met. All of the parts of the apparatus may be made of any desired materials, preferably such as will produce both lightness and strength. George Raymond Lawrence, No. 2,647, Magnolia Avenue, Chicago, Ill., U.S.A.

**THE CAMERAS.**—No. 9,433. 1907. One invention consists of an aeroplane or kite, having two parts joined together by struts. Each of these two parts contain sails, forming a rectangular box, open at both ends, and having a triangular extension on each side. The upright struts are held apart by cross stays, which are lashed in position, and are detachable to enable the machine to be rolled up when not in use. When the kite or aeroplane is stood on the ground with the struts in a vertical position, the horizontal plane is a trapezoid, having the angles at each parallel equal. The cord or wire which holds the above described kite or aeroplane captive is also provided with a clamp which will grip it, and which combines in itself the suspension for the camera, arranged so that the latter can maintain a predetermined angle in relation thereto.

Four struts are held together by cross stays and so arranged that when sails are added they form a rectangular box; that at top and bottom are open-ended. This represents in plan a figure composed of four straight lines, having two sides parallel to each other, and two sides of equal length joining said parallels with opposed inclination the one to the other, hereinafter termed a regular trapezoid, the struts being disposed at the angles of the said regular trapezoid.

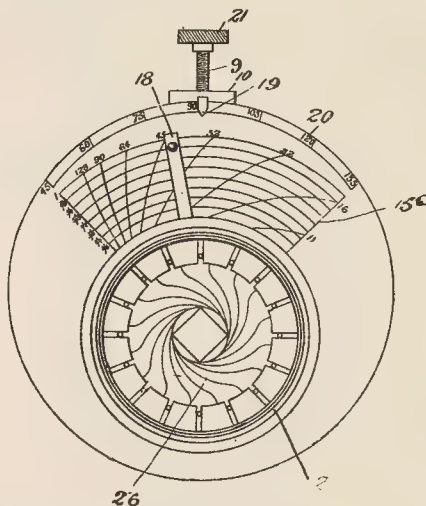
The cord or wire which holds the kite captive is provided with a clamp fixed to it.

The extension from this clamp is arranged to be attached to a camera in such a way that the camera in relation to the clamp may be maintained at any predetermined inclination. Sydney Thomas Williams, 54, Bouverie Road, Stoke Newington, London, N.

**DIAPHRAGMS.**—No. 4,914. 1907. In this invention a series of lines parallel to one another, and either straight or concentric, according to the type of movement of an indicator, are employed to represent in consecutive order, proportional differences in camera extensions, and therefore also, at the same time, scales of reproductions. Each of these lines are then marked where an indicator attached to the mechanism which actuates the lens diaphragm indicates apertures having the actual  $f$  ratios with which it is desired to work, and the several marks thus experimentally determined indicating on the several lines, the same  $f$  ratios are joined one to another forming lines of equal  $f$  ratios crossing parallel lines of equal scales of reproduction. All that is then required to obtain any  $f$  ratio with any extension, is to adjust the mechanism actuating the diaphragm, so that the edge of its indicator coincides with the crossing point representing the particular size of stop required and the actual camera extension.

When two or more sets of diaphragms are employed one of them is adjusted in the manner described, and the diaphragm, in addition to its cross lines and ratios, has divisions giving the actual

size in fractions of an inch, or other convenient unit, of the diaphragm in any position, the size being known, and the other set of diaphragms having each a pointer and division indicating the



actual dimension. they can readily be adjusted to the desired ratios.

The figure represents an iris diaphragm, and the appliance, each carrying a pointer moving over diagram or scale indicating the  $f$  ratio of the camera's extension, and principal focus, as well as the angle of the stop. Ernest Howard Farmer, 3, Coleraine House, Nassau Street, London, W.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Autochromes of Bluish Tones.

A question has been asked (writes M. Dillaye, in "Photography," at the request of Gaumont and Co.) as to the cause of the blue colouring which predominates in certain Autochrome pictures. The matter seems to me more than ordinarily complex, the predominance of the blue being attributable to very different causes, which appear to correspond with different shades of the blue tint. Under-exposure is one cause. In an Autochrome of white roses, which was badly under-exposed, the white petals were decidedly blue. In this case the blue was a deep tint approaching that of indigo.

The second cause is white light entering the camera. In this case the blue tint takes the appearance of a general violet fog, which shows itself both in the high-lights and in the shadows, but the blue is not as deep as in the previous instance, being more of an azure blue or Prussian blue tint rather than an indigo. The third cause seems to be connected with certain conditions of the lighting of the subject, and this appears to be the most frequent cause. The snow scenes that I have seen, amongst others, have manifested this very plainly. In such a case the blue is of an azure tint or ultramarine, and I cannot help thinking that in some way the defect in this case is connected with the colour-screen itself.

**READING PHOTOGRAPHIC SOCIETY.**—A photographic society has been formed in connection with the Liberal Club at Reading. Although confined to the members of the club, it already numbers twenty-three members, with a fair prospect of doubling this number as it gets into working order. The programme will include bi-weekly rambles, monthly competitions, annual exhibition, etc. The hon. secretary is Mr. W. G. Heather, of 45, Broad Street, Reading.

## New Books.

"Les Produits Chimiques purs en Photographie." Paris: Charles Mendel, 2 fr. 50.

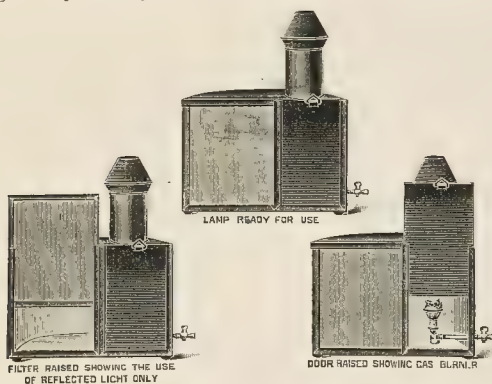
A very useful compilation of the properties of the chemical substances used in photography has been brought together in this form by M. Camille Poulenc. The substances are arranged in alphabetical order, and in each case brief information is given as to their properties, methods of identification, or testing for the most likely impurities to occur in them, and some hints as to their storage and preservation. A few lines are also devoted in each case to their photographic applications. The book includes a number of substances and data which we do not usually find in volumes of this kind already published, and on this account we regard M. Poulenc's work as a really useful, if modest, addition to photographic literature.

**PRACTICAL BOOKBINDING.**—An excellent manual of bookbinding written by a director of classes in the craft, Mr. W. B. Pearce, has been published by Messrs. Percival Marshall and Co., price 1s. net. It forms No. 7 of Marshall's "Practical Manuals," and provides in its 130 pages very precise and practical directions for the amateur bookbinder. One respect in which the author could be commended is for the almost exclusive use of photographic illustrations of the actual operations involved. Half-tone reproductions of the tools and the methods of using them figure on almost every page.

## New Apparatus, &c.

Boots' "Safelight" Lamp. Sold by Boots, Ltd., 29-31, Farringdon Road, London, E.C.

Messrs. Boots, the well-known cash chemists, have placed on the market an improved type of dark-room lamp, examples of which have been sent us for trial from the firm's city offices and warehouse, 29-31, Farringdon Road, London, E.C., to which establishment inquiries as to the trade supply of the lamps should be addressed. The lamp is made in three distinct patterns, one for a paraffin lamp, another for incandescent gas, and a third for electric light, but the principle of all three is the same, namely, the use of reflected light only for the illumination of the working bench and dark-room. Each lamp is built in a semi-circular shape, the light being placed to one side. As a result the illumination which is given by the light filter is of a particularly even character



throughout, whilst the construction allows the lamp to be very easily got at, simply by raising the door, which is placed alongside the light-filter on the front of the lamp. This latter, of course, will serve also for a supply of white light to the dark-room when desired, and for the printing of bromide papers, lantern slides, etc. The lamps are made to take a light filter 10 x 8 in. Those supplied are the excellent manufacture of Messrs. Wratten and Wainwright, series 0, 2, and 3. The first is a bright orange light suitable for bromide work, lantern plates, and slow negative plates; Series 2 is a deep ruby filter for the most rapid ordinary and ortho-

chromatic plates; whilst Series 3 is the dense green safelight which Messrs. Wratten have worked out principally for panchromatic and red-sensitive plates. The construction of the lamps themselves is one which makes for convenience in the dark-room, and we are glad to see a construction which we believe has received commendation from practical workers placed upon the market in such admirable shape. Our own trials of the lamps and filters have satisfied us of their satisfactory character for the purposes for which they are put forward. The illustrations show the pattern of lamp containing incandescent gas, but the other two patterns are substantially identical with it, save for the slight differences necessitated by the electric and paraffin illuminants. The prices of the lamps are as follows:—Paraffin, 9s. 6d.; incandescent gas, 10s.; electric incandescent, 10s.; in each case with one of the Wratten and Wainwright "safelights." Extra safelights are supplied of each of the three series at 4s.

## New Materials, &c.

**HARDTMUTH RETOUCHING OUTFITS.**—Both amateur and professional users of retouching outfits frequently consult us as to convenient tools to employ in their work, and it may, therefore, be of service if we take the opportunity to refer to the excellent materials supplied by the famous Vienna firm of Hardtmuth, which for nearly 120 years has been making pencils, and has at its disposal resources and information which, perhaps, no other firm in the same business can equal. The brushes, pencils, stumps, and crayons are put up in convenient sets, suited to those using them for negative or positive work. Thus the shilling set of four crayons for black-and-white working-up of bromides and similar prints is a useful outfit, whilst a more complete set of materials is obtainable with the black chalk supplied separately and used in holders. Similar sets are put up with an equally nice recognition of the wants of negative retouching, and we cannot do better than refer our readers to their dealers, who will be able to supply them with both the sets and single pencils and other specialties.

## CATALOGUES AND TRADE NOTICES.

**MOULDINGS, FRAMES, AND MOUNTS.**—A most comprehensive list of mouldings, picture-frames, mounts, and cardboards of every description is that just newly issued by Messrs. J. Epstein and Co., 10, Rupert Street, Bristol. It is a profusely illustrated, 56-page catalogue from which the professional can judge for himself the immense variety manufactured by Messrs. Epstein in the way of mouldings and made-up frames. Some very choice designs are among the veneered, Florentine, oak, and antique mouldings, and all the prices appear to be placed at very moderate figures. The same firm also supplies picture-rail mouldings, and even publishes framed pictures of popular subjects. The list includes, too, mounting sundries, such as stains, cardboards, binding papers, medals, diamonds, screw eyes, and picture cord. The list is certainly one to be kept for reference. It is sent post free for six penny stamps.

FOR PHOTOGRAPHING the Winter Palace at St. Petersburg recently an Englishman, Mr. Archibald Cardwell Barker, was arrested and taken to the police station, but was released after inquiries.

"NADAR," photographer, dramatist, aeronaut, and black-and-white artist, who was one of the best-known figures on the boulevards under the Second Empire, and who is still hale and hearty at 88, has just sold for an almost nominal sum to the Bibliothèque Nationale a unique collection of caricatures which he took over fifty years to form. About half of them (writes the "Daily Telegraph" correspondent) are by himself, and the others by dead artists of his generation, of which he is almost the sole survivor. The collection includes 149 drawings, and its range is surprising, for it extends from George Sand, of whom Nadar was a devoted admirer, Henri Murger, Bandelaire, Theodore Banville, Theophile Gautier, Alfred de Vigny, Alfred de Musset (whom Nadar did not like), Michelet, to men yesterday and to-day, like Guy de Maupassant and the artists Zola and Horgnignies. All his sitters Nadar knew, or knows, personally.



# Meetings of Societies.

## MEETINGS OF SOCIETIES FOR NEXT WEEK.

FRIDAY, MARCH 20.

ographic Survey and Record of Surrey. "A Naturalist's Ramble." E. A. Martin, F.G.S.  
 thian Photographic Society. "Finistere." W. A. Meyrick.  
 London Photographic Society. "Members' Lantern Slides."  
 Geo. Lamley, F.R.P.S.  
 on-under-Lyne Photographic Society. Rotary Carbograph Paper.

SATURDAY, MARCH 21.

ographic Survey and Record of Surrey. "Some Delightful Surrey Walks." Hector Maclean, F.R.P.S.

MONDAY, MARCH 23.

ord Photographic Society. Y.P.U. Slides.  
 ough and District Photographic Society. "Pinhole Photography." E. Adnams.  
 ampton Camera Club. Lantern Slide Competitions.  
 outh District Photographic and Scientific Society. "Development." E. Rogers.  
 Photographic Society. "Further Rambles with a Hand Camera." E. Oliver Green.  
 send and District Photographic Society. "Bromoil." J. A. Mitchell.  
 sboro' and District Photographic Society. Rotary Carbograph Paper.

TUESDAY, MARCH 24.

Photographic Society. "A Review of the Theory and Practice of Modern Three-Colour Illustration." A. J. Newton.  
 ey Photographic Society. "A Few Dutch Pictures." E. T. Coombes.  
 Spotting." Wm. Rawlings.  
 y Photographic Society. "Photographic News Prize Slides."  
 ing Camera Club. "Principles of Composition." Arthur C. Osborn.  
 Photographic Society. "Are Orthochromatic Plates Best for Landscape Work?" J. W. Charlesworth.  
 on-Trent Natural History Society. "Enlarged Negatives, &c."

WEDNESDAY, MARCH 25.

ord Photographic Society. "Choice of a Plate." E. H. R. Hillsworth.  
 gh Polytechnic Photographic Society. "Some Old London Churches—their Objects of Interest and Curiosities." A. Bedding.  
 Middlesex Photographic Society. "Retouching." G. F. Barwell.  
 on Camera Club. "Odds and Ends and Home-made Apparatus."  
 Camera Club. "Carbon Demonstration by a Carbon Worker."  
 gham Camera Club. "Exeter Cathedral, Jervaulx Abbey and Fountains." Wm. Mosley.  
 Suburban Photographic Society. "Architectural Photography." Edgar Bull.  
 y Photographic Society. Rotary Carbograph Paper.

THURSDAY, MARCH 26.

Photographic Society. Short Papers by Members.  
 and Camera Club. "Yorkshire, Historic and Picturesque." Geo. Hepworth.  
 worth Photographic Society. Midland Photographic Federation Slides.  
 and Camera Club. "Oxbrome." T. Manly.  
 tm Club. "In the Path of the Eagles; Elba, as it was, and is." Rev. T. Norgate.  
 and Provincial Photographic Association. "Through Catalonia by Cycle." Dalgano.  
 ol, Amateur Photographic Association. "The Foothills of the Eastern." J. T. Ridley Johnston.  
 n and District Photographic Society. Rotary Carbograph Paper.  
 London Photographic Society. "Intensification and Reduction."  
 Farsley and Calverley District Photographic Society. "Carbon." Mr. Morgan.

## ROYAL PHOTOGRAPHIC SOCIETY.

ING held March 17, Mr. Geo. Lamley in the chair. A lantern e, illustrated by many excellent slides, was given by Mr. Dunning, whose discourse proved most interesting and og and was followed by a somewhat animated discussion.

TRAL TECHNICAL COLLEGE PHOTOGRAPHIC SOCIETY.—At a l meeting of the society, held on March 11, when Mr. V. H. ney took the chair, Mr. E. Clifton, F.R.P.S., of Messrs. Dallmeyer, Limited, delivered a lecture on "The Practice of otography," which, illustrated by lantern slides and examples es, was of a most interesting nature, and was greatly appre- by all present. After a short discussion, a vote of thanks to liffon was unanimously carried.

TEBEN PHOTOGRAPHIC EXHIBITION.—The next northern exhibi- ill be held in the Manchester City Art Gallery during the of January, 1909. Mr. S. A. Coulthurst will act as hon. sec., r. A. T. Lakin as chairman, supported by Rev. H. W. Dick r. J. J. Phelps as vice-chairmen, and Mr. C. Dawson as treasurer.

Our readers will be now fully familiar with this great series of successful exhibitions held alternately in Manchester and Liverpool by the Manchester Amateur Photographic Society and the Liverpool Amateur Photographic Association. Last year's success at Liverpool is fresh in our memory, and we are looking forward with confidence to Manchester in January, 1909.

WOOLWICH PHOTOGRAPHIC SOCIETY.—A lantern evening was held on Thursday in last week, 12th inst., when a member, Mr. J. Borthwick Panting, F.R.P.S., read a paper and showed slides from the work of Mr. H. W. Bennett. The subject was "A Visit to the English Cathedrals." Various periods of architecture were explained with plans and interiors of different cathedrals illustrated upon the screen. Mr. W. H. Dawson proposed a vote of thanks to the lecturer.

## Commercial & Legal Intelligence.

CANVASSING FRAUDS.—At Consett, on March 13, Myers Woolfston and Lewis Brazil were charged on a warrant with obtaining 2s. by false pretences from Joseph Davison Potts, at Castleside, on January 2 last.

Superintendent Murphy stated that the accused travelled about the country and asked householders to let them have small photographs to be enlarged, at the same time obtaining a sum of money on deposit. They got 2s. from the prosecutor, and promised to let him have the enlarged photograph the following week, when the balance of the money was to be collected. Mr. Potts had neither seen nor heard of the defendants since. There were hundreds of similar instances against the defendants. There were forty cases in the village of Castleside alone. Defendants represented that they were canvassing on behalf of the "Fine Art Photographic Company." He (the superintendent) was not in a position to say at present whether such a company was in existence or not.

Prisoners stated that at the time they were employed by a Mr. Miller, who had two or three addresses, but was then carrying on business at 65, Princess Street, Bishop Auckland. They received 9d. commission on each order. In this particular case they did promise the photographic enlargement by the following week, but since then they had ceased to work for Miller, and were travelling for another firm.

Prisoners were remanded.

THE ESTATES of John Donaldson Edward, photographic dealer, carrying on business at 63, Princes Street, Edinburgh, and residing at 13, Bank Street, Edinburgh, were sequestrated under the Scottish Bankruptcy Law on March 5.

EMPIRE BIOSCOPE COMPANY.—At a meeting of members of the Empire Bioscope Company, Limited, held recently, a resolution was passed that the company be wound up voluntarily, and that Mr. Joseph Hood, of Cecil Chambers, Strand, W.C., be appointed liquidator. Creditors should send particulars of their claims to the liquidator by April 20.

THE VALUE OF A WIFE.—At the Westminster County-court on Monday last, Ephraim Starling, of Newmarket, an employee of a Newmarket trainer, claimed damages for the loss of his wife through the alleged negligence of the Gaumont Company in giving a cinematograph exhibition.

Mr. Joseph, counsel for plaintiff, said the instrument was placed near the folding-doors, which formed the only exit, and half of which was only in use. The operator dropped on the floor what looked like a piece of chalk. It was alight, and the operator tried to stamp it out. This brought the lantern down, and it burst into flames. There was a crush and rush in which plaintiff and his wife, to whom he had only been married a year, were separated. In the crush the poor woman was pressed into the flames. When she was brought out to her husband her clothes were burnt off her, and she was terribly injured, her death taking place shortly after her arrival at the hospital. The lantern was mounted on loose boxes, was placed near the only exit, and was not protected by any screen. Plaintiff said defendants paid the expenses of his wife's funeral, which amounted to £11. He had not asked them to do so.

The defendant's counsel suggested that the film caught alight and was carried out of the hall. Then a cry of "Fire! Fire!" was raised, there was a stampede, and the lantern was then knocked down. Captain Simpton, Newmarket Fire Brigade, gave evidence that one of the folding-doors was bolted, and the two cylinders of gas-oxygen and hydrogen—were leaning up against the bolted door. The cylinders fell, and that was the cause of the people being burnt. When the cylinders fell they became disconnected with the pipes and caught light from the burning films.

The jury found defendants were negligent, and awarded plaintiff £50.

**FRAUD BY AN ABERDEEN PHOTOGRAPHER.**—At Aberdeen, on Saturday last, Robert Froest, photographer, 5, Canal Street, Aberdeen, was sentenced to forty days' imprisonment for fraud. The indictment set forth that on February 27, by means of an advertisement in "The Stage," under the false name and address of "Moir, 41½, Union Street, Aberdeen," he pretended that he had for sale certain cinematograph films at the price of £5 10s., but which were really worth double the price, and which would be sent to likely purchasers on approval on receipt of a deposit in security. The advertisement having come under the notice of Carl Mannheim, variety entertainer, 22, Wesley Street, Prudhoe-on-Tyne, Froest thereby induced him to send him by post a letter addressed "Moir," etc., containing a cheque for £3, being deposit in security for the inspection or approval, with a view to the purchase or return of the films, and, failing purchase, to return the cheque, which sum Froest appropriated.

## News and Notes.

**COPYRIGHT IN AMERICA.**—A Supreme Court ruling relative to the copyrighting of pictures has just been made which affects the interests of advertisers, publishers, and photo-engravers, and should have their attention. By the new provisions a picture need not have a copyright notice painted on its surface in order to be protected from reproduction. It has commonly been ruled, before this, that if a painting did not show the notice "Copyright" on it, anyone was at liberty to reproduce it in any form desired. Now the published copies which are to be protected alone need be so marked.

The suit at law which resulted in the above finding was one wherein the proprietor of the Berlin Photographic Company sought to prevent the American Tobacco Co. from using in its business reproductions of Sadler's painting, entitled "The Chorus." The Berlin Company purchased from Sadler the rights of reproduction and secured a copyright. Afterward the picture itself was placed on exhibition in the Royal Academy, the copyright reservation being entered in the gallery sale book, though not placed on the canvas. The original afterwards found its way into a private collection and was reproduced by the tobacco company without the consent of the owners of the copyright, the contention being that absence of the copyright notice on the canvas left the painting open to reproduction by anyone. This was opposed and the court supported such opposition, which claimed that "the statute could not have intended that the original picture be disfigured with the notice." Justice Day, in his decision, said:—

We think it was the object of the statute to require this inscription not upon the original painting, map, photograph, drawing, etc., but upon those published copies concerning which it is designed to convey information to the public, which shall limit the use and circumscribe the rights of the purchaser. It would seem clear that the real object of the statute is not to give notice to the artist or proprietor of the painting or the person to whose collection it may go, who needs no information, but to notify the public who purchase the circulated copies of the existing copyright in order that their ownership may be restricted. There does not seem to be any purpose in requiring that an original map, chart, or painting shall be thus inscribed, while there is every reason for requiring the copies of editions published to bear upon their face the notice of the limited property which a purchaser may acquire therein.

Hereafter responsible publishers, photo-engravers, and lithographers will not reproduce an unmarked picture without securing rights to do so from the artist.

**ARCHITECTURAL AND TOPOGRAPHICAL SOCIETY.**—This society has been founded to make and publish a survey of objects of architectural and archaeological interest in the British Islands. It is proposed to collect and keep for reference in the office of the society measured drawings, sketches, and photographs, together with an outline map showing the positions of places described or illustrated. Those who have the control of ancient buildings are requested to stipulate that copies of any measured drawings or photographs and a record of any alterations or restorations shall be deposited with the society. The publications of the society will include a quarterly journal, to be called the "Architectural and Topographical Record." Each issue of this will contain minute descriptions of ancient buildings, heraldry, and cognate matters within the scope of the society. The hon. secretary is Mr. Wilfrid Travers, of 33, Old Queen Street, Westminster, S.W.

**THE SCOTTISH NATIONAL EXHIBITION, Edinburgh, 1908.** Fine Art Section (Photography).—Those interested in above are invited to apply to the Manager, 45, York Place, Edinburgh, for entry forms, which must be returned with exhibits by April 1. The sections are pictorial, scientific, and historical.

**THE POET LAUREATE** of the "B.J." (an unpaid official we hasten to say) has joined the Convention, so he makes it the subject of his first contribution to our pages:—

The Brussels Convention will be  
The biggest you ever did see,  
For when asked to declare  
If they mean to be there  
The members all answer "oui, oui!"  
And they're practising French, so they say,  
For two or three hours every day,  
So that when they get there  
They may make their friends stare  
With their "très parfait parlez Français."

**THE LATE MR. HORT PLAYER.**—Mr. Jacob Hort Player, whose death occurred suddenly on February 24, from quite early days had made a special study of chemistry, and was responsible for various discoveries facilitating the manufacture of phosphorus. His improvements in the manufacture of this substance realised a fortune of something like £200,000 in seven years. His ingenuity was also devoted to the improvement of fog signalling at sea, in which direction he made a useful and important invention. His services to the scientific world were recognised by his being made a Fellow of the Chemical and Geological Societies. At the time of his death Mr. Player was seventy-four years of age.

**PARTNERSHIPS DISSOLVED.**—The partnership between William Honeychurch White and Thomas Naylor, carrying on business as photographic apparatus manufacturers at 4, Roscoe Street, Bunhill Road, and 24, Denmark Street, Charing Cross Road, W.C., has been dissolved by mutual consent. All debts will be received or paid by Thomas Naylor.

The partnership between Arthur Melbourne Cooper, of Bedford Park, St. Albans, Herts, photographer, and Frank Hawkins Clarke, of Bedford Park, St. Albans, electrical engineer, carrying on the business of cinematography at St. Albans, under the style of the Alpha Trading Company, has been dissolved by mutual consent. All debts will be received or paid by A. M. Cooper.

**"BRIT. J. PHOT."**—The American Chemical Society send us a list of the abbreviated titles used by the Editors of their "Journal" in giving abstracts of papers. "Brit. J. Phot." (THE BRITISH JOURNAL OF PHOTOGRAPHY) is the only British photographic journal in the list.

**A PHOTOGRAPHIC SOCIETY FOR GRANTHAM.**—The art of the camera has numerous followers in Grantham, but up to the present little seems to have been done in the way of combined action or exchange of views on this interesting and useful subject. However, all this is to be changed, and a meeting was held at the Y.M.C.A. on Monday evening last with the view of forming a photographic society. Mr. T. Stow took the chair, and amateurs and others interested in photography were cordially invited to be present.

**WESTMINSTER CITY COUNCIL** has accepted the tender of Messrs. Sale and Beach to carry out what photographic work the authorities may require during the year to end March 31, 1909.



The household water here is very hard; so much so that I had a large tank put up for rain-water. This first filters through a smaller tank in which trays containing gravel and charcoal are

arranged, and this water is laid on in pipers to my workroom, and I use it almost altogether for photographic purposes, boiling it well for making up solutions. I use a plain hypo bath from 2 oz. to 3 oz. to the pint for fixing my bromide, throwing it away each time.

There are a good many gas connections in my workroom (and sometimes a stray leak!), and there is also a large oil lamp or stove lighted all day in winter to heat it; and, of course, it is here the prints are dried. If, however, burning or unburnt fumes were the cause (as has been suggested), why does it not affect carbon tissue, for carbon work proper, which I constantly dry at night in this same room after sensitising?—Believe me, yours faithfully,

Deer Park, Castleknock. Co. Dublin,

H. PERRY.

March 14, 1908.

[The effect you describe seems very unusual, and the only cause we can suggest is imperfect fixing. Try a hypo bath with 4 oz. to the pint, and fix for a longer time, or else use two fixing baths. A print that is not perfectly fixed or not thoroughly washed will not bleach properly as a general rule. As in your case it is the high-lights that refuse to bleach, we suspect imperfect fixation to be the prime cause.—Eds., "B.J."]

### LENS CURVES OTHER THAN SPHERICAL.

To the Editors.

Gentlemen,—My attention has been called to the "Patent News" in the "B.J." of January 17, p. 45, in which there is a description of a method for making lenses by the production of the required curve directly on the glass during its revolution on a lathe. I read it with much interest, because both the instruments for producing the curve and the method of making the lens were known and used by the ancient Greeks.

The Greeks produced their curves "By the revolution of a plane governed in its motion by two powers of control." These powers

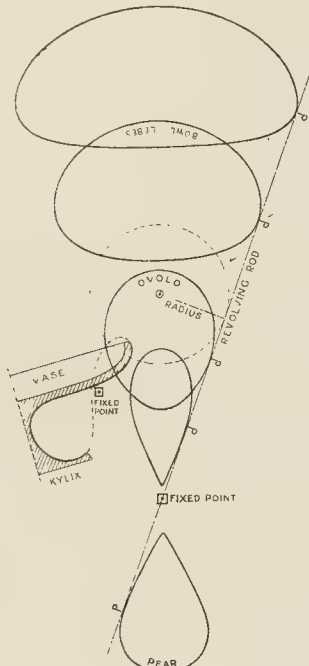


Fig. 1.

were three in number:—1. A fixed point (.). 2. A fixed straight line (!). 3. A fixed circle or circular motion (o). By the combination of these powers of control six instruments can be made:—

No. 1. ..	No. 4. .o
No. 2. .!	No. 5. !o
No. 3. !!	No. 6. oo

The instruments drawn and described in the paper I refer to, Fig. 2, p. 46, is No. 2, and Fig. 7 is No. 4. No. 2 was used by the

Greeks for drawing one of their anthemions. No. 4 is a very useful instrument, used by the Greeks and Egyptians for vase lines, oval mouldings, capitals, etc. The accompanying diagram shows some of the forms it produces. There is abundant evidence that the Greeks used their drawing instruments directly on their work. The illustration taken from my "Handbook of the Greek Method" will explain how this was done in the making of vases. The instrument used is No. 6 (oo), which is the highest form of simple controlled motion, and it has extraordinary powers. The principle for the Greek method of making a vase or other solid form may be described thus:—"If the same instrument which is used singly on a plane surface be duplicated and united by a rod passing through the drawing points, this rod will describe upon any solid surface

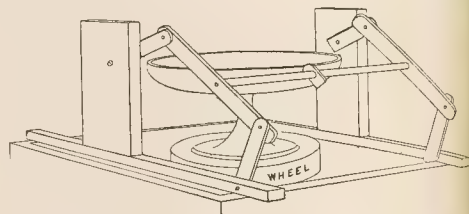


Fig. 2.

the same curve as would be described by the drawing point on paper. The beauty and accuracy of Greek works are, I believe, largely due to the employment of this method. It is not absolutely necessary that there should be two distinct instruments, so long as there is sufficient thickness in the rods used to ensure stability. H. Gk. M.

It did occur to me in my investigations of Greek forms that the method might be used to make lenses, but as I had no knowledge of the particular curves required I did not carry the investigation further.

It will be very interesting to see what will be the practical result of this present use of the Greek method.

DANIEL WOOD.

Author of "A Handbook of the Greek Method," published in 1889.

March 16, 1908.

### MARKINGS IN TANK DEVELOPMENT.

To the Editors.

Gentlemen,—I was very much interested in your answer to my query of "F. H. W." in your issue of February 21, having considerable trouble with the markings referred to when I took up tank development, and I send you herewith a film which was developed one hour in edinol sodium hydrate, and which you will see, shows them very plainly.

While I have made no very thorough study of the matter, I am convinced that the trouble is more pronounced with some developers than others, and with greatly diluted solutions than more concentrated ones. With the regular twenty-minute Kodak formula pyro I have found no perceptible trace of them.

I had come to the conclusion that these dense streaks or marks were due to a sort of physical development or intensification—something after the nature of that which takes place in wet-plate development—and were built up of silver in some form absorbed by the developer from the surrounding partially or under exposed surface, which, diffusing through the solution, would doubtless cause the case of stand development the dense streak, and the halo with tray development. Of course, this is hardly more than a supposition, and is simply the result of ordinary observation, but the theory advanced by Messrs. A. and L. Lumière, and A. Seyewetz in explanation of their "Process of Photographic Development for the Production of Images of Fine Grain," seems to indicate the possibility of something of the sort taking place. In fact, an attempt to utilise their idea for tank development with paraphenylene diamine—one of the reducing agents



mended in their paper—led to markings so very pronounced as to make it advisable to abandon further experiments in this direction.

In negatives by the wet-plate process the peculiarity is always more or less apparent, and in "half-tone" negatives it has the effect of closing up the dots in these places, which causes considerable trouble in etching, as there again there is a similar tendency, as during this action the dots reduce proportionately faster where the high-lights adjoin the dark tones, owing, doubtless, to a somewhat similar cause as that suggested by you in the case of development, in your answer to "F. H. W."

In making line (black-and-white) negatives on wet plates—where it is desirable that the whites should be as dense as possible—the theory that the image is built up of free silver from the unexposed parts is taken advantage of by surrounding the copy—when it is of such a size that the margins come within the plate—with black paper, or something of a like nature, so as to have as much unexposed surface as possible to aid in building up the image.

Another difficulty I have experienced in stand development has been that unless the plates are turned end for end several times, the lower end of the negative would be considerably denser than the other. I have partly concluded that this is owing to bromide being taken up by the developer from the plate, and gradually settling towards the lower portion of the solution. A tank made with a tight-fitting cover; so that it could be turned upside down, something after the style of the Kodak film tank, would be a decided convenience. I trust that any maker adopting this idea will send me one as a compliment for suggesting it. Perhaps an ideal tank would be one so constructed as to keep the solution or the tank itself in constant motion during development.

As development by the tank method seems to be constantly increasing, I think it would well repay some one with proper facilities and the necessary amount of time at their disposal to give the matter a very thorough study.

W. H. THOMPSON.

Suite 17, "The Linden," Hartford, Conn., U.S.A.

## THE FIXING BATH IN AUTOCHROME WORK.

To the Editors.

Gentlemen,—I venture to write to you to ask if you could help me in a difficulty I have met with in working the Lumière Autochrome process. I find I get no signs of frilling at all through all the processes as far as the fixing bath, but in the first washing after the whole film is covered with star-like blisters immediately, and the film eventually comes off (I wax the edges before developing and they hold on). I tried diluting (five times) the hypo bath with water and no result.

Now, it occurs to me that fixing is perhaps unnecessary, as first development is entirely eaten away by permanganate and acid bath, and the remainder of silver bromide is developed right through to the other side of film. There then only remains perhaps slight traces of silver from the intensification process, and with pure water this would be very little. However, as it would be carbonate or chloride of silver from salts in the water and both are soluble in very weak ammonia, I tried this, but however weak, I found at this stage removed the film in exactly the same way as the first washing with hypo. Can you inform me if fixing is really necessary? It seems to me not. My results have been excellent; but, if fixed, all ruined, while those unfixed are very good.

I should be glad if you could tell me the cause and cure for this trouble, if possible.

I use solutions and washing water all at temperatures as given, and all solutions made up exactly to formulae.

Thanking you in anticipation, believe me, faithfully yours,

A. WINTON GOUTCHER.

Ceres Hotel, Ceres, Cape Colony, S.A.

February 25, 1908.

Your trouble seems to be one of the varieties of frilling that has caused so much annoyance with the early batches of plates. Fixing is certainly advisable after intensification, but it is not safe to wash under the tap directly after fixing. Simply immerse the plate in still water for a couple of minutes, then rinse gently by holding the plate with water from a measure and resoak in fresh

clean water for a minute. Repeat this two or three times and then dry. A too violent method of washing is the only cause we can think of. Possibly a reduction of the alcohol in the first developer will help somewhat. We recommend one-quarter of the quantity given by Lumière, the deficiency being made up with water.—Eds., "B.J."]

## Answers to Correspondents.

\* All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.

\* Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.

\* Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., 24, Wellington Street, Strand, London, W.C.

\* For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.

### PHOTOGRAPHS REGISTERED:—

W. G. D. Busby, 122A, Chepstow Road, Newport, Monmouthshire. Photograph of Newport (Mon.) Postal Staff, 1908.

A. McNab, 8, Battle Place, Langside, Glasgow. Photograph entitled: "Inquisitive pussy."

N. Faithfull, The Studio, Gort, County Galway, Ireland. Photograph of the Peterswell Hurling Club. Galway Champions.

FLASHLIGHT.—Yes; two shallow tin troughs form a convenient arrangement. We should advise about  $\frac{3}{4}$  oz. of powder with lens at  $f/8$ , and ultra-rapid plate. The readiest means of firing is to lay the end of the trail on gun-cotton (from your chemists), and fire the cotton with a taper.

F. C. BRAY.—1. Chrome alum solution 7 oz., hypo solution 7 oz., sodium acetate 150 gr. A 50 per cent. solution of hypo is one containing 1 oz. of hypo in 2 oz. (fluid) of the solution. Therefore the bath as made is half this strength, i.e., 25 per cent.—not over-strong. 2. We should check the action of the bath by testing it with a plate; a waste plate will do. It should become completely clear in, say, ten minutes. 3. We should not regard the bath as giving such great hardening action, but you might try a longer immersion of the prints.

COPYRIGHT.—1. Suppose A photographs group at his own risk and enlarges a figure out of it, reduces that enlargement to cabinet size, registers it, and sells it to the public; B copies that cabinet and makes an enlargement and sells it. Can A sue B for infringement of copyright? 2. A sold copies of the group to those in the group. Does this make any difference? 3. If A was engaged to take the group, and a number of copies were guaranteed at a quoted price, A then made an enlargement of one figure and reduced it to cabinet, and registered it and sold copies, B comes along and makes an enlargement from that cabinet and sells it, can A then sue for infringement or not?—BRIGHTON.

1. Certainly he can. B has no right to copy it. 2. It makes no difference. 3. In these circumstances A has no copyright in the photograph or any portion of it. He was paid, or expected to be paid, for his work, and the person guaranteeing him the copies to be purchased could, we should say, establish proprietorship in the copyright. A should obtain the assignment of it from this person.

ASSIGNMENT OF GOODS.—Can a practising photographer who has made an assignment of his goods on behalf of creditors claim as working tools an enlarger, a 1-l camera, and a half-plate camera which he needs to earn a living?—WORKING TOOLS.

No, decidedly not. You have assigned your goods for the

benefit of your creditors, therefore they are theirs, and you have no claim to any portion of them.

**A. WILDMAN.**—You should apply to an expert, such as Mr. Augustin Rischgitz, The Studios, Linden Gardens, Bayswater, W.

**T. S. (Hallow).**—We think you could obtain a material such as you describe from Messrs. Burnet, Long Acre and Garrick Street, W.C.

**P. W.**—Let them soak in a mixture of spirit of salt (1 part) and water (10 to 20 parts) in an earthenware pan or dish for a day or so. The films can then be easily scrubbed off.

**C. C.**—We doubt if there is one. You might apply to the L.C.C. School of Photo-Engraving, Bolt Court, E.C., or you might get private lessons from Mr. E. W. Foxlee, 22, Goldsmith Road, Acton, W.

**TROPICAL.**—The general impression seems to be in favour of the Argentine or Canada. In either country you should be ready to rough it and to travel about from place to place, otherwise you cannot expect to trade with the scattered population.

**EXPERIMENTOR.**—The fastest plate is usually not the finest in grain, but the very fastest plates are now practically as fine in grain as those half the speed. You can be guided by the Watkins speed list.

**A. E. O.**—You should use distemper colours. We must refer you to the article in our issue of February 1 of last year for the directions for making the mixture and applying it.

**STUDIO QUERY.**—I have a room at my house which I want to use for photography, but as I cannot get the lighting that I should like, I should be glad if you could give me any suggestions to improve same. I have sent a rough drawing of the room, and also the amount of light from windows, and have sent a few samples of the results I have got, in which you can see the faults. It is not possible to get any top light, yet there seems to be a lot of light admitted. I have got the walls and ceiling white-washed, and have used a calico reflector. The photograph No. 1 was taken at 11 a.m., No. 2 and 3 at 2 p.m., and No. 4 at 4.30 p.m., during last week on a dull day. Any assistance that you can give me through the medium of your valuable paper will be gratefully received by, yours faithfully,—**LIGHTING.**

In such a room you should get excellent portraits without difficulty. Many would term it almost an ideal studio for an amateur. We should advise you to stop out all the light from the 6-ft. window, as that is of no use, and would tend to produce false lights. The sitter should be placed more in the middle of the room than shown in the sketch, and the background somewhat in the angle in the 6-ft. angle recess, the camera being placed nearer the window. A good deal of the light at the camera end may be curtailed off with advantage. We may tell you that the chief fault with the examples sent in is bad photography; they are all much under-exposed. Had they been exposed double or three times as long as they were they would all have been much better.

**PULP BOARDS.**—I have a lot of pulp glazing boards, and they are very badly scratched. I should be much obliged if you would give me the names of one or two firms where I can get them re-polished. —**R. W. BROWN.**

We know of no firms that make a feature of re-polishing pulp boards. We should advise you to communicate with the makers of those you have, or the dealer who supplied you with them. If they are, as you say, badly scratched, we doubt if they can be done much with.

**RED ENVELOPES.**—It is evident you must abide by the ruling of the Postmaster-General. If you must use a non-actinic envelope you can select a yellow paper or dark brown, which would answer equally well.

**FIREPROOFING FABRICS** (Reply to "Chemical").—Soak in alum 8 oz., ammonium carbonate  $2\frac{1}{2}$  oz., boric acid  $1\frac{1}{2}$  oz., borax  $1\frac{1}{2}$  oz., water  $2\frac{1}{2}$  quarts.

**PINACHROME.**—1. Can you tell me of any published formula for the pinachrome printing plate? 2. Are special dyes required for use with same? 3. Where are the materials to be obtained?—**S.**

The formulæ have not been published. See the articles in the

"B.J.," October 14 and 21, 1904. 2. Yes. 3. They are not now on the market.

**FERRO-PRUSSATE IMAGE.**—As the gradation obtained by the action of light on the bichromates is remarkable for its evenness throughout the scale, while that of a ferro-prussiate image is decidedly poor in this respect, it would seem to me that if one could convert the former image into the latter it would be a distinct advantage in cases where an evenly graded scale in ferro-prussiate is required. Can you tell me how to do this?—**THREE-COLOUR.**

Ferric ammonium citrate, 10 per cent. solution, 2 oz.; potassium ferricyanide, 10 per cent. solution, 2 oz.; acetic acid, 10 per cent. solution, 20 oz. The well-washed bromide prints are immersed in this bath and well washed until the high-lights are clear. The image is intensified by this treatment.

**TENDER ACCEPTED.**—The Asylums Committee of the London County Council has accepted the tender of W. Butcher and Sons for the annual supply of photographic plates, papers, and sundries.

**PHOTOGRAPHIC TEACHER FOR L.C.C.**—Some time ago the L.C.C. authorised the appointment at the Trade School for Girls of a teacher of photography for six attendances a week at a salary of £110 a year, and of an operator in photography for twenty attendances a year at a rate of £1 1s. an attendance. The consultative committee to which the applications were referred have reported that two of the candidates who applied for the post as teacher of photography are quite competent to fill both posts if appointed for whole time. The Education Committee have concurred in this suggestion, favouring the appointment of a whole-time teacher at a commencing rate of pay of £110 a year, rising by annual increments of £10 to £130 per year instead of the previously approved arrangement, pointing out that by this means a saving will be effected of £21 the first year, £11 the second year, and thereafter savings of £1 a year.

**CINEMATOGRAF EXHIBITIONS AND THE HOME OFFICE.**—The L.C.C. Theatres and Music-halls Committee report the reception by the Home Secretary (Mr. H. Gladstone) of a deputation to urge the necessity for immediate legislation to make it illegal for cinematograph exhibitions to be given in premises not licensed for the purpose. The Home Secretary, in replying to the deputation, said he thought it must be admitted that there was great danger in connection with such exhibitions. Though they had been very fortunate up to the present, they could not shut their eyes to the fact that there might be a very serious accident or even catastrophe, and it was most desirable that legislative powers should be taken to put these unlicensed places throughout the country under proper authority. It was not quite the same point, but in connection with the Children's Bill which the Government had introduced, he was considering whether fresh powers could not be taken to deal with special dangers arising during performances given before children in places which were now, both in London and elsewhere, not under proper control. The present matter was rather different, and might have to be dealt with separately, and he would consider whether it would be possible to deal with it by a short Bill in the current Session. He was well aware of the importance of the matter.

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## COLONIAL NUMBER.

A special issue of the BRITISH JOURNAL is posted direct to photographers throughout the British Colonies and foreign countries.

### SUMMARY.

**Latest Photographic Requisites.**—A large proportion of this devoted to reviews of new apparatus and materials just appearing in the British market. (P. 245.)

**Modern Studio.**—A series of articles on the design and fitting premises of the photographer commences on page 231, and completed in about seven or eight weekly instalments.

**Colonial Photographers** should note Mr. A. Mackie's article on page 242, which a useful account is given of the prevailing use of modern photographic printing processes by professional photographers in the colonies.

**Canadian reader** of the "B.J." sends some interesting details of business tactics which at present harass the photographer in that country. (P. 241.)

**Recent Photographs.**—The interest created of late in the oil, emulsion, bromoil and carbograph printing processes should command full reading of the instructions for the use of these methods by Mr. C. Welborne Piper, on page 235.

**New method of printing without light**—the Donisthorpe process—negatives which do not need to be transparent is described on page 242.

**Discussions on Copyright.**—We commence a series of chapters on the important facts of copyright (as they affect a business photographer) in understandable dialogue form. (P. 237.)

**Professional Photographers' Association.**—The annual report on page 242 shows the useful work done by the P.P.A. during the past year.

**Precautions** as to making stock solutions of chemicals are given on page 230.

**Modern plate colour positives, reflex cameras, film packs, etc.,** are the inventions described in "Patent News." (P. 245.)

**Decorative work** in decorative photography by S. Elwin Neame. (P. 239.)

## EX CATHEDRA.

### To Our Readers at Home and Abroad.

In the present number of THE BRITISH JOURNAL OF PHOTOGRAPHY we have to ask the pardon of our good readers for the partial or total eclipse of several customary sections of our pages. When we intimated our intention of reviewing the new introductions coming on the market for the now opening season, our estimation of the probable number of the latter was a good deal below the fact, yet it has been a pleasurable, if somewhat arduous, task to examine and report upon so many photographic products of British origin. For the many new plates, papers, processes, and apparatus which figure in our text and advertisement pages this week confirm once again the supremacy of Great Britain in the photographic markets of the world. The issue, as we have already announced, goes to photographers in every corner of the globe, and while the privilege of being the medium of communication between manufacturers and purchasers is appreciated to the full by editor and publisher alike, there is, as well, a sense of patriotic pride—shared, we have not a doubt, by every British reader—in establishing not merely a record in photographic journalism, but a bond between photographers the world over and the great manufacturing houses whose names are household words in photography.

\* \* \*

### A Word About Ourselves.

As we have said, there is gathered in the present issue reports of the many new introductions on the British market.

In some cases the new articles are variations of well known products; in several instances they are absolutely new departures in photographic processes. All, however, have come under our own personal notice and examination, and for this reason the difficulty of drawing distinctions between competing goods is felt by ourselves as acutely as by any one, since the fact is forced upon us that one manufacture is suited for one particular purpose, another for another, and that no single product can be hailed as the everlasting type of perfection in its particular line, seeing that individual requirements are as varied as human nature itself. And so it comes that we must ask for a careful reading of every page of this issue—advertisements and text—in which occupation our foreign and colonial readers in particular should be assured of considerable pleasure and profit.

\* \* \*

### Sulphide Toning.

The experiences of Mr. G. T. Harris, set forth in our issue of March 13, show, as the writer says, that there are many surprises in sulphide toning. An old trouble is the refusal of a

bleached print to tone at all, even in a fresh strong sulphide bath, a defect which has not yet been satisfactorily explained. In Mr. Harris's case the trouble took a form that is new to us. The sulphide bath "toned" the prints to their original black colour. This experience almost suggests that in this case the sulphiding bath produced the black monosulphide instead of the brown sulphide compound that is ordinarily looked for. Evidently in this case the brand of paper used affected the result, for Mr. Harris states that with another make he obtained eminently satisfactory colours with any developer and any bleacher. Mr. Carnegie has suggested that the brown colour is probably a gelatine compound, so it is just possible that Mr. Harris's experiences may have been due to the use of a paper in which the colloid had been modified in some way. With a non-tanning developer we understand that Mr. Harris obtained brown tones, but with amidol and some other developers the image would not tone. This rather points to a kind of gelatine that, when tanned, would not combine with the sulphide, but, of course, this is only speculation, and experimental work is necessary to determine the point.

\* \* \*

### Stock Solutions.

We have seen lately many references to the advantages of keeping chemicals in strong stock solutions, but it is also very desirable that the disadvantages of too strong solutions should be pointed out. Numerous tables of solubilities are published, and it is evident that many of the stock solutions advocated are founded on these tables, regardless of the fact that quite a number of the salts used in photography are much less easily soluble than the rest, while several recrystallise very readily when there is only a slight drop in the temperature. For example, we have recently seen 50 per cent. advocated as a useful strength for soda carbonate. Boiling is, however, necessary to make such a strong solution, and when made a small drop in the temperature will cause the formation in the bottom of the bottle of a solid block of crystals, which will not be redissolved without considerable trouble. Hypo is also recommended to be kept in 100 per cent. solution, but though this fixing agent is very soluble it does not readily give a solution of that strength. Strong stock solutions are undoubtedly convenient, but it ought to be remembered that salts differ very considerably in their solubilities at different temperatures. The alums are a case in point. We see it advised to keep potash alum in an 11 per cent. and chrome alum in a 9 per cent. solution. That is to say, the potash alum is to be a nearly saturated solution, and the chrome alum about half saturated. Such advice disregards two important points. First, the chrome alum is the more readily soluble of the two, and will make a stronger solution. Second, it will remain in solution at a temperature that will cause the other to crystallise out. If chrome alum is crushed it can readily be dissolved to make a 10 per cent. solution, and this will keep even through a cold winter. Potash alum makes a 10 per cent. solution with difficulty, very slowly if not heated, and it crystallises out very readily when the thermometer falls. In fact, in the winter it will not remain in solution unless the room is constantly kept at a normal temperature. It is a useful strength in the summer, but in the winter 5 per cent. is the strongest solution that can be relied on. Again, twenty per cent. is a useful strength for sulphite of soda, but unless the solution has once been brought up to the boiling point it will crystallise out at a very moderately low temperature. In the case of this salt, however, weak solutions are inadmissible, as they deteriorate very rapidly, as also do weak solutions of the alums and of citric acid.

### PHOTOGRAPHERS' SHELVING.

ONE of the minor photographic business matters is saving of time consequent on having the right thing in the right place. One of the greatest aids to neatness, order, and time-saving is a sufficiency of shelves in the work-rooms. These, to be really helpful, must not only be numerically ample, but must be of the right height and width for their particular purpose, and be put in the most convenient place. Shelves, as usually erected by the carpenter, are very wasteful of room. In a new business it is generally better to have some temporary arrangements for a month or two; at the end of that time a good idea of the most useful places for shelves will have been formed, and in all probability the working space will be enlarged instead of encroached upon. To erect shelves is no difficult task, or one requiring many tools, so that a sort of job may be economically undertaken during slack seasons.

Shelf-room for "finished-order" negatives is one of the most insistent and growing necessities of a studio. Shelves must of necessity be strong and securely fixed to the floor and wall. The end uprights, and as many of others as possible, should be arranged on the joists supporting the floors, whilst if the wall be brick, it must be securely plugged and the uprights fixed to it with bolts. The shelves need only be very narrow, so very little floor space is occupied.

If the majority of negatives are half-plates, five and a half or six inches is ample width, and will do equally well for quarters. For whole-plates eight inches is a good measurement. For the former size three-quarter plates a floorboard, with the tongue ripped off with a chisel, afterwards run over with a jack-plane, is good material, being ready planed, and five and a half inches wide. An extra inch is needed on account of the paper wrapping. We might say here that it is advisable to store negatives standing on their narrow side, as the necessary data will be more easily read on the long edge. If written on the ends, the refolding of the paper cover after a re-order has been withdrawn often displaces the writing: this is so liable to happen if done as advised, since the cover being more sharply defined, the negatives are easily justified to it.

The shelves should not have more than three feet space or they will sag with the weight, and too much space between shelves is generally wasted. Two inches to allow the hand to grasp top of packet for removal is sufficient.

A bottom shelf two inches from the floor should always be provided, or otherwise the packets resting directly on the latter will get wet when the floor is washed.

In workrooms there is no need to cover in the front of the shelves, since the paper packets are sufficient protection from dust. Should some wall-space be utilised, however, where customers can see, appearances must be considered. A curtain of art serge, harmonising with the general colour-scheme, and hung on an iron rod, will do, but some sort of door is better. At very slight cost one can make some frame doors, the panels, instead of being of wood, being formed by tacking fabric similar to that covering the walls of the apartment, on to the inside of the skeleton doors. To keep out dust, which dirties the fabric, some thick brown paper is tacked on at the same time. The wood may be stained, as this looks better and is cheaper than if painted, though paint must be resorted to when the stain gets shabby. In the case of these shelves to which we are now referring, the lowest shelf is three feet from the floor, so that accessories, chairs, tables, etc., of various periods can go close back to the wall. These latter take up a lot of floor-space, and make the moving of backgrounds difficult, so in one place a wide shelf may be made that



om the floor, and above that again another six feet  
he floor. The most used articles are kept on the  
a table or chairs, not so useful, are placed on the  
and on the one above such things as are not much  
ed; space is thus trebled. This sounds unsightly,  
the uprights are well-designed, say, tapering at top

and fitted with caps, whilst some of the new-style orna-  
ment is adapted to some decorative splats, the effect can be  
made novel and quite presentable.

We must defer some further notes (and drawings of  
shelves which have been found of practical service) until a  
later issue.

## THE MODERN NOTE IN THE DESIGN AND FITTING OF PHOTOGRAPHIC PREMISES.

### I.

nder this title we commence, with the following article, a  
series of chapters by Mr. Drinkwater Butt, F.R.P.S., on the  
design and decoration of his place of business, and in the  
apartments. Photography being essentially an "artistic"  
business, taste and style need to be more in evidence than in  
other trades. Therefore, while it is not possible to  
prescribe any plan which can be followed in particular cases,  
the photographer can take advantage of them in giving his establishment, both  
weight with his townspeople, and must turn out to his commercial  
on such adornment of the studio, but in these articles Mr. Butt  
moderate way of business need not consider beyond his means.  
particular materials may be used, even on the smallest scale, in  
conveniently be divided into four sections:—

I. Shop-front and Show-case. II. The Reception-Room.  
III. The Studio. IV. Planning complete Premises.  
The last chapter will consist of a description of as complete a set  
of photographic premises as can be imagined—an  
establishment, in fact, which but few living photographers  
would feel justified in putting up. Yet the scheme in its various  
parts may be commended to the study of even the small  
photographer, on account of its detailing arrangements which  
are abstracted in pieces from their surroundings and utilised  
with advantage in businesses which are anything but  
efficient in size. We need only add that all the plans and drawings are Mr. Butt's own work, embodying the experience of  
practice as an architect of studios, and with this explanation we will leave Mr. Butt himself to his readers.—Eds. "B.J."]

curious fact that the enormous advance which the last  
half of a century has seen in the fitting and furnishing of  
all classes of buildings should have so little affected those

premises designed by Mr. C. H. Quennell for Messrs. Speaight  
in New Bond Street; but among the rank and file of the great  
army of what may, without offence, be styled the middle-class

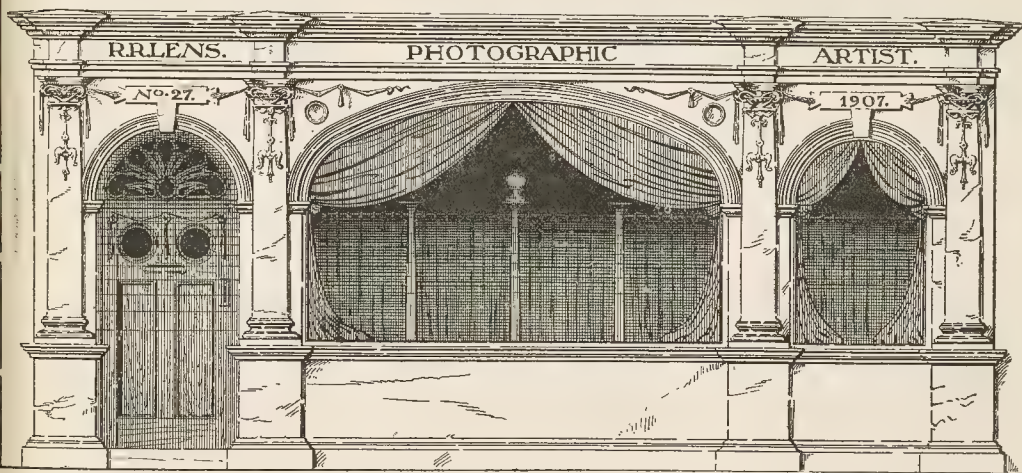


Fig. 1.—For a large city business. To be executed in stone or brick.—Elevation.

to the commercial applications of the art of photography.  
America, it is true, some of the more prominent professional  
photographers, such as Strauss of St. Louis and Falk of New  
York, have had well-designed and finely decorated places of  
business especially erected for them, and in London also we  
have seen very architecturally dignified and artistically fitted

photographers, many of them carrying on good and remunerative  
businesses, things remain very much as they were years ago, and  
we often have the very incongruous spectacle of very artistic  
work being produced amid very commonplace and inartistic sur-  
roundings. A somewhat considerable experience as an adviser  
on the building and fitting up of studios, etc., has led the present

writer to the conclusion that this state of things more often exists by reason of "a want of thought rather than a want of art" (if one may paraphrase in a slightly Cockney manner a well-

ness premises strikes a public that is nowadays used to artificially designed and decorated emporiums of all kinds, as poor, mean-looking, and generally behind the times.

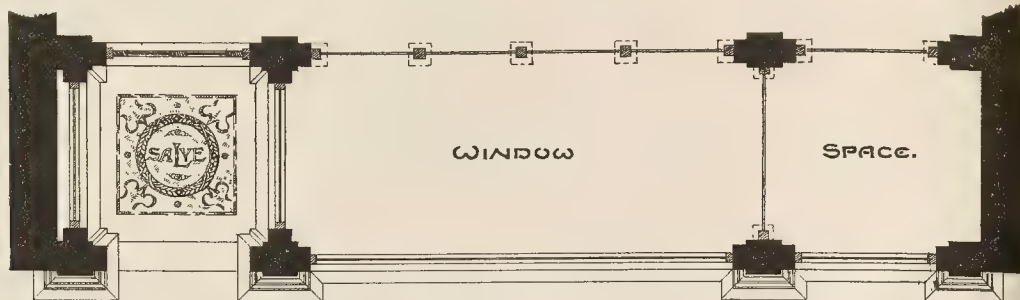


Fig. 1.—Plan.

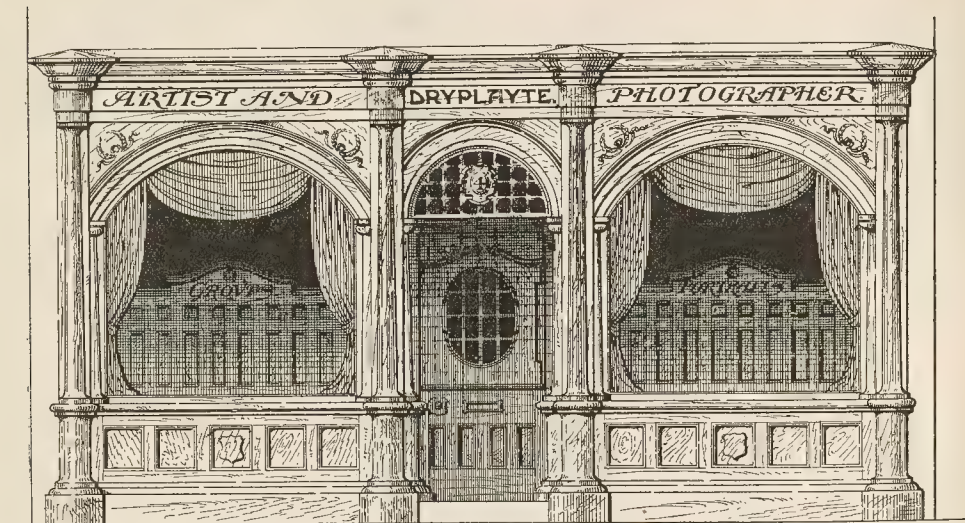


Fig. 2.—For a good town business. To be executed in oak or painted or stained wood.—Elevation.

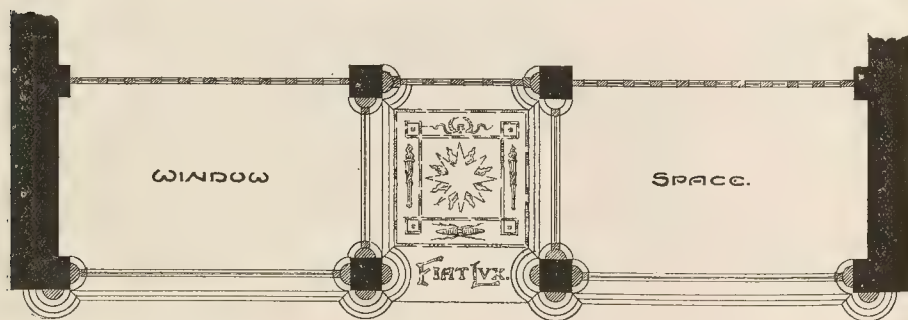
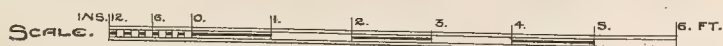


Fig. 2.—Plan.



known line), and it is often evident to him that long association has in many cases so blunted the perception of many photographers as to what their places actually look like to a fresh eye, that they do not at all realise how the appearance of their busi-

ness premises strikes a public that is nowadays used to artificially designed and decorated emporiums of all kinds, as poor, mean-looking, and generally behind the times. It is for the purpose of directing more attention to this important matter that the following pages have been written, the suggestion of the Editor of the "B.J." In them it is proposed to refer to some of the general principles which should



ern the fitting and decoration of buildings of this class, and give some hints on those points in which it appears to the reader that improvements on present conditions could often be easily and inexpensively effected.

Perhaps in this first article I cannot do better than give one or two examples of the designs which may be adopted by a photographer erecting a place of business or converting existing premises to his own use. The reader is asked to keep these before him until next week, when I shall revert to my main object, namely, to giving some advice on the best use to be made of materials with respect to expense and effective appearance. Accompanying these hints I have some further drawings to show, particularly that class of photographer whose plans for

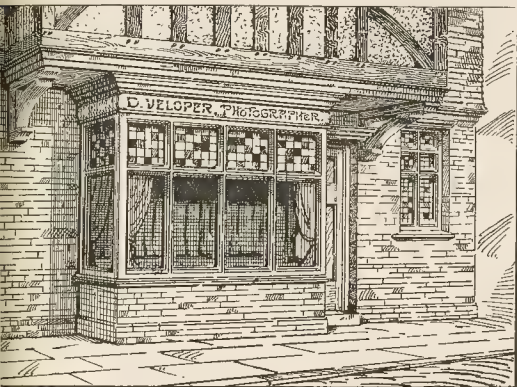


Fig. 3.—For a village or country photographer.

place of business are limited to the most modest expenditure. Simplicity and economy are not necessarily antagonistic, as I shall endeavour to convince my readers.

The shop-fronts, Fig. 1, intended to be executed in stone or brick (though the design might also be carried out in terra-cotta or faience), is, of course, by reason of its comparatively high cost, most suitable for a large and important establishment in the streets of a large city, and where a considerable amount of work, for the adequate display of which its principal window has been especially designed, was done. In order that large work might not swamp and overpower the smaller specimens, a separate window is provided for the latter while a wall-case on the left of the doorway would be very suitable for miniatures or other small pictures which need close examina-

tion for the proper appreciation of their merits. The woodwork might be of dark polished mahogany or rosewood, and the floor of doorway would be laid with Roman mosaic. Several different sets of window draperies should, of course, be provided.

Shop-front No. 2, of less cost, is essentially a design for woodwork, and would be preferably executed in oak, though in stained redwood, or in painted deal, it would, I think, prove very satisfactory. The symbolical design in the doorway would be carried out in granolithic.

The perspective sketch, No. 3, shows the treatment of a small bay window for a country or village photographer who does not produce much large work or require much space for the exhibition of his specimens, but who yet desires to have them in a



Fig. 4.—An ordinary shop front, converted.

pleasing and appropriate setting. It is a design that could be easily elaborated or enlarged to meet more ambitious requirements.

Fig. 4 shows how a very ordinary and commonplace front, such as is found in every town, may very easily, and at small expense, be converted into something more pleasing and artistic. The plain piers have been cased with quite simple woodwork and the upper portion treated with slightly rough white plaster, the cornice and necessary lettering completing the design, the window frame and doors having been left in their original form, and only painted to match the rest of the woodwork, which might very well be a very dark green, or brown.

DRINKWATER BUTT, F.R.P.S.

(To be continued.)

## THE PROFESSIONAL USE OF PRINTING PROCESSES.

From the introduction of the collodion process up to the time it was superseded by the gelatine plate—the early eighties—for some years after, albumenised paper reigned supreme as the printing process in professional photography. Non-printing, which in the seventies had been improved into a practical process—indeed, the process was the same as we have it to-day—gave it a shake. A good many professional photographers took up carbon, recognising that the results could be made of a similar character to albumenised paper prints, and equally beautiful, with the advantage that there was permanency to recommend them to the notice of their customers, and a higher price could therefore be charged. One after another, those who had attempted to introduce a new order of things were obliged to abandon their attempt,

not on account of any imperfection of the process, nor because the public did not appreciate the advantage, but simply because the constantly varying climatic conditions of this country made the working of the process uncertain, at any rate under the conditions that the average professional photographer conducted his business. The platinotype process for black tones was then also quite a practical one. Apart from certain commercial reasons which existed then, but which do not exist now, the cold tone and matt surface, the want of the kind of brilliancy people had been accustomed to in a photograph, combined in repelling popular favour, while the extra cost and the commercial difficulties referred to were perhaps among the reasons that professional photographers did not push the process as they might have done. So that the change in the

negative process did not immediately lead to a similar change in the printing process.

### The Bygone Album.

Those were the days when the album portrait was the photographer's daily bread. Cartes-de-visite were going out of fashion, the cabinet was getting popular, both especially designed to be kept in albums, and although other sizes were being pushed by the more advanced photographers, the panel and the boudoir, etc., the universal style of mounting was that of the carte-de-visite, a narrow margin at the top and sides, and a little wider one at the bottom bearing the photographer's name and address. Possibly some of the present generation of photographers, professional and amateur, may indulge in a scornful smile at the want of taste, artistic feeling, etc., of their predecessors who bound themselves by such a limitation; but, at least, there was a sound commercial reason for their methods. It was the family album that raised professional portraiture to an important industry. Mrs. Smith had her portrait taken, and distributed a dozen prints to a dozen people. A dozen family albums were enriched by Mrs. Smith's picture, and Mrs. Smith expected her own album to be added to in return; and as long as people were prepared to play this game professional photography prospered exceedingly. But games of this kind do not remain popular for ever. Sometimes they fade away after a brief season, never again to reappear; but this game has had a goodly run, and probably this article may be read by many in remote parts where fashion-changes are not quickly felt, and where the cabinet portrait in its original style is still the standard article.

### The Effect of Exhibitions.

It must be recognised that the album portrait almost compelled the use of a fairly highly glazed surface and a warm-toned print with considerable contrast, and that a platinotype print, however good it may be, does not look its best in an album. But the breaking away from the conventional style, it must be conceded, was primarily due to the rise of amateur photography. The amateur photographer usually practises on landscapes, and as there has never been the same conventional mounting of landscape photographs, he has followed his fancy in this respect, and looking upon his photograph as a picture, has endeavoured to display it to the best pictorial advantage. Photographic exhibitions have accustomed people to photographs mounted otherwise than in the old conventional style, and photographers have wisely followed the times, and have provided photographs mounted and got up as pictures. Hence the greater scope for the photographer in his choice of printing processes. If thereby photographers have lost the stimulating influence of the album, they have at least the consolation that their modern productions, if stuck up upon mantel-pieces, pianos, etc., as they frequently are, will soon soil and become unrepresentable, and thus leave room for more.

### Platinotype and Carbon.

Throughout the country it will be found that in those studios where fairly high prices are obtained, sepia platinotype is the process most frequently employed for the best work, a slightly lower price being charged for black platinotypes. Initially the material is expensive, but there is the compensating advantage that the process is free from a series of complicated operations, and the time occupied from the printing-frame to the completed print is short. Moreover, the print is an amenable one. Almost any amount of hand-work may be put upon it, or the air-brush may be employed without showing a trace of touching. Hand-work is necessarily expensive, but this facility permits the photographer whose prices enable him to spend time over each individual print to send out results finished in a way that would be impracticable in prints by any other process. The new

Japine paper affords a slight variation in both tone and surface, and is coming largely into use.

Carbon-printing is not, we believe, extensively used for small work. The firms who send out carbon prints, as a rule, make their results so like platinotype as not to be distinguishable at a glance, or choose bright tints unattainable easily by other methods. The process itself is not a difficult one, requires special arrangements, and is not easily carried on side by side with other photographic operations; moreover, as the whole process differs so entirely from other printing processes, assistants require special training, and there are not many of them available. For these reasons carbon prints are usually priced about the same as platinotype.

### The Bromide Process—Present and Future.

Regarding these two as the regal processes, at the other end of the scale we have bromide and gaslight papers. It would probably be found on investigation that the amount of these papers used far exceeds that of all other papers together. The area of bromide paper turned into enlargements in this country probably runs into square miles weekly, but apart from enlargements an enormous quantity is used by the countless "stick back" photographers who have sprung up during the past few years. In medium-class businesses, where the price for platinum cannot be obtained, a fair substitute is found in these papers. A good print on gaslight from a suitable negative leaves little to be desired. The manipulation is easy and speedy, the paper is cheap, and there is no reason that fairly high prices should not be obtained for carefully-made prints, tastefully mounted from good negatives. Toning processes are not so frequently employed as they might be. The sulphide method has been made sufficiently certain in the hands of a reasonably skilful operator to be commercially practical, and the results are very pleasing, often indistinguishable from carbon printing without careful examination; but the fact that there is an extra chemical process, and one requiring a certain amount of care, fullness and precision to obtain even results, seems to act as a deterrent. For the rapid production of proofs for reproduction glossy bromide or gaslight is constantly employed, and prints may be made in this way of a quality eminently adapted for the purpose. The postcard publishers use toned glossy bromide or gaslight extensively, and many of the postcard portraits of actors, actresses, etc., issued in this way are most beautiful prints. The tones—or, rather, the tone—obtained, from one of the most noticeable features of the work is its equality of tone, is rich and pleasing, and as prints they bear comparison favourably with the best by any other process producing glossy prints. For this work the hot hypo-alum bath is exclusively employed; but a few photographers, during the dark period of the past winter, have sent out sulphide-toned prints instead of P.O.P., and the results are indistinguishable, at any rate to the uninitiated. Manufacturers have recently been pushing semi-matt papers of these kinds under various trade names, and have also graded their papers according to the various qualities of negatives they are suited for, so that the applicability of the process is being vastly extended. It is hardly too wild a prophecy to make that in time developed prints, toned or otherwise, will supersede printed-out prints for ordinary purposes.

### Printing-out-Papers.

The process that has given the knock-down blow to albumenised paper is gelatino-chloride, or P.O.P. Probably it requires greater skill to make a perfect print on P.O.P. than on albumenised paper, but that it can be purchased ready prepared at a uniform in quality, and that it does not deteriorate with moderate keeping, are among the factors that have led to its adoption. A few years ago a show-case of P.O.P. prints was frequently indistinguishable even from the other side of the road by its aggressive blue and plum tones; but better acquaintance



part of photographers with the treatment of the paper, perhaps still more the improvements made by the manufacturers in this quality, and in adapting it to various toning methods, have led to a great improvement in the average results obtained. Shocking examples are still to be seen; but photographers always were, and always will be, capable of producing bad results, however perfect the material employed. P., then, has practically superseded albumen, and where a few years ago when no specified kind of prints was ordered, men's prints would be supplied as a matter of course. Now we would expect to receive P.O.P. prints.

Matt or semi-matt P.O.P. does not appear to have come into favour with photographers, probably on account of the fact that, except with negatives perfect in gradation, and precisely the scale to suit the paper, the shadows are apt to be heavy and wanting in depth, and that when an order has been taken for these prints, and the negative does not turn out just the correct thing, the results are not as good as they might have been with a paper possessing more latitude, if we use the expression in this connection. For matt or semi-matt prints having similar characteristics to albumen prints, ferro-chloride, or, as it is popularly known, C.C. paper, is much in vogue. Many of the best establishments only push cyanotype, carbon, and C.C. The paper may be simply toned, the more fashionable method is the employment of two separate toning processes, platinum being the toning agent in one of the processes and gold in the other. In this way very beautiful effects are obtained, often of the same nature as those

obtained in the printing of an etching by the judicious leaving of a smear of ink on the face of the plate at the discretion of a copper-plate printer of artistic as well as technical skill. Reasonable prices are obtained for C.C. prints, and the work deserves to be well paid for, as it requires considerable technical ability and much precision on the part of the printer. The C.C. papers furnished by the various manufacturers differ a good deal in the methods of treatment best adapted to each individually, and it therefore follows that the particular treatment that will produce the best results with one brand of paper will not necessarily produce the best results with another brand. Probably a great many complaints of difficulties arise from want of recognition of this fact; but undoubtedly slap-dash methods are more fatal in this process than in most, and faults are more difficult to trace to their cause.

Self-toning varieties of both C.C. and P.O.P. papers are sometimes used, and the results are obtained with the minimum of trouble. The results are similar to those obtained by simple gold toning, but may be modified by an extra process of platinum toning; but so used, these papers hardly pay for their extra expense.

In reviewing the various printing processes in ordinary use throughout the country, the faults that are common to any attempt at generalisation must necessarily occur. In different parts, photography, like other things, is in different stages of advancement, and what may be accurate as a generalisation may be quite wide of the mark with regard to a particular district.

ALEXANDER MACKIE.

## PERMANENT PHOTOGRAPHS—INSTRUCTIONS IN FOUR MODERN PROCESSES.

During the last year or so the photographic world has been enriched by the introduction of four methods of making permanent prints, the Oil, Bromoil, Ozobrome, and Carbograph processes. All four achieved a large measure of popularity in very short time after their introduction, and to-day they all rank as important processes: therefore a brief description of each one from the pen of Mr. C. Welborne Piper, himself the discoverer of the Bromoil process, may be of interest to the general readers of "The British Journal of Photography."—Ems. "B.J.]"

### The Oil Process.

It was first brought by Mr. Rawlins to a workable state of perfection, though not exactly a new invention. Practically, it is a variant of the collotype process, the pigment being applied with a brush instead of a roller.

The procedure is very simple to describe, though considerable experience is required to perfect the final result. The process is as follows:—

Latino-coated paper—carbon transfer paper is very generally used—is sensitised by immersion in a 5 per cent. solution of potassium bichromate for one minute. It is then dried, and a dry contact print from a negative is made upon it by light. A faint brown image is thus produced, and when all is visible the print is taken from the frame and washed for 10 to 30 minutes. This washing removes the yellow bichromate stain, and at the same time swells the gelatine in the unexposed parts of the film. The exposed image is, however, non-soluble, and if the washed print is laid on a thick pad of wetting-paper, and superficially dried by dabbing with a soft handkerchief, the image speedily becomes quite dry and capable of receiving a sticky oil pigment, though the rest of the gelatine remains so moist that the same pigment will not adhere to it.

The pigment commonly used is specially prepared for the purpose, but lithographic ink can be employed, and is regularly used by some workers. A somewhat stiff, tacky pigment is serviceable, as a thin one tends to give rather too soft an image. The skilled worker uses pigments of various consisten-

cies, according to the effect he desires to produce. The pigment is applied by dabbing with a thick, short, flat-ended brush. The soft-haired brushes known as china-painters' dabbers are in most general use, but special brushes are also made in both soft and stiff hair. A very little pigment is carefully spread out on a palette with a knife, and the brush is lightly charged from this palette. By repeated dabbing on the print the detail is gradually brought out until the required density is reached. An excess of pigment can be removed by dabbing with a dry or nearly dry brush, or by a peculiar brush action styled very descriptively as "hopping." Every worker has his own methods of pigmenting, and the beginner very soon develops methods of his own. The peculiar advantage of the process is, of course, the facility with which the tone values can be controlled or modified by the worker. He can apply the pigment or leave it out where he pleases, and he can control the depth of each tone and introduce softness or emphasis just as he pleases. This, of course, places a great power of control over the result in the hands of the skilled worker who knows what to do, though at the same time it offers many traps for the unwary. Indeed, no other process offers such opportunities to the expert, and none is so certain to reveal the incapacity of the unskilled.

### Ozobrome.

This is a modified carbon process, due to Mr. J. Manly. It is, in brief, a method of producing carbon prints direct from bromide enlargements without any process of printing by light, and it has the very important advantage that a number of car-

bons can be prepared from the same bromide. The process can be very simply described as follows:—

A special "Ozobrome" or "pigmenting" solution is prepared and sold by the inventor, and one part of this solution is mixed with four parts of water. The bromide print is soaked in water, and at the same time a sheet of "pigment plaster," which is a slightly modified form of carbon tissue, is also soaked for half a minute. The tissue is then removed from the water and soaked for two minutes in the prepared "Ozobrome" bath, and then the tissue and the bromide print are squeezed into contact and left under slight pressure for 15 to 20 minutes. After this there are two courses open to the worker. He may proceed exactly as in single transfer carbon printing, allowing the bromide print to take the place of the transfer paper. That is to say, the two papers together can be placed in hot water at a temperature of 104 to 106 deg. F., and, after a short immersion, can be pulled asunder, when the pigment will separate from its original support and remain upon the bromide print. Development then proceeds exactly as in the carbon process, the difference being that the final pigment image is superimposed upon the original bromide image. This silver image was, however, bleached by the Ozobrome solution, and is practically colourless. It may be left like this, in which case it will slightly darken its course of time by the action of light, or it may be at once redeveloped to blackness, the effect of which is an intensification of the whole image and a darkening of its colour. Or, again, the bleached silver image can be completely removed by a hypo bath, when the pigment image alone will remain.

The above is known as Method 1 of the Ozobrome Process, and while it has certain advantages, of course, the bromide print cannot be used over again. Method 2 is as follows:—

Instead of placing the squeezed prints in hot water, they are immersed in cold, and at once separated. In this case the pigment adheres to its original support, and the bleached bromide print is left quite free from pigment. The tissue or pigment plaster is now exactly in the condition of an exposed carbon print, and is treated in the same way. It is squeezed to a piece of soaked transfer paper, left under pressure for 15 to 20 seconds, and then developed in hot water in the usual way. Meanwhile the bleached bromide print is washed free from traces of the Ozobrome bath, redeveloped with any suitable developer, and washed and dried. After this treatment it can be used over again for the production of another carbon print, if desired, or kept as it is. It is in no way damaged by the treatment, and it will be found to be slightly intensified, and probably improved in colour and richness.

### Bromoil.

This process was worked out by myself for precisely the same reason that induced Mr. Manly to work out the Ozobrome process. The oil and carbon processes both depend on the hardening action of light on bichromated gelatine. Daylight exposures are necessary in both cases, and if large prints are required from a small original negative the production of an enlarged negative is essential. The Ozobrome process was designed to dispense with daylight printing and the making of enlarged negatives, and as soon as the Oil process was introduced it became evident that a similar simplification was very desirable. It is quite possible to produce an image in bichromated gelatine that will take the oil pigment by applying the Ozobrome method. That is to say, we can substitute a sheet of gelatinized paper for the carbon tissue, soak it in Ozobrome solution, and squeeze it to the bromide print. After about twenty minutes the two can be separated, as in method No. 2 of the Ozobrome process, and, after washing, the image formed in the gelatine can be pigmented. This is, however, a process that does not often yield good results. The image produced does not seem tough enough to stand the somewhat

rough treatment of pigmenting, and as a result detail is readily lost in the high-lights and half-tones. Moreover, the final result is a reversed image. These disadvantages make it very desirable to find some method of bringing the bromide print itself into a condition for pigmenting, and the Bromoil process is the result. The Ozobrome solution is still used but in a modified form.

The bromide print is first soaked in water until limp, is then bleached in the following solution:—

Ozobrome stock solution .....	4 parts.
10 per cent. potash alum .....	4 parts.
10 per cent. citric acid .....	1 part.
Water to make .....	20 parts.

Bleaching takes less than a minute, and when completed the print is very briefly rinsed and immersed in 5 per cent. sulphuric acid for two minutes. After this it is rinsed again and is then put into a fixing bath composed as follows:—

Hypo .....	2 ozs.
Soda sulphite .....	½ oz.
Water to .....	20 ozs.

After two or three minutes' fixing it is washed in three or four changes of water, and is then ready for pigmenting in the same way as an oil print. As an alternative, however, it may be dried, and it can be brought into good condition for pigmenting at any future time by simply soaking in water for about ten to twenty minutes.

The pigmenting is conducted in just the same fashion as oil printing, but there is a very marked difference in the way in which the print takes the pigment. The Bromoil print takes the pigment more readily, and can be finished in very much less time. An oil print can easily be pigmented in such a way as to hide all detail, whereas the Bromoil print reveals detail at almost the first touch of the brush. The latter is therefore the easiest process if it is wished to preserve as much as possible of the photographic character of the drawing, while tones can be modified or emphasised just as readily as in oil printing.

In this process the water and all the baths used should be at a temperature of about 65 deg. F. If less, the process may fail, while if the temperature is too high the gelatine becomes soft and rotten. The bleaching and acid baths, also, should not be overworked. Ten ounces of each should not be used for more than six 10 by 8 prints, and even this number is too great if the rinsing after the bleaching bath is omitted. If only one print is treated, there is no necessity to rinse. The print can go straight from the bleacher into the acid bath, and from that into the fixer, but if several prints are to be treated it is necessary to rinse between the baths, to save the last from rapid exhaustion. As a rule, it is advisable to have a spare print or so of the subject handy. One can be used for experimental pigmenting to test the effects obtainable, and a second one can be used for making the finished print, which is all the better if pigmented boldly, and not worked up too long or submitted to alterations. As the preparation of a print for pigmenting can easily be completed in ten minutes it is as well to prepare each one as wanted. Nothing is gained in point of time by preparing several and allowing them to dry, and they must not in any case be allowed to remain in the water too long before pigmenting, otherwise the image may soften. A freshly prepared print should be laid on a board for pigmenting within twenty minutes of the beginning of the operations, otherwise difficulties may be met with.

### The Carbograph Process.

This is another method of producing carbon enlargements, it differs from the Ozobrome process in that the enlargement is produced direct from the original small negative. The theory of the process is much the same as that of Ozobrome,



instead of obtaining the carbon print by squeegeeing carbon sue on to a bromide print, the bromide and carbon films are incorporated into one emulsion, with which the "Carbograph" per is coated. The bromide enlargement is produced by the ordinary method, but within the carbon film. On treating the result with a bichromate bath or sensitiser, a hardened carbon image coincident with the bromide image is formed, and the result is then treated just like an exposed carbon print. The following is the exact procedure. Carbograph is put on the market by the Rotary Company, and the speed of the emulsion is described in terms of that of Rotograph bromide paper, which is about 25 Watkins. First arrange apparatus set in the same way as for producing ordinary enlargements, and ascertain the correct exposure for a bromide enlargement developed with the iron developer given later, and note also the time of development that gives the best result. The correct exposure for a Carbograph print is then determined by multiplying the time already found by one of the following factors, which vary according to the colour of the tissue selected:—

Warm sepia .....	5	Engraving black .....	9
Light green .....	7	Photo-brown .....	10
Cold sepia .....	8	Red chalk .....	10

The time of development for the Carbograph will be the same for the bromide print, which will generally be found to vary from five to seven minutes. The developer used is either special iron citrate developer sold for the purpose, or the following:—

I. Potassium oxalate .....	6½ ozs.
Hot distilled water to .....	20 ozs.
II. Ferrous sulphate .....	1½ ozs.
Citric acid .....	48 grs.
Distilled water to .....	5 ozs.

Add 1 oz. of No 2 to 5 ozs. of No. 1, and to the mixture add drops of 10 per cent. potassium bromide. When the time of development is completed, immerse print in 1 per cent. acetic acid for one minute, then wash in three or four changes

of water and immerse for three minutes in a sufficient quantity of the following sensitiser:—

Potassium bichromate .....	1 oz.
Water .....	25 ozs.
Potash alum (10 per cent. solution) .....	½ oz.

The alum should only be added just before use, and the bath should be thrown away after use. The dish must be kept rocking during the sensitising operation. When this is finished the print is washed in three or four changes, squeegeed to transfer paper, left under slight pressure for ten to fifteen minutes, and then treated just as an ordinary carbon print. That is to say, it is developed in hot water at a temperature of 105 deg. F. When developed, it is treated with a 20 per cent. plain hypo bath, to remove any silver bromide left, is washed, hardened in 1 per cent. alum, rinsed, and dried. The result then contains the silver image as well as the carbon, and the former can be removed, if desired, with a strong Farmer's reducer.

The process may seem complicated from the description, but as a matter of fact it is a very easy one to work. If the exposure and first development are correctly adjusted in the way described, the rest of the proceedings work almost automatically. The final reduction must be adopted with caution, as it tends to reduce contrast. The three most rapid papers seldom want it, as they naturally give soft results. The other three give strong contrast, and are often improved by reduction. In the process the colour of the photo-brown is altered to a certain extent, while the red chalk colour is only obtained in the case of the last paper when reduction is complete. The unreddened print is a brownish red.

The Bromoil, Ozobrome, and Carbograph processes all have considerable scientific interest, as they depend on a somewhat mysterious hardening process (of the gelatine) that is not yet properly understood, though in all probability it is destined to play an important part in other new photographic processes. The three mentioned are therefore very attractive to the experimenter, who soon realises that the same mysterious action has many possibilities.

C. WELBORNE PIPER.

## CONVERSATIONS ON COPYRIGHT.

**COPYRIGHT.** The sole and exclusive right of copying, engraving, reproducing, and multiplying any photograph, and the negative thereof, by any means and of any size.—[Extract from the Copyright (Works of Art) Act (1862).]

Taking this explicit definition of copyright from the Act, the present series of conversations will aim to convey by means of examples and simple dialogue the way in which the act affects the photographer: I., as regards ownership of the copyright; II., as regards registration; III., as regards sale and part sale of copyright; IV., as regards infringement of copyright; and V., as regards copyright in foreign countries.

### I.

#### THE OWNERSHIP OF COPYRIGHT.

**Q.** : As a photographer, I assume that any photographs I make are my copyright?

**A.** : Only in certain circumstances.

**Q.** : Can we define these circumstances?

**A.** : Certainly; the Act is most clear on the subject. If you take a photograph for your own use, the copyright is yours. If you take it for someone else, who agrees to pay you, the copyright belongs to the person who employs you.

**Q.** : Do I understand you, this question of payment decides to with whom the copyright rests?

**A.** : It's not exactly that. The Act says that when taken

We will ask the reader to assume that he is the querist (Q.) and that the answers (A.) are given to him (as they are) by one who has had cause to digest every sentence of the Copyright Act, and of the judgments in the courts, and has, moreover, for years past rarely passed a day without having some incident of a photographer's business in which copyright was concerned brought before him for his advice. Having thus cleared the ground and established, it is hoped, a mutually friendly understanding between questioner and informant, we may proceed to the first section of the subject—the ownership of copyright as it affects the photographer.

"for or on behalf of another person for a good and valuable consideration, the copyright is the property of the person for whom or on whose behalf it was taken."

**Q.** : Is there any difference? A person pays me to take a photograph; the copyright is not mine, but his.

**A.** : Certainly; but even if he fails to pay you—if, like Mr. Skimpole, he pays you only "in his expansive intentions"—the copyright is still his, not yours.

**Q.** : Is this what you call receiving "good and valuable consideration"?

**A.** : The Act refers to the work as being done "for a good or

valuable consideration." It leaves you to see that you get it. That is, it does not differentiate between the man who pays you for taking the photograph and the man who owes you; both stand on the same footing as regards ownership of the copyright.

Q.: So that if I photograph a sitter from whom I cannot get the money, I am still prevented from recouping myself by using the negative or the prints for any other purpose?

A.: Unless you have the sitter's permission, you are. It amounts to this: If you are in a position to sue for payment for the taking, you can't (for that very reason) have any ownership in the copyright. That is a convenient test to apply if you have doubts as to your position. You must realise you can't have your cake and eat it; payment for the work or copyright in the prints: one or the other, but not both.

Q.: I have another case in which I am in doubt. A customer came to my studio and asked to be photographed, and for proof to be submitted before he will give an order or pay anything. This I have done, but have heard nothing of him.

A.: The transaction is unbusinesslike, but his visit is certainly an implied promise to pay if the proofs are satisfactory. In the event of their not being satisfactory, presumably under copyright law, the copyright would be yours, you having received no valuable consideration. But the aspects of such a case under common law might involve some nice points.

Q.: All this applies to a sitter coming to a studio or to a photographer dealing with customers. But suppose I am an operator or assistant?

A.: You are none the less receiving "good and valuable consideration" for what you do. You are paid wages, or salary.

Q.: Suppose I can't get the money?

A.: The same applies. Your employer is liable to pay, and it is open to you to sue him. In these circumstances, whatever photographs you may take in his studio or when travelling for him are his copyright.

Q.: Must this "good and valuable" consideration be money?

A.: It need not be. The acceptance of articles of value, or of board and lodging, may be agreed upon as "valuable consideration." There is, in fact, one case on record in which the granting of permission to photograph certain premises was judged to be "valuable consideration" to the photographer, because it gave him the opportunity to sell numerous copies of the photograph thus taken.

Q.: I suppose the copyright becomes void on the death of the person who commissioned the photographer. For example, I was recently commissioned to take some photographs of a monastery. The abbot paid me, but as he is now dead, I suppose I am at liberty to issue copies of the photographs, say, as postcards?

A.: That you certainly are not. Copyright in all cases lasts for the life of the *author* and for seven years after his death.

Q.: Does this apply to a photographer working for himself as well as to one employed to take negatives?

A.: It applies without exception in all cases. But if the negative be sold without proper "assignment" of the copyright, the copyright becomes altogether lost.

Q.: There we seem to have a point which bears on the professional. If I buy a business, it is therefore necessary, is it not, to see that the copyrights are transferred to me simultaneously with the negatives?

A.: Certainly it is. A list of the copyright subjects should be made, and the copyrights assigned in writing to the purchaser. This document should be stamped with a sixpenny stamp.

Q.: Must I, as the new proprietor, re-register each separate copyright?

A.: That is a point which I can best deal with in our next "conversation," viz., that on "Registration."

Q.: At any rate, here is a case which I should like settled. I go to a sale and purchase a number of negatives (the original owner having died). Another photographer, B., at the same time purchases in another lot the certificates of registration of some of my new negatives. Can he stop me from printing the latter as postcards or in other ways? He has said he can.

A.: He cannot. The sale of the negatives without proper transfer of the copyright has caused the destruction of the latter. Anyone is at liberty to print from the negatives, and—unfortunately for you—to copy the prints.

Q.: We were speaking just now of the duration of copyright—of its lasting for the life of the author and seven years after his death. In the case of a portrait business, who is the "author" of the photograph, the proprietor of the studio or the paid operator?

A.: It has been decided that the "author" is the person who is, as near as he can be, the cause of the picture which is produced: that is, the person who superintended the arrangement and placed, say, the figures in a group in position.

Q.: How about an operator who, in the absence of the proprietor, simply carries out certain instructions given him by the latter?

A.: Legally he is the "author," although, had the proprietor been present and personally given the directions, it is probable that he would be regarded as the "author," even though he did not actually raise a finger in manual labour.

Q.: I understand, then, that the duration of copyright is fixed usually by the life of the operator. Do you mean to say that in the case of a view-publishing business a copyright expires seven years after the death of the operator who took the negative?

A.: It does.

Q.: Does not this confer great licence on persons who would reproduce photographs without paying the proper fee?

A.: One might assume that it would, but there is no record of a case in which action for infringement has been defended by alleging the lapse of the copyright by the death of the author. Usually it is difficult to discover what has become of an operator.

Q.: Perhaps you can tell me now what happens to a copyright of a sitter's photograph on the death of the sitter? I assume that the author is still alive.

A.: Copyright can be willed to any person, or passed to the heirs, executors, or assigns, like any other property. Whether it is necessary for this purpose that the copyright should be registered is a debatable point, and there is no decision in the courts upon it. In any event, all that can happen is that the copyright may be destroyed.

*The remainder of the conversation must be postponed until next week.*

FEATURES OF THE "B.J."—The regular weekly issue of THE BRITISH JOURNAL OF PHOTOGRAPHY includes:—"Ex Cathedra" (notes on current topics); contributed articles by British writers and translations of the best matter in the Continental journals; "Patent News" (abstracts of British Photographic inventions and a file of applications for patents); "Analecta" (extracts from other English

photographic papers); Reviews of New Books, Materials, and Apparatus; Commercial and Legal Intelligence; News Items; Letters to the Editor from readers; and "Answers to Correspondents." A very complete Annual Index is a great feature of the "B.J.," the volumes of which thus form storehouses of readily accessible information.



## THE WORK OF S. ELWIN NEAME IN DECORATIVE PHOTOGRAPHY.

in advertisement-making as it is in Limerick competitions any are called but few are chosen. The reason for this is that few can command the necessary taste and fitness. Mr. Elwin Neame is one with gifts in this direction should make him more than ordinarily successful. Though but young, Mr. Neame has had quite an experience in photographing professional beauties, and he could probably



photograph by]

S. ELWIN NEAME.

[E. O. Hoppe.

on his fingers the stars of the musical stage whose portraits has not committed to the photographic plate. Now he has turned himself to a bye-way of South Kensington—Margravine Road, Baron's Court—there to prosecute a branch of art which he has made peculiarly his own, and is applying with a persistence which should have its commercial reward. Of us have admired Mr. Neame's work in the exhibitions on reproduction, also all unacknowledged on the window of the plate and paper manufacturer to whom the trinity of grace, feminine attractiveness, and good photography, which produce of the Neame studio; has been quick in appeal. Though your amateur buyer of Somebody's P.O.P. may not notice it, the show-card which finally caused the purchase owed its languorous beauty of flowing lines, flowing hair, flowing tresses, and flowing limbs to Mr. Neame's patience and long time.

One knows better what financial advantage rests in having a pretty face at command as well as the taste to pose it. A figure is of less value in Mr. Neame's hands, for he does flow more than a bewitching throat or a perfectly tanning shoulder of it to be seen. Therein comes his fine-artful-

ness. His particular model may have a bewitching figure too, but he takes care not to give us any "definite data" on that point, and as a consequence we give her the benefit of the doubt in our imagination, and are as charmed with her *tout ensemble* as if we had a complete Puyo before us. This suggestion is, in reality, of more worth upon a show-card than a fuller and more pictorial subject would be, which might engross a buyer's attention too deeply. Mr. Neame's faces and hazy draperies attract, partly by what they do not offer, and, having attracted, they do not hold too exclusively. What could a manufacturer want more? Hitherto little of Mr. Neame's work has been seen in advertisements reproduced in half-tone, though that, one would think, must be an obvious application of it. In reproducing one study which we brought away from Mr. Neame's studio we have taken the unpardonable liberty of supplying the lady with a pair of feet which she could comfortably swallow, and of surmounting her with a panel on which, in an advertisement, would appear the name of So-and-So's furs or hats. Mr. Neame will disown this artificial silhouette-like figure; but we reproduce



WITH APOLOGIES TO MR. NEAME.

Liberties have been taken with the photograph to show the adaptation of Mr. Neame's work to newspaper advertising.

the photograph to show that his work is not all among the damsels of a gauzy Utopia.

But whether Mr. Neame keeps on his present profitable lines, or whether he embarks upon other ways, he is pretty sure to



A woman reclining in white and drapery.



A photographic design by S. Elwin Neame for a heading to a magazine article.



duce the attractive thing. Perhaps the ornamental arrangement shown in the fourth example will develop into something suitable. In that design a portion is pierced to admit letter. This plan requires more care in printing than is always obtainable, otherwise the cut edges reveal a decidedly unpleasant mess and hardness of edge. But on these points the wishes

of clients must be deferred to. Mr. Neame, as we have said, has youth and enthusiasm on his side, and a great asset is the high excellence of his work in negative-making and printing. With such aids to his originality, it must surely happen that his determination to specialise in decorative photography will not fail of its reward.

## SOME BUSINESS METHODS IN CANADA.

CONSIDERATIONS of fraternity have induced me to record, for the benefit of the craft in the Old Country, some of the conditions of the business which obtain in Canada, which, be it said, are greatly inspired by the go-ahead methods of our cousins over the border.

### The "Two Cabinets for 50 Cents" Dodge.

A reasonable and satisfactory amplification of the free cabinet system is that which offers to intending patrons two cabinet photographs for 50 cents, payable to the agent or canvasser. In this system the studio which puts out the coupon "stands the racket" of two cabinets, and plumps on its business acumen to increase the number when holders of coupons turn up for a sitting. The 50 cents, of course, goes to the agent, who draws no salary, and is entirely dependent therefore on his own skill and resource and the excellence of his specimens for his living.

The strong point here is the fact that the 50 cents paid by the customer guarantees in some part his intention to pay the studio a further amount—about 80 per cent. of the coupons are redeemed. The principle is sound, because it implies that people who want photographs will pay for them, if only as much or as little as 50 cents. As far as the studio is concerned, perhaps even a smaller coin would serve well, or better, on the assumption that more people would buy for 25 cents than at 50 cents. But there is a limit to the number of houses an agent can visit in a day. He must be paid for his services, and the larger the amount paid by the customer the more the guarantee that he will not change his mind.

### At the Studio—"Floating Sepias."

Naturally, it frequently happens that, however good the photograph, only the two pictures contracted for are completed. "But," says the proprietor of one such studio, "such cases are not more frequent than we can help, for customers never leave my reception room until we have shown them all we have to show. If we believe in our excuses as to the limited time at their disposal, we declare that we cannot do them justice in so short a period, and will they call again—by appointment. If we disbelieve them we remark, 'You see, I am a lam' (or Sir, as the case may be), 'we do this for advertisement, unless we get our advertisement we cannot afford to give away photographs. We are not philanthropists, neither are we here for our health; on the contrary, personally speaking, I am here for the sake of my health, and the least you can do, now that you have got our elevator, is to spare a few moments inspecting the various photographs we have to advertise. Those beautiful 'Floating Sepias!' you see they are attached to the card merely along the top edge, that's why they float, etc. etc.'"

### The Endless Chain Method.

The free enlargement, with three or half a dozen cabinets, is the outdone by another photographer of my acquaintance who, on return for six introductions of clients for a dozen cabinets at a price, returns the price of the photographs originally supplied by the introducer. Thus, on the completion of an order, six coupons are enclosed in the package, each bearing the name, number, and address of the patron. These are distributed among the first sitters' cards, and as they are presented at the studio they are filed and the rewards noted in the Studio Register, or a separate book kept for the purpose against the name they bear, as having been presented and completed. The whole half-dozen booked, a cheque is sent to the patron through whose good offices they came to be presented. But the weak part of this scheme is the fact that people who want photographs will pay for them. Thus it comes about that more than half the patrons do not, or only partially, use the coupons. The rest do, and business certainly accrues to the photographer perhaps otherwise would go somewhere else.

Incidentally, I may mention that the coupons are all perforated with a hole about  $\frac{1}{4}$  in. in diameter, with the legend beneath it, "Look through this hole at your pictures, and the figures will be seen in relief," which, quite apart from the matter of fact, is designed to give an intrinsic, if temporary, interest in the card for other purposes than the business to which it is to be applied. Of course, every customer who turns up gets another six cards to distribute, which makes for the "endless chain."

### The Toilet Mirror Game.

An American firm of mirror and toilet manufacturers also employs a large and accredited posse of canvassers for their products, which they work in this fashion. A handful of these men descends upon a town under a leader, who visits the local photographers with the following proposition:—After inquiring as to business generally, the prices obtained, and satisfying himself as to what success is likely to be reached by "boosting" the studio's work, the agent produces a "grip" (Americanese for hand-bag), containing samples of a neat circular mirror about five inches in diameter, on the reverse side of which is another mirror, silvered so as to leave a circle opening in the centre of clear glass. By a clever arrangement of a screw at the base of the handle the mirror becomes removable, and the photograph is inserted between the two glasses. This is the extra photograph given away in the mirror.

Then the agent explains how he will enable the studio also to give away the mirror away with a certain number of photographs at a fixed price, said price to cover the agent's canvassing fee, plus the price of the mirror, plus the least the studio will turn out half a dozen cartes-de-visite for, the total sum varying with different localities, according to the ruling prices. A similar mirror, brush, and comb, "all in case complete," are dealt with in similar fashion and, of course, at an advanced price, these to be given away with one dozen cabinets. It is fair to say that the mirror has all the appearance of a \$5 article.

The gang of accomplished talkers "stays by" the town until they have sold the uttermost coupon, the takings per man often averaging \$50 or \$60 per diem. This speaks as well for "proposition," as for their trained and, it must be admitted, often unscrupulous, solicitation. The business is not only confined to only one photographer in each town, but also to the photographic fraternity, to the exclusion of any store-holder who might desire to handle the same goods retail. And the applications of such are many. The whole corps numbers, I believe, forty canvassers, and the States and Canada have been, and are being, worked systematically. It is estimated that they will not get through with the Americans in a lifetime, so the prosperity of the firm is assured. It is, however, to be noted that, although the bait is changed once every three or four years, the same tactics are repeated, which affords ample proof, if, indeed, any of the sort were needed, that the business side of the "proposition" is sound and "live."

The "spiel" also is one which, owing to its great success as a money-getter, carries with it an implied threat of temporary comparative extinction in a small town for those of the fraternity who work at a moderate price. It certainly is a paying game for the mirror firm and the one photographer, who continues to be the sole local agent for this class of goods long after the cream is off the milk and there is any skim left.

I will only add that photographers who may have coupons in the field already, and who are not among the chosen ones, do not relish the presence of these voluble gentry in their locality, as they have, I believe, a practice of buying up from owners any existing coupons not their own they may happen upon. It is true that the agent by

so doing drops his 50 cents on the collection, but there is a gain to the firm of an extra chance of selling one more mirror to the photographer when that coupon is presented at the studio.

I am not here concerned with the business morality of such a procedure; I have the honour to record the fact for what it is worth.

"B.J."-ITE IN THE NORTH-WEST.

#### A NEW METHOD OF PRINTING—WITHOUT LIGHT—FROM NEGATIVES.

##### THE DONISTHORPE PROCESS.

In our issue of January 10 last we published the patent of Mr. F. W. Donisthorpe for treating a negative in such a way that the parts exposed to light—e.g., the sky—are made unsaturable by a dye solution, whilst unexposed parts remain easily saturated, the intermediate portions being saturable in proportion to their transparency—that is to say, a negative thus treated and dyed up yields to a moist sheet of gelatine-coated paper, squeezed in contact with it, a positive image composed of the dye. The above is the essential part of the Donisthorpe process of photography and by those familiar with colour printing processes will be seen to be a simplification of the pinatype process, the original negative being converted directly into a pinatype print plate. The solutions mentioned in the patent as capable of effecting this remarkable change in the negative include a mixture of vanadium chloride, potass ferricyanide, ferric chloride and oxalate, and oxalic acid and glycerine.

The Donisthorpe process thus consists in treating a negative in this way, dyeing it, and taking off prints by contact only on moist sheets of gelatine-coated paper. Our own trials some months ago with an experimental solution Mr. Donisthorpe sent us showed us that the process was workable, and we have therefore been interested in seeing, within a few hours of this issue going to press, a number of prints by the process of remarkably good quality, and resembling, some of them, P.O.P. prints so closely as to very well pass for them. The method is applicable to lantern slides and to printing from enlarged paper negatives. Moreover, it is proposed by the Donisthorpe Patents Company (at whose offices, 5, Southampton Street, Strand, London, W.C., we learnt these later details of the process) to issue a roll-film coated, not on a transparent support, such as celluloid, but on black paper, transparency of the negative not being needed for the Donisthorpe process. Advantage can thus be taken of the black paper support to obtain a perfectly non-halation flexible film, the negatives taken on which can be printed from as above described. We shall refer to the practical working of the process in a later issue.

#### THE PROFESSIONAL PHOTOGRAPHERS' ASSOCIATION. ANNUAL REPORT.

THE following is the text of the annual report of the Committee presented at the annual meeting reported in our last issue:—

During the past year there have been seventy-five admissions to membership; this compares with seventy-seven last year and fifty-three the year before. This accession would be quite satisfactory were it a net increase of membership, but unfortunately on the other side there have been twenty-three losses through death or resignation, and through members having given up business or removed leaving no address, and fifty-two members have failed to pay their subscriptions for two years after eight applications.

The Workmen's Compensation Act having come into force on July 1, the Committee made arrangements with the Fine Art and General Insurance Company for the insurance of members' liabilities under the Act at a considerable reduction from the tariff rate of premium. Care was taken that the policy issued by the company was so drafted as to indemnify the insurer against every possible risk, and leave no ground for challenge, except for deliberate misrepresentation. The number of policies issued to members so far has been 108. That so few members have availed themselves of the arrangement shows probably that the majority have not yet realised that the risk of having to pay compensation is a real one, and one that it is quite as necessary to meet by insurance as the risk of fire.

The Committee have not relaxed their energies in fighting free-portrait swindlers, and others carrying on canvassing businesses of a more or less fraudulent nature. Through the instrumentality of Mr. H.

Comley, of Stroud, county-court summonses were served on the Glen Fine Art Co., of Manchester, on behalf of a number of persons that neighbourhood, who complained that having parted with photographs on the pretence that enlargements were to be made for them free, were unable to obtain return of their photographs. The claim was for damages for the retention of the photographs. The defendant company paid the damages claimed and costs, rather than appear in court. At Pocklington, Yorks, at the instance of our member, Mr. F. Slights, the Committee instructed a solicitor to defend two summonses issued by the King Edward Fine Art Enlarging Company, to recover payment for frames for enlargements that were represented to be made free. The result was verdict with costs for our side.

A letter calling attention to the fraudulent nature of the offer of free enlargements and the inadvisability of dealing with canvassers rather than the established photographers of the neighbourhood, signed by the Hon. Secretary, and intimating that the Association is willing to assist those who have been swindled, has been inserted in a large number of provincial papers (it was through this letter that the Stroud case came to the notice of the Association), and many instances country members have been instructed how to deal with cases that have occurred.

The sub-committee appointed to deal with the new Copyright Bill have held several conferences with the Committee of the Artistic Copyright Society, who are promoting the Bill. It has been by the threat of the strenuous opposition of our Association as a whole, and of each individual member of it, that any concession from the Bill as drafted has been obtained. If that had passed into law, it would have made the protection of photographers' copyright practically impossible in most cases; but in the agreed modification, though the sub-committee have not obtained all they fought for, the conditions have been made reasonably easy to comply with. The sub-committee recognised from the first that on any alteration of the law of copyright it would be impossible to maintain the privileges which photographers have hitherto enjoyed.

At the invitation of the Editor of the "British Journal of Photography," the Committee organised the second Exhibition of Professional Photographic Work, held from February 7 to March 7 in the gallery attached to the Office of the "Journal." On the experience gained from the previous exhibition it was thought advisable to proceed upon different lines; and on this occasion the Editor of the "British Journal" was asked to furnish a list of photographers of established reputation, who were invited to furnish eight examples of their work, and from this number six were selected for exhibition. The exhibition was a great improvement on the last, and afforded an opportunity of studying the methods and style of some of the leaders of the profession of great value to those who were able to take advantage of it. As the accommodation of the Gallery only permitted the work of nineteen exhibitors to be included, there remains a number of members of equal standing to those invited this time who may be relied upon to form an exhibition of equal merit upon the next occasion. The Committee have to thank those members who responded to their invitation to exhibit, and are particularly indebted to Mr. S. H. Fry, who undertook the work of mounting the exhibited photographs in *passee-partouts*.

The number of applications from members for advice and assistance in business difficulties continues large, and in most cases the aid of the Association has enabled the difficulty to be met successfully.

At the members' meeting in October a valuable paper was read by Mr. Edgar Scamell on "Advertising," which raised an interesting discussion; and at that in January, Mr. H. J. Comley lectured upon "Colour Photography from a Professional Point of View," terminating with a demonstration of one of the methods of producing three-colour prints. The thanks of the Association are due to both of these gentlemen for their instructive communications.

The Committee have to deplore the deaths of two of their number during the year under review. Early in December, Mr. Marc Jaccotte, Past President, died after an illness of some months, and the Association was thereby deprived of the services of a man whose energy and foresight it is indebted in a great measure to its present strength and prestige. His amiable personality and great business aptitude commanded the affection as well as the respect of all his fellow-officers. Mr. H. S. Mendelsohn died suddenly



ary. His long experience as a professional photographer was great value in the deliberations of the Committee. He was a regular attendant at the meetings, and his loss is sincerely regretted by all those who have worked with him.

The thanks of the Association are due to the Royal Photographic Society for allowing the meetings to take place at their house, to the Editor of the "British Journal of Photography" for publishing notices, reports, and other information relating to the Association. The Committee also wish to express their indebtedness to the Hon. Solicitor, Mr. Percy E. Marshall, for valuable assistance rendered.

By order of the Committee,  
ALEXANDER MACKIE,  
Hon. Secretary.

## Patent News.

process patents—applications and specifications—are treated in the Mechanical Notes."

The following applications for patents were received between March 9 and 14:—

CINEMATOGRAPHS.—No. 5,291. Improvements relating to cinematograph displays. William Edward Delves Broughton, 6, Bream's Buildings, Chancery Lane, London.

APPARATUS.—No. 5,336. Improvements in cinematographic and photographic apparatus. Alberto Lleo Pablo Audouard and Emilio Baradat, 51, Bedford Street, Strand, London.

PRINTING ON FABRICS.—No. 5,479. For reproducing from a photographic negative, photographs on textile fabrics, such as silk, cotton, satin, and the like. Francis Edward Alphonsus O'Rourke, Seward Road, Hanwell.

ROLL FILMS.—No. 5,641. Improvements in roll-films for photographic work. Edmund Seal Donisthorpe, 5, Southampton Street, Strand, London.

PRINTS.—No. 5,726. Improvements in or connected with appliances for use in drying photographic prints. Arthur Ferri Pollock, 58, St. Vincent Street, Glasgow.

STEREOSCOPES.—No. 5,742. Improvements in stereoscopes. Albert Edward Foote, 37, Essex Street, Strand, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

The specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

COLOUR SCREENS FOR COPYING GRAIN AND OTHER SCREEN-PLATE COLOUR TRANSPARENCIES.—No. 4,932, 1907. The invention relates to the copying of one screen-plate colour transparency or negative on another by contact or in the camera, and the inventor first discusses at length the difficulties caused by the non-registration of similar colour units when one colour transparency is printed on another.

The invention consists in the use of coloured glass screens (for printing or copying), through which, unlike the screens used for ordinary photography, bands of pure light are transmitted—that is, absorption bands of these filters do not overlap, but are separated by broad bands of absorption. These screens are used separately and successively for the illumination of the screen-plate positive or negative when printing, or all three may be combined into one by building up a banded filter of the pure colours. All that is required is to put the printing frame containing the coloured negative and the positive film at the bottom of a deep box (Fig. 1), and to expose this to the light coming through a trichromatic screen as shown in Fig. 2. The peculiarity of this trichromatic screen is that it consists of a series of coloured bands or mosaics of the three required colours, the sum of the surfaces of the different colours being proportional to the respective exposure times of the different colours. Thus, if the red required 1 sec. exposure, the green 6 sec., and the blue-violet 2 sec., each of the three bands could be formed as follows:—A red band 4 c.m. in width, a green band of 2 c.m. in width, and a blue-violet of 1 c.m. in width. By moving this back and forth during

exposure, the different monochromatic lights will be sufficiently blended. To ensure this blending, a ground glass can be placed between the trichromatic screen and the printing frame (Fig. 1).

If one wishes to obtain coloured diapositives by means of the copying cameras, correct timing of the three different images, at one exposure, can be obtained by inserting in the lens and in close proximity to or in the diaphragm plane itself, a screen, divided in sectors of the necessary colours, which sectors are proportional to the respective times of exposure required.

The above-described methods can be applied also to the making of colour prints on paper. All that is necessary is to back a colour-positive of suitable density with white paper, and, after

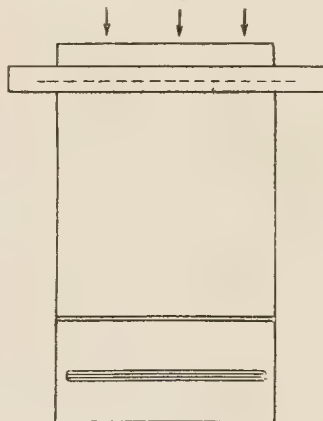


Fig. 1.

drying, remove it, if necessary, from its provisional support. It is essential that steps be taken to ensure absolute adhesion between the coloured grains or lines and the underlying photographic image, as any shifting of the one relatively to the others would falsify the colours. These paper prints are not brilliant in colour, but the blending of the colours is so perfect that, in some cases, this method can be satisfactorily applied.

Pure colour-screens can also be employed in conjunction with colour positives to obtain negatives from which plates can be made for three- and four-colour printing, and for this purpose it is necessary to make three successive photographs of the coloured grain or line photograph on distinct plates. One, representing the

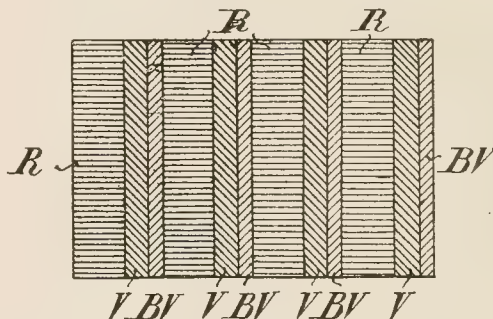


Fig. 2.

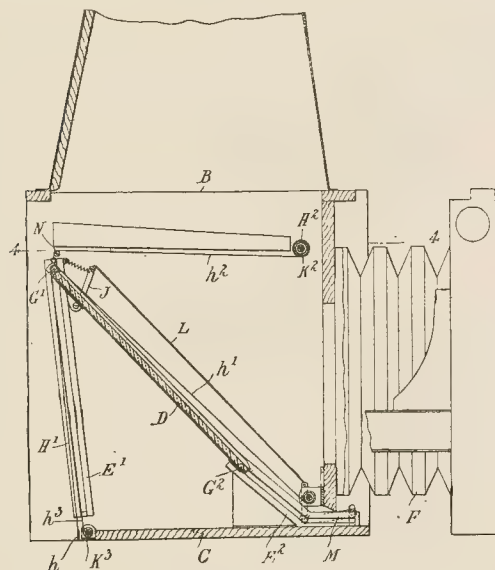
red image, must be made by means of a screen which will transmit light coming through the red image, but will entirely absorb all the light coming through the other two images. The red image, which on the original grain or line photograph only occupies one-third of the surface, must be made to occupy the entire surface, either by a slight motion of one of the plates or by a slight diffusion of the image, as described in British Patent No. 8,390/96. The green image must be made by means of a screen transmitting light coming through the green image and entirely absorbing the light coming through the red and blue violet

images. Similarly, the blue violet image must be made by means of a screen which transmits light coming through the blue violet image and entirely absorbing the light coming through the green and red images. Both the green and blue violet image must be made to cover the entire plate. The images are then printed in colours complementary to the primary colours. That is, the red image is printed in greenish blue, the green image in bluish red, and the blue violet image is printed in yellow.

The present method of colour analysis differs radically from those hitherto known, for, as before noted, all other colour curves have one distinguishing feature, namely, they overlap each other two by two, while the distinguishing feature of the present method is that the curves do not overlap; furthermore, they are isolated one from the other, and are absolutely unfitted for the work of analysis of the colours required in ordinary methods of natural colour-photography. Charles Louis Adrien Brasseur, 10, East Fifteenth Street, New York, U.S.A.

**MAGAZINE CAMERA FOR FERROTYPED PHOTOGRAPHY.**—No. 21,669, 1907. The invention consists of a camera in which the sensitive plates are stored in a pile. The plates are brought one by one into the position for exposure by a magnet, and after exposure fall into the developing and fixing tank. The invention requires the seven figures and the detailed description of them for its proper explanation. Major William Carter, 167, Old Kent Road, London, S.E., and Edwin John Fletcher, 80, Geldeston Road, Upper Clapton, London, N.E.

**REFLEX CAMERAS.**—No. 5,411, 1907. The invention consists of a reflex camera in which lenses of long and short focus can be used, since the mirror is not arranged in the usual way, according to which it is hinged to the upper back part of the camera, and, when released from its "down" position has to fly up between the lens and the plate. Instead, the mirror falls, or is guided, into the bottom part of the camera, and there takes a



horizontal position. In the figure, A is the hood, B the focussing screen, and F the bellows of a reflex camera C. The mirror D has a rod  $G^1$  along its back edge, the two ends of which rod slide in and are guided by metallic guide-ways  $E^1$  at the sides of the camera, the said guide-ways being vertical or approximately so. At the front edge of the mirror there are lateral pins  $G^2$  engaging in the guide-ways  $E^2$  which are partly horizontal and partly inclined.

$H^1$  is a blind attached to the rod  $h$  which is fixed at the back lower part of the camera, and, passing over the rod  $G^1$ , is attached by means of tapes  $h^1$  to the spring roller  $K^1$  at the front lower part of the camera.

$K^2$  is a spring roller situated in the front upper part of the camera, and has one end of the blind  $H^2$  attached thereto; to the other end of the blind  $H^2$  are attached cords  $h^2$ , which pass over the roller N and are attached to the rod  $G^1$ .

The action is as follows:—To "set" the mirror a cord is drawn until the back edge of the mirror is pulled up and the end of the rod  $G^1$  catches and is held behind the nose of the lever J. The mirror is then held in a position inclined at an angle of 45 deg., and the ends of the rod  $G^1$  and the pins  $G^2$  occupy the upper parts respectively of the guide-ways  $E^1$  and  $E^2$ .

Whilst in this position the blind  $H^1$  covers the sensitive plate, and the field of view is reflected by the mirror on to the focussing screen B since the blind  $H^2$  is released and wound up on its roller  $K^2$ .

On depressing the lever M the nose of the lever J is withdrawn from contact with the end of the rod  $G^1$  and the mirror is enabled to fall both by its weight and under the tension of the tape  $h^2$ , which winds up on the spring roller  $K^2$ . As the mirror descends into a horizontal position (the ends of the rod  $G^1$  traversing the guide-ways  $E^1$  and the pins  $G^2$  the guide-ways  $E^2$ ) the blind  $H^1$  is drawn across the face of the mirror, its tapes being wound on to the spring roller, and at the same time the blind  $H^2$  is unwound off the roller  $K^2$  and is drawn across the focussing screen, the mirror falling on to the floor of the camera. Arthur Lewis Adams, 26, Charing Cross Road, London, W.C.

**PLATE OR FILM ENVELOPE.**—No. 15,711, 1907. The invention is for a light-tight envelope open at one end, and closed at the other by a cap which is retained in position by friction against the plate or film. The envelope does not press upon the surface of the film or plate over its whole extent, nor fit closely over it, but its edge may be pressed inwards to be inserted under the flaps of the cap, which will then be in contact with the inserted surface of the envelope near the edges over the whole of the depth of the edge of the cap, and will firmly retain the inserted edges in a light-tight manner and with sufficient frictional power, by reason of their being gripped or squeezed between the inner surface of the edge of the cap and the surface of the film or plate. There are thus no projecting edges by which the use of the cap may in any way cause inconvenience or liability to unintentional opening, but the whole presents a flush surface. Optische Anstalt C. P. Goertz, Aktiengesellschaft, 44-46, Rheinstrasse, Friedmann, Berlin.

**RELIEF EFFECTS IN PHOTOGRAPHS.**—No. 4,361, 1907. The method consists in first coating a glass or metal plate with a 20 per cent. gelatine solution. When dry, the plates are sensitised in 3 per cent. potass. bichromate solution. The dry plates are exposed under positive transparencies or negatives, and then soaked in cold water to swell the gelatine—or in solutions such as those of bromides, chlorides, or iodides, if a greater degree of relief is required. The gelatine relief thus formed is hardened with basic chrome alum solution, or with formalin, and used for the production of plaster matrices, or as a mould for wax matrices.

Reference is directed by the Comptroller of Patents, in pursuance of Section 7, Sub-section 4, of the Patents and Designs Act, 1907, to Specifications No. 6,690 of 1894, No. 14,814 of 1898, No. 10,948 of 1902, No. 18,210 of 1902, and No. 3,457 of 1904. Rodolfo Namias, 3, Via Malpighi, Milan, Italy.

The following complete specification is open to public inspection under the Patents Act, 1901:—

**COLOUR PHOTOGRAPHY.**—No. 4,745. Process of colour photography. Brasseur.

## New Trade Names.

**IVOR-MICA.**—No. 299,961. Chemical substances used in manufactures, photography, or philosophical research, and anti-corrosives. Anton Rutherford Van Der Burg, Junior, Havenstrasse No. 154, Delftshaven, Rotterdam, Holland, merchant. January 28, 1908.

**JUPITER.**—No. 300,454. Electric lamps (ordinary). John J. Griffin and Sons, Ltd., Kingsway, London, W.C., photographic manufactures. February 13, 1908.



# Analecta.

Extracts from our English weekly and monthly contemporaries.

## A Remedy for Over-Printed P.O.P.

The following is a method of remedying over-printed proofs on ferro-chloride paper (writes "Photography"). This is a gold toning bath, which not only tones but at the same time reduces. The prints are washed in two or three changes of water, and are then immersed in the following toning bath:—

Water .....	1 pint.
Hydrochloric acid .....	100 minims.
Gold chloride .....	1 grain.

At first, the print on being placed in this solution changes colour and appears to stain very badly, but after the lapse of a minute the stains gradually disappear, and the yellowed image steadily passes to a satisfactory colour, having become reduced very considerably in doing so. When the action has been carried far enough, the print is washed in several changes of water and then dried in hypo.

As this toning bath is strongly acid it would no doubt be a wise precaution to give the prints, between toning and fixing, a bath for a minute or two, in a weak solution of bicarbonate of soda.

## New Books.

**THE WELLINGTON BOOK.**—Messrs. Wellington and Ward have issued a fifth (and much enlarged) edition of their "Notes on the use of the Wellington Specialties," a book of instruction in the employment of the plates, papers, and films manufactured by the well-known firm of Elstree. We have been interested in watching the growth of this booklet from the slim dimensions of the first edition to its present thickness of 100 pages, a growth which it is satisfactory to say has been synonymous with the increasing sale and popularity of the Wellington products. Messrs. Wellington and Ward offer to send the publication post free to any applicant, and will be particularly glad to do so in the case of foreign readers of the "British Journal." Their offer is one which we can commend to those anxious to obtain a great deal of useful information, concisely expressed. The notes on chemicals which occupy the last few pages are particularly useful, and give the clue to many unexplained failures in photographic work.

## New Apparatus, &c.

**Staley-Wheeler Collapsible Lens-Hood.** Made by A. E. Staley and Co., 19, Tavies Inn, Holborn Circus, London, England.

The lens-hood, which for some years past has shown a tendency to appear from the mounting of photographic lenses, has recently revived, owing to the necessity of shading the lens from direct light in the case of anastigmats which possess large aperture and are



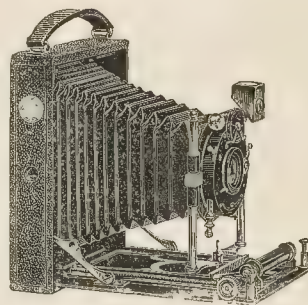
of the air-space type of construction. A hood which actually cuts off light from the surface of the lens is a better method than the use of diaphragms in the camera, which aim to cut off the light transmitted by the lens, and for this reason satisfaction should be felt

that Messrs. Staley have devised an external lens-hood which comprises a series of diaphragms, but which folds up into the small space of about 1 in. thick by 3 in. diameter. The concentric rings which form the hood lock rigidly in position, and afford a complete protection against stray light. The hood should prove a valuable accessory to the user of both hand and stand cameras, and particularly to those who employ any of the modern air-space type of lens. The hood is made in two sizes: No. 1 for lenses up to 1 in., and No. 2 for those up to 2 in. diameter. The price of the former is 10s. 6d., and of the latter 12s. 6d. The brass mount of the hood may be provided with a thread, or rubber or cork adapters can be employed to attach the hood to the lens tube.

For the Staley-Wheeler high-power telephoto lenses, which Messrs. Staley are now placing upon the market, a special form of tube is made, 9 in. in length, and divided in the centre into two parts each 4 in. long. This form of construction is necessary for telephoto work at high magnification, but the simpler and more portable form of hood, which we have just described, should be sufficient for more moderate power telephoto and for the general run of photography.

**The Tenax Pocket Camera.** Made by C. P. Goerz, 1 to 6, Holborn Circus, London, England.

In their new folding pocket camera the Goerz firm have followed a design quite distinct from that of the universally known "Goerz-Anschütz." The Tenax is built with an extending baseboard which covers the lens and shutter when the camera is closed for carrying. The baseboard thus permits of considerable extension of the bellows, and in the quarter-plate camera sent us for examination the distance from lens diaphragm to plate is 10½ in. This, in a camera which closes to 1½ in. in thickness, evidences a careful construction. Another feature of the Tenax is the extending front. On the baseboard being let down, a pair of steel bands pull the front out to the position of focus for infinity, and in doing so coil themselves in a small barrel on the front of the baseboard. Thus,



to prepare the camera for a snapshot at infinity, all that is necessary is to open the instrument. For focussing nearer objects, the focussing scale is used in the ordinary way, and as the camera must be set back to infinity before it can be closed it is bound to be always in the same condition when opened. The camera is made for use with single dark-slides or with the film-pack adapter, which two pieces of apparatus are made interchangeable. The camera has considerable rise of front and cross movement, the latter, of course, being equivalent to rise of front when the "landscape way" of the plate is used. It is fitted also with reversible finder, and the Goerz "Sector" shutter, giving exposures from one second to 1-250 of a second. The whole mechanism is worthy of the reputation of the Goerz house for beautiful mechanical work, yet the camera costs, in the quarter-plate size, with Goerz Syntor lens and film-pack adapter, £8 8s.

**The Isostigmat Lens. Series IV. (wide angle), f/6.3.** Made by R. and J. Beck, 68, Cornhill, London, England.

This is one of Messrs. Beck's latest introductions, and, judging from the specimen submitted to us, it is likely to be a valuable instrument. The lens we have tested is of 4½ focal length and full aperture of f/6.3, and covers an angle of about 80deg., these particulars being according to our own measurements. It is intended for use on a quarter-plate as an ordinary lens, or for a half-plate when used as a wide angle. In the latter case the rising front can

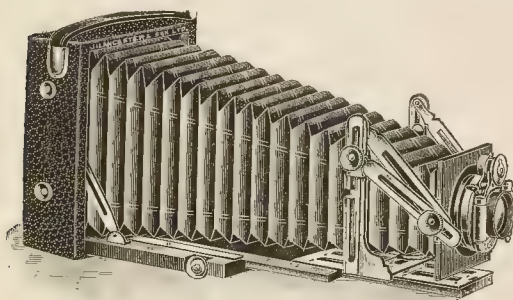
be used to an extent of  $1\frac{1}{2}$  in., while in the former a rise of  $2\frac{1}{2}$  in. is available. The lens behaves exceedingly well in our hands. It has a very flat field, and the correction for oblique light is as strikingly perfect as in the older types of Isostigmatar. The prices are moderate, seeing that they range from £3 15s. to £5 5s. in a series



of five lenses of focal lengths from  $3\frac{1}{2}$  in. to  $7\frac{1}{2}$  in. A highly corrected wide-angle lens, with an aperture of  $f/6.3$ , is, of course, a most useful introduction to architectural photographers, for while it will generally be necessary to stop down to gain depth, yet the full aperture can always be used for focussing, which is a great gain in a dark interior.

Lancaster Long-Extension Cameras. Made by J. Lancaster and Son, Ltd., Broad Street, Birmingham, England.

Several models of a camera with a new pattern of extending front have been introduced by the well-known Birmingham firm, both in the hand-stand pattern, and in the usual type of stand camera. The figure shows the former in one position, from which it will be seen that the pair of double supporting struts permits, not only of any degree of swing to the front, but also allows of the front being raised until it is held perpendicularly over the fixed struts, a position

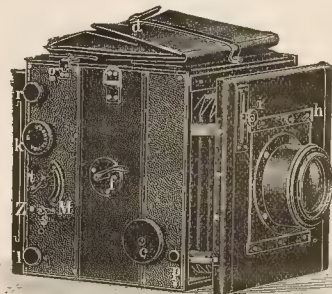


which gives a rise of front far in excess of what is likely to be required in everyday work. Moreover, when these special positions are not required one of the pair of sliding struts acts as a guide to the other, and allows of the front being raised or lowered perpendicularly to the camera base. The hand or folding pattern is sold in quarter-plate size at £3 10s., with one double dark slide, or for £4 15s., with one slide, "Unicum" shutter and Lancaster "Recti-plat" lens. The stand pattern in half-plate size with R.R. lens, roller-blind shutter, rotating turntable top, and one dark slide costs £4.

The "Heliar" Reflex Camera,  $3\frac{1}{2}$  in. by  $2\frac{1}{2}$  in. Made by Voigtlander and Sohn, 12, Charterhouse Street, London, England.

In adding a camera smaller than quarter-plate to the series of "Heliar" reflex instruments the firm of Voigtlander, we, think, has shown that it fully realises the advantages of the reflex type of instrument, and our own experience certainly leads us to the opinion that for a small tourist instrument the  $3\frac{1}{2}$  in. by  $2\frac{1}{2}$  in. size is preferable to the quarter-plate. The only condition which becomes even more stringent in the case of a small reflex camera is accuracy of workmanship, the smaller working parts calling for still better workmanship. In this respect it is impossible to find fault with the "Heliar" camera, which mechanically is a beautiful instrument, and most convenient and rapid in practical work. For the  $3\frac{1}{2}$  in. by  $2\frac{1}{2}$  in. plate a "Heliar" lens of  $4\frac{3}{4}$  in. focus is fitted, and the total extension from focussing screen to lens panel is 8 inches. Complete, with its lens and three double dark slides, the camera costs

£16 5s., or for £19 5s. is sold with one of the Voigtlander telephoto attachments, giving  $2\frac{1}{2}$  times magnification, and thus permitting



long focus pictures to be obtained at a working aperture of no greater than  $f/11$ .

"Oxys" Anastigmatic Lenses. Series II. Made by Aldis Bros., Old Grange Road, Sparkhill, Birmingham, England.

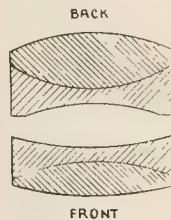
In this new lens of the well-known Aldis firm, the doublet form of construction has been retained—that is to say, the lens possesses only four reflecting surfaces, and is therefore free from liability to flare and ghost images which are less easy to avoid in lenses of many air-spaces. Also a doublet lens is



readily cleaned by the user without the risk of disarranging the glasses. Whilst retaining these advantages, Messrs. Aldis have aimed to secure (1) a more perfect correction for flatness of field, and (2) a "back focus" shorter or longer than the equivalent focal length of the lens.

The specimen sent us is No. 11 of  $5\frac{1}{4}$  focus and aperture  $f/5.6$ , both of which measurements we have confirmed. It is recommended for use on a quarter-plate, and it is stated to cover  $6 \times 4\frac{1}{2}$  with a medium stop. As a matter of fact, we find that an aperture of  $f/16$  is fully effective at the corners of the larger half-plate.

As regards the adjustment of the "back focus," or camera extension, as Messrs. Aldis prefer to call it, the lens we have examined requires 4.9 in. from the face of lens panel to the focussing screen for the above-mentioned focal length of  $5\frac{1}{4}$  in. A short extension



is, of course, often very convenient, but the makers of the "Oxys" have recognised the fact that a comparatively long extension is also often desirable, especially in reflex and magazine cameras. Therefore the new lens has been designed so that it will work equally well when turned the reverse way round. Several of the lenses on the list are so mounted as to give an extra long extension as compared with the focal length. The No. 10, for example, requires an



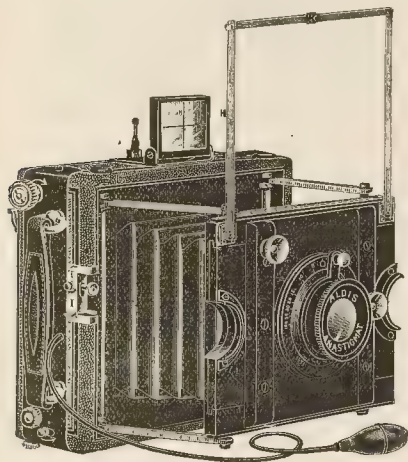
extension of 5.2 in., though its focal length is only 4.85. The following table gives the range available:—

No.	Focal length.	Camera extension at infinity.	Recommended for use on	Plate covered at medium stop.	Price of "Oxys" Lens mounted in:—		
					Iris mount.	B. & L. "Unicum" shutter.	B. & L. Automat shutter.
10	4.85	5.2	4½ × 3½	5½ × 3½	£3 0 0	£4 5 0	£4 10 0
11	5.25	4.9	4½ × 3½	6 × 4½	3 0 0	4 5 0	4 10 0
12	6.85	6.4	5 × 4	8 × 5	4 10 0	6 7 6	6 16 6
13	7.7	8.2	6½ × 4½	8½ × 6½	5 0 0	7 10 0	7 16 6
12a	6.85	6.4	5 × 4	8 × 5	3 10 0	4 15 0	5 0 0
13a	7.7	8.2	6½ × 4½	8½ × 6½	4 13 6	6 11 0	7 0 0

Those who desire a well-corrected lens of a useful type should be able to suit themselves from this list.

The No. 1A "Ralli" Folding Focal-Plane Camera. Sold by W. Butcher and Sons, Limited, Camera House, Farringdon Avenue, London, England.

In offering a camera of the convenient focal-plane type Messrs. Butcher have placed at the disposal of amateur users an instrument which opens out on its four nickelled struts to a very rigid position. The camera is fitted with cross and rising fronts, and carries a lens direct vision-finder of the usual type in addition to a full-size non-magnifying finder which folds up on front of the camera, and is a type of under which is as simple and efficient as any other. The shutter is arranged to work at two tensions, rapid and extra rapid, whilst the



operation in the width of the slit can be very conveniently made, being easy to increase the speed of the shutter at the instant before exposure within a range represented by 1-500 to ½ second. The times of exposures is clearly shown on the scale on the side of the camera, and the alteration of the speed is made just in the same manner and quite as easily as focussing by the usual rack-and-pinion focussing scale. The camera is fitted with lens working at  $f/8$ , in focussing mount, permitting all objects for infinity at two yards being focussed. The price complete with hooded focussing screen and two double dark slides is £7 7s.

Primo-plane Cooke Lenses. Made by Taylor, Taylor, and Hobson, Leicester, England.

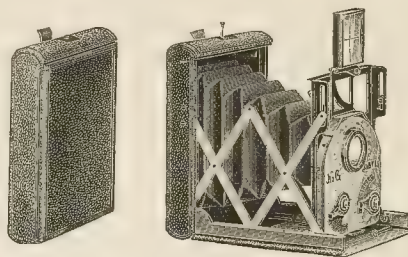
Messrs. Taylor, Taylor, and Hobson have submitted to us two of their new Primo-plane lenses designed according to Mr. H. D. Taylor's patent specification No. 7,661, 1906, which we published in our issue of April 12, 1907. Reference to this shows that the meaning of the term "primo-plane" is flatness of the primary image surface; in other words, the lens is intended to render tangential rays sharply over a very wide flat field. The construction permits the use of a stop either in the interior of the objective or in front of the lens just grazing the front lens, and a specimen of each kind of construction has been submitted to us. The lens at present is made

only in the focal length of 5in., and it is intended for use as a wide angle lens on a half-plate. The aperture is marked  $f/6.5$  in both patterns, but our measurements show that the lens with interior stop is somewhat faster than this, while the other with front stop is a trifle slower. In fact, we make the one  $f/6.35$  and the other  $f/7$ . By reversing the lenses these apertures are respectively reduced to  $f/6.2$  and  $f/6.7$ , so that a variable rapidity may be looked for if the lens is used for enlarging purposes. It is, of course, not intended for such work, but as lenses are commonly put to all kinds of purposes by their owners, quite regardless of what their makers designed them for, it may be useful to point out this peculiarity. The central definition of these lenses is as fine as can be wished for, and they should prove most useful instruments to all who want wide-angled objectives of large aperture. The price of the 5in. lenses is £4 12s., and larger sizes can be made to order.

The "Sibyl" Pocket Camera. Made by Newman and Guardia, Limited, 90-2, Shaftesbury Avenue, London, England.

In the "Sibyl" Messrs. Newman and Guardia have produced a pocket camera indeed. It must be a couple of years or more since we saw the first working instrument, and we, with no doubt many others, have chafed at the delay in bringing the camera on the market. Procrastination, however, in this case is a virtue, since it is a sign of the makers' determination not to issue an article until it is as good as they know how to make it, which means a good deal in the case of the "N. and G." firm. Moreover, though many of the working parts of the "Sibyl" are machine-made, the fitting together of the instruments involves skilled hand labour, the result of which is seen in the smoothness of working and the accuracy of the movements. The outcome is an instrument which the makers can justly claim to be the embodiment of all the qualities which man can reasonably ask for in an instrument to be carried in his pocket, always ready for work, and yet of such size that he will not feel its weight or bulk any more than that of his cigar-case. To what extent Messrs. Newman and Guardia will do business with those who must have a small and yet perfectly practicable instrument can best be judged by pointing out that in the "Sibyl" they offer a camera which—

1. Measures 5in. by 3½in. by 1 3-16in., including the slide carrying a plate ready for exposure.



2. Is without a single projection or exposed piece of mechanism when folded for the pocket.

3. Permits focussing up to two yards, and can be set to come to any focus on opening the camera.

4. Has a vertical rise of front over one-third the length of the picture.

5. Carries finder showing an image over one-third the size of that obtained in the camera.

6. Is fitted with a shutter giving exposures from ½ to 1-100th second.

The general appearance of the camera, open and closed, will be seen from the two figures. The size of plate is the 3½in. by 2½in., and the dark slide is so made that the full plate is exposed up to the edges, with the exception of ¼in. at one end. As the figures show, the method of extension adopted in the "Sibyl" is the lazy-tongs, permitting the front to remain anywhere between its two limits of movement. The front is not dependent on runners for its guidance, and thus requires scarcely any inducement to leave the back, on the baseboard cover being opened. It locks gently into the catch on the focussing, and is then found to have fixed itself with very great rigidity—to an extent, indeed, which seems out of all proportion to the effort needed to attain it. Without a

single screw to twist or bolt to turn, the front clicks into a position which could not be more rigid if there were half a dozen struts to hold it.

The point at which it stops is controlled by the separate focussing adjustment—that is to say, the camera can be set to open in focus on any distance from two yards to infinity. This adjustment thus enables one to carry about the camera in readiness for work of any particular kind, say open landscape requiring the focus at infinity or figures needing it to be at about three yards. The camera can be closed whenever the adjustment for focus is set.

The front is provided with an amount of rise, which may surely be considered enough for all ordinary conditions—that is to say, the lens will rise over one-third the vertical height of the picture, a movement which is perhaps the most valuable a camera of this kind can have, since its very portability will bring it before all descriptions of subject. The finder is of the direct-vision pattern, and is turned up on the lens front in an instant. A collimator pointer on the back of the camera comes into position automatically, and disappears in the same way on the camera being closed.

The shutter of the "Sibyl" is made in the manner familiar to users of N. and G. cameras—that is, entirely of metal—and with pneumatic regulation. It is self-capping, and gives a range of exposures, specially tested and hand-marked, of from  $\frac{1}{2}$  to 1-100th second. The plates are carried in single metal slides, in which each is inserted quickly and fixed in place by spring catches, which will hold a cut film just in the same manner, and keep it fit without the assistance of a carrier. The dark slide—and the focussing when it is used—is held in place by a light spring, which quickly but firmly presses it into register. The arrangement is much speedier in practice than a pair of grooves.

A rapid glance over our specification of the camera's movements will, perhaps, suggest the thought that neither the latter nor the means taken to obtain them constitute any novelty in photographic manufacture sufficient to justify a notice of the above length. But that criticism leaves out of account the extraordinary small bulk to which Messrs. Newman and Guardia have reduced an instrument possessing a list of movements which includes practically all that is required of a camera. That they have achieved this end by a simple method of construction should argue all the more for the popularity of the camera, which, as a matter of fact, is free from complicated mechanism, and has no working parts at all that are not easily accessible. We have never handled a camera which came near the "Sibyl" in the combination of practical efficiency and slim dimensions. The price of the camera, with "Cooke" Series III. lens ( $f/6.5$ ) of 4.4 in focus, and with six dark slides in leather case, is £9 9s. If a Zeiss II. B Tessar ( $f/6.3$ ) replaces the "Cooke" the price is £10 10s.

Thus far we have spoken of the  $3\frac{1}{2} \times 2\frac{1}{2}$  camera, a size which we ourselves prefer to the quarter-plate. However, in response to a demand for a slightly larger instrument, Messrs. Newman and Guardia have just brought out a quarter-plate size of the camera which is very little larger than its forerunner—it measures  $6 \times 4\frac{1}{2} \times 1\frac{1}{8}$  in.—and is in every respect on a par with the smaller size. The quarter-plate is fitted with the Zeiss Series II. B Tessar,  $f/6.3$ , of  $5\frac{1}{8}$  in. in focus, and costs, with six slides in leather case and focussing screen, £14 14s.

The Hermagis Anastigmat. Sold by Mr. F. C. Clarkson, Colchester, and 4, Fenchurch Avenue, London, England.

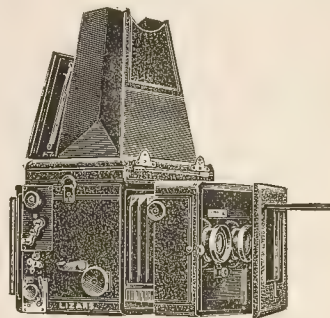
This is an extremely rapid lens, suited for portraiture, groups, enlarging, and for high speed hand camera work, and it appears to be remarkable for its fine quality and low price. A  $6\frac{3}{8}$ -inch lens, working at  $f/4.5$ , and covering a half-plate well, is not often to be obtained for £6 15s. The specimen submitted to us is No. 7A, of  $6\frac{3}{8}$  inches focus, and full aperture, according to our measurements of between  $f/4.5$  and  $f/5$ . It covers a half-plate excellently, and should therefore be extremely well adapted for use in a quarter-plate reflex camera having ample rise of front. The lens is apparently of symmetrical construction, and the single back component gives excellent definition when stopped down a little. The complete doublet is remarkably well connected, and there is no doubt whatever that a purchaser of this lens gets wonderfully good value for his money. A 5-inch lens, with iris diaphragm, is only £4 17s. 6d., or less than the cost of many other anastigmats of less than half the speed. The lens is listed with both iris diaphragms

and with Waterhouse stops, and it can be supplied in focussing mounts at an extra cost of from 17s. 6d. to £1. It is specially recommended for photography in colours, from which we may infer that special attention has been given to its chromatic corrections.

Lizars' Cameras. New Models. Made by J. Lizars, 101, Buchanan Street, Glasgow, Scotland.

The 1908 model of the excellent hand-stand "Challenge de Luxe" camera shows the still further improvements which have been made in this apparatus—namely, that the reversing back is now replaced by a rotating back, making the cameras as well nigh perfect as can be expected of human care and ingenuity.

The latest introduction by Mr. Lizars is a stereo postcard camera, size  $6\frac{1}{2}$  in. by  $3\frac{1}{2}$  in., of the well-known "Challenge" de Luxe reflex camera, of which we have in the past been compelled to speak in appreciative terms. The new size is an instrument which, while convenient for the general purposes of the tourist, takes a picture



which is large enough for press purposes, and is, moreover, a very convenient size for stereo work. Closed, the camera measures outside 8 in. by  $7\frac{1}{2}$  in. by 6 in., and, whilst having all its working parts covered, such essential portions of the apparatus as the focussing screen, mirror, and the lenses are instantly got at. The lenses as arranged for stereoscopic work may be given any necessary separation, which is shown by the scale on the lens panel, and in other respects the camera has all the good points of the well-known type of reflex. With three double book-form dark slides, carrying plates  $6\frac{1}{2}$  in. by  $3\frac{1}{2}$  in., and with a pair of 6 in. Beck symmetricals working at  $f/8$ , the price is £18 17s. 6d. One point which should not be overlooked is the ingenious stereoscopic division, which is made in two parts, hinged top and bottom, and thus lies perfectly flat out of the way when the camera is being used for panel or postcard pictures.

We may also refer to the special tropical models of the "Challenge" stand cameras, double extension instruments, with the full range of movements, rising, falling, and swinging front, swing back, wide-angle movements, and rotating turntable top, etc., which are obtainable in several patterns, built in teak and brass bound, specially for users in the tropics, a specialty of Mr. Lizars in all patterns of his cameras.

The "Multisecto," No. 2. Sold by Jonathan Fallowfield, 146, Charing Cross Road, London, England.

Some months ago we reviewed the new repeating back introduced by the firm of Fallowfield primarily for attachment to a studio camera, and we then expressed our good opinion of the facility afforded by it for the making of midjet and other small-sized photographs, on plates of the standard sizes. The success of the apparatus is no doubt the cause of "Multisecto No. 2," which is destined to perform a similar duty not only in the studio but afield, inasmuch as it is made for fitting to an ordinary half-plate camera. In taking it into use it replaces the reversing back, and in the case of three types of camera—the Fallowfield Alacrity, the Thornton-Pickard Imperial, and the Houghton "Victo's"—nothing more is necessary than to detach the reversing back and place the "Multisecto" in position. The dark-slide of the camera equally fits into the groove of the "Multisecto." Practically any half-plate camera will carry the "Multisecto" after a trifling adjustment. In order



g, the reversing back and a dark-slide should be sent to ensure correct cutting of the apparatus.

Those who have seen the older model or descriptions of it need not be told that the principle of the apparatus is the use of a "Secto," or mask, which is placed in the proper position by means of a notched bar, adjusted from outside the camera. By this means, once the subject has been focussed the whole series of exposures on one plate is made without inspecting the ground glass, and the

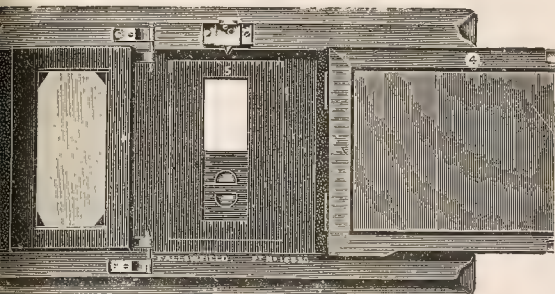


Fig. 1.

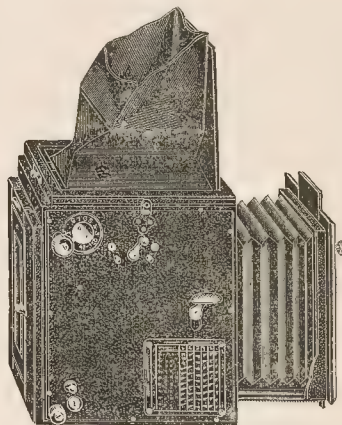
vision of the plate is done very accurately and quite automatically. In some respects the No. 2 pattern is an improvement on its predecessors. For example, some "Sectos" are fitted with sliding metal as shown in Fig. 1; each row of pictures thus commences at the same level. The *modus operandi* is as follows:—

When a photograph is required, say, with No. 5, which takes five midget pictures on a half-plate, the No. 5 "Secto" is put in position and the subject correctly focussed on the screen, the notched bar No. 5 is placed between the grooves and the slide is pushed along to the first catch-point, when the slide may be pulled partly out, then the spring bolt should be allowed to lock in the first hole and exposure made, and a further notch given till five movements and exposures have been made. Care should always be taken to see that the shutter of slide clears by a few inches the end of the "Multisecto." After five horizontal moves the slide is pushed

tures on his half-plate to two only. We illustrate an excellent example of one-third exposures, and would refer the reader further to the new "Multisecto" circular, which gives all the necessary particulars as to the numerous mounts also obtainable. The price of "Multisecto" itself, with nine "sectos," and a set of notched guide-bars, is 60s.

The "Sickle" Reflex de Luxe. Sold by O. Sichel and Co., 52, Bunhill Row, London, England.

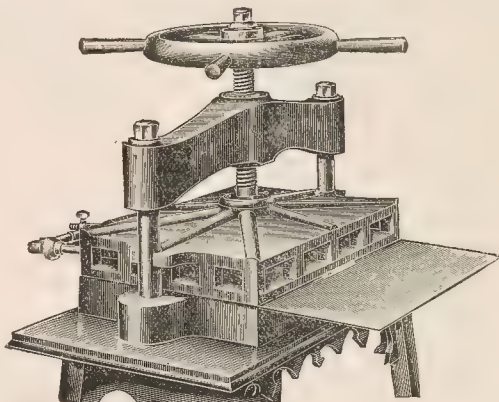
In this example of the reflex principle in hand cameras means are provided for keeping the mirror always in the down position unless advantage is taken of the locking lever, which keeps it up for time exposures. The mirror being thus locked up, the focal plane shutter may be employed by pressing on the ordinary release to open, and again pressing to close, the shutter working very smoothly. Alteration in the width of the slit is very conveniently done with the winding key, and a series of exposures from  $\frac{1}{4}$  second to the most rapid are obtainable by adjusting the spring tension and the width



of the slit aperture. The camera is provided with a very convenient hood, rising front, and has a good extension. It is also fitted with a rotating back, which locks in both a vertical and horizontal position, and has as well a hooded focussing screen, so that, when such is necessary, it may be used held level with the eyes and the image focussed direct upon the ground glass. The price of the camera without a lens is £10 in the quarter-plate size, but Messrs. Sichel issue it fitted with their  $f/6.8$  "Fulmenar" anastigmat lens at £12 10s.

The "Profex" Dry Mounting Press. Sold by J. J. Griffin and Sons, Limited, Kingsway, London, England.

The acknowledged practical and satisfactory process of mounting



photographs to-day is the dry-mounting method. The advantages of cleanliness, perfect adhesion, and the fact that the mounts remain perfectly flat are so important that for all good class photography wet mounting must disappear. With this in view, Messrs. Griffin



Fig. 2.

er of the "Secto," and the space altered to the bottom when the camera is tilted or lens lowered, so that the subject to be taken will again appear in the focussing screen, and the operation is repeated. When once the idea of the movements has been obtained, the "Multisecto" will be found extremely easy to work; each "Secto" follows the above operation, but each has different moves; Nos. 13, 19, and 20 move horizontally so that it is only necessary to focus once.

Not only for portraits, but for landscape work, and particularly making the most of Autochrome plates, the new "Multisecto" would be a most useful and popular instrument. As supplied by Fallowfield, the size of the pictures can range from 3 x 2 in. to 4 x 5 in., a total number of eleven different shapes being obtainable. It is to say, the worker can ring the changes from eighteen pic-



have in their "Profex" machines produced a very practical apparatus at a moderate price.

This machine is large enough to meet the needs of most professionals. The size of the platen is 20 by 14, and it is possible to insert a mount 22 inches wide, so that with a single pressure one can mount a print, size 20 by 14, or with a series of pressures any print that is not more than 20 inches wide. The special feature of the machine is that the combined heating chamber and platen is hung loose on the capstan-head screw, so that when the wheel is turned the platen travels down and finds its own level, thus any little unevenness in the thickness of mounts will not interfere with the correct working. The price for the machine, complete with gas heater, is only £7 18s. 6d. Messrs. Griffin also supply all accessories, such as fixing-iron, spirit lamps or Bunsen burners for heating fixing-irons, adhesive tissue, and zinc plates for placing over the prints while mounting.

**Stand Cameras.** Made by the Camera Construction Company, Eagle Works, Durham Grove, Hackney, London, England.

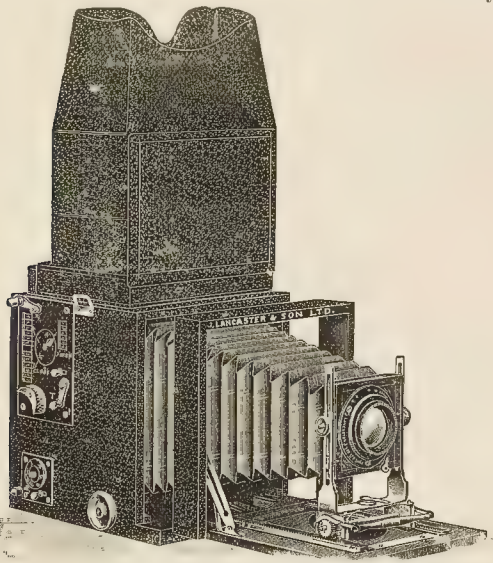
Of three models of half-plate camera sets submitted to us by the Camera Construction Company we specially select the "Eagle" triple extension as a half-plate instrument, possessing all the modern movements, and obtainable, complete with lens, shutter, and tripod, at the reasonable price of 70s. The camera is fitted with rack and pinion adjustment for both back and front, it has swing and reversing back, swing and rising front, in addition to an ample cross front movement. In a number of minor respects, such as catches, turntable, and automatic stops, it is a convenient instrument in practice. One good feature is the shape of the bellows, which, even with the front raised to its maximum, does not cause any cut-off of the subject on the plate. The camera is certainly an excellent instrument for general photography, and particularly for the tourist, to whom excessive weight is a consideration.

The "Falcon" camera, which is made only in half-plate, at 60s., has the movements of the triple "Eagle," save only the extension, although the supporting struts permit almost as great an extension as with the more extensive apparatus.

In the "Condor" set rather more than the usual double extension is provided. There are self-erecting front and wide-angle movements to the back body, the price in half-plate size being only 57s. 6d. This set is obtainable also in quarter-plate and whole-plate, and all three are certainly most reliable instruments and extremely good value for the money asked for them.

**The Lancaster "Plano" Reflex New Model.** Sold by J. Lancaster and Son, Ltd., Broad Street, Birmingham, England.

We have reviewed in the past the reflex cameras issued by this

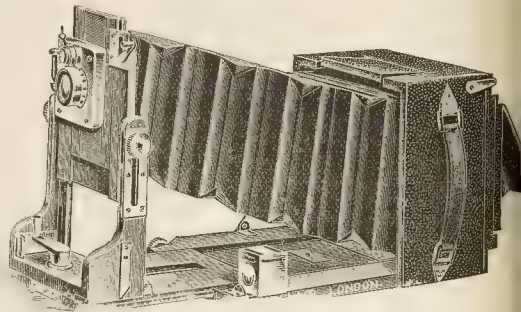


well-known pioneer firm in amateur photographic requisites, but the new model illustrated here will be seen to have a construction which

sharply marks it out from other instruments on the market. The back portion of the camera containing the focal-plane shutter and mirror mechanism is on the customary lines of a reflex, but the extension is practically that of an ordinary camera, and possesses a latitude of movements which it is difficult to secure in a camera which is the box form throughout. The new model is made in two patterns, one a double extension giving 9 inches between lens and plate in quarter-plate size, and the second a triple extension, giving a total distance of 15 inches in the quarter-plate size, a corresponding extension being provided in the 5 x 4 and half-plate sizes. Both models are very well made, are fitted with reversing back, considerable rise of front, and are obtainable with various standard anastigmat lenses. Without lens the camera in the quarter-plate size costs £5 5s. in the No. 1 pattern, and £6 6s. in the No. 2.

**The Tropical "Una" Camera.** Sold by James A. Sinclair and Co. Ltd., 54, Haymarket, London, England.

Of the "Una" hand-stand camera as an instrument of the best design and workmanship we have had occasion to speak in the highest terms. It is what one expects of Mr. J. H. Sinclair, and of his business policy of supplying only apparatus which he, good photographer that he is, can conscientiously recommend. The "Una" shows in a dozen ways the determination of Mr. Sinclair's firm to consider first the practical working qualities of his instrument, and though it is equal to the widest range of work, it is an instrument of few movements and working parts. This, however, by way of reference to the pattern of the "Una" made specially



for users in tropical countries. The body is of teak, French polished, instead of leather-covered, and brass-bound. These variations from the home pattern make the instrument capable of withstanding the severities of hot and moist climates and the attacks of tropical insects. The pattern is sold at an increased cost of 10s. in the quarter-plate size, 15s. in the 5 x 4 in. and 9 x 12 cm., and 20s. in the half-plate and 7 x 5 in.

**The "Mite" de Luxe Reflex.** Sold by A. E. Staley and Co., 12, Thavies Inn, Holborn Circus, London, England.

This reflex camera for a  $3\frac{1}{2} \times 2\frac{1}{2}$  plate is in many respects similar to the "Royal" reflex, with which Messrs. Staley's name is favourably associated. The mirror is made to fall automatically into the down position, and is "locked up" when giving time exposures or using the mirror in the ordinary way. The arrangement does away with the danger of uncovering the plate without rewinding the shutter. The focal-plane shutter has convenient adjustment of width of slit and tension of spring, and a widest range of exposures can be given with it, the adjustment in all cases being made from outside the camera. The extension is  $7\frac{3}{4}$  inches from lens panel to plate, and lens of as short a focus as  $4\frac{3}{4}$  inches can be used. The camera has rotating back, rising front, and convenient collapsible hood. It is sold with six single metal dark slides at seven guineas. Messrs. Staley fit it with their well-known "Euryplan" and other anastigmat lenses. A camera of this small size, it may be added, is particularly to be recommended when of the reflex pattern, inasmuch as the subjects can be very accurately included on the plate, so that for lantern slide making and enlarging a  $3\frac{1}{2} \times 2\frac{1}{2}$  negative is as useful, indeed more useful, than quarter-plate.

The "Royal" reflex, also of Messrs. Staley, possesses the same range of movements, and is a type of instrument well suited for professional work.



Audio Backgrounds and Accessories. Sold by F. E. Jones and Co., 22, Gray's Inn Road, London, England.

The great improvements which have been made of late in the backgrounds at the service of photographers were evident to us the

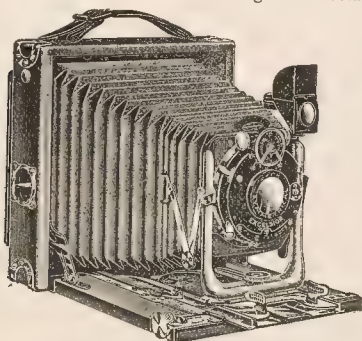


[Registered Design.]

er day on inspecting a series just introduced by Messrs. F. E. Jones and Co., a distinctive feature of which is the excellent com-  
mise which has been made between picturesque character in the  
ground and subjects before which an ordinary every day sitter  
be appropriately posed. Messrs. Jones have commendably got  
y from the tapestried salon and the gateway of the ducal castle,  
instead have given us a series of backgrounds, with accessories  
match, which go well with the ordinary persons who form ninety-  
out of a hundred of the photographer's sitters. This, we say,  
have done while still retaining highly picturesque qualities in  
the grounds and accessories. Both are issued at remarkably  
erate prices, the average price of a background 6ft. by 6ft. 6in.  
g 27s. 6d., or 50s. 8ft. by 8ft. We select one example (accessory  
background complete £5 10s.) to illustrate these modern introduc-  
s, and recommend professional photographers to write for photo-  
s illustrating the very large variety.

Tropical "Excelsior" Hand Stand Camera. Sold by W. Butcher  
and Sons, Limited, Camera House, Farringdon Avenue, London,  
England.

is is an instrument with a wide range of movements, yet pos-



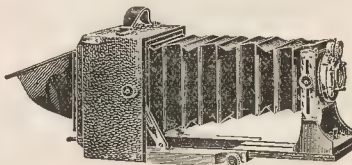
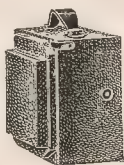
g two qualities which are all-important to the worker purposing  
e it to foreign countries. In the first place it folds up very

compactly, and in the second has ample range of movements as  
regards rising front, extension, etc., to enable it to deal with prac-  
tically every subject. The woodwork is of teak and the metal parts  
of brass, where a metal of this strength is needed, whilst aluminium  
is also used to reduce the weight. The bellows, which are fitted  
with supporting strut, are specially treated to withstand the attacks  
of insects. The construction and design of the apparatus and its  
neat brass binding and other attachments make it a most suitable  
apparatus for use in trying climatic conditions. It is sold in quarter  
and half-plate sizes at £6 and £7 15s. respectively, which prices  
include two focussing scales engraved with distances for both the  
complete lens and the single combination, brilliant finder with hood  
and spirit level attached, and three double dark slides. Special  
mention should be made of the rack-and-pinion cross front and rising  
front movements, which enable the lens to be displaced in every  
direction with the utmost nicety.

THE WATSON "SILENT" STUDIO SHUTTER.—A new model of this  
shutter is now issued by Messrs. W. Watson and Sons, 313, High  
Holborn, London, England, the semi-circular bellows pattern being  
retained, but a new device for the release being adopted. This latter  
is actuated directly by the antinous metal release, and allows of the  
shutter being operated with ease and certainty with one hand. The  
new pattern of shutter is sold at the same price as its predecessor,  
or the new arrangement can be fitted to an existing shutter at the  
price of 8s. 6d., including six feet of flexible connection. The  
prices of the shutter range from £1 6s. for 3-inch opening to £2 7s. 6d.  
for 8-inch.

THE MULTI-SCREEN.—Professional photographers and others hav-  
ing need to keep prints and portraits at hand for display will be  
interesting in perusing the illustrated circular of the "Multi-  
Screen," the device of Mr. E. Webster, of 101, High Holborn,  
London, W.C. The Multi-Screen consists of a series of hinged  
screens, light but strong, and containing within themselves the  
means for hanging pictures or any part of them. They can also  
be covered in any desired style to accord with existing decoration,  
but their chief recommendation is the large hanging area they pro-  
vide in an astonishingly small compass. Not only this, but pic-  
tures are kept cleaner than when on a wall, and are very quickly  
displayed to full view. Prices of the screens, which can be made  
of practically any size, are obtainable from Mr. Webster at the  
above address.

THE POSTCARD "CORRESPONDENT'S" CAMERA.—A postcard size of  
the substantial correspondent's camera has been added by Messrs.  
J. H. Dallmeyer, Limited, to the series of instruments already well  
known for their solid construction and excellent workmanship. The  
"Correspondent's" is a camera for hard wear and trying work. The  
range of movements in the way of rising and swinging front, swing

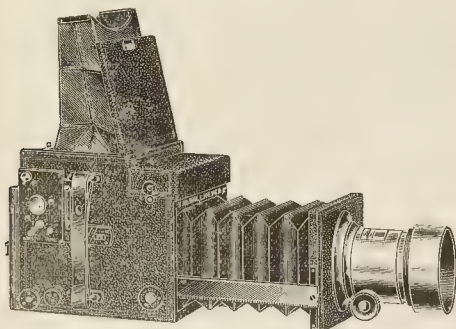


and reversing back and extension is all that is necessary in ordinary  
work. Thus the rising front movement is 2½ inches above the normal  
position, and the camera permits also of the use of wide-angle lenses.  
The new size should gain all the popularity of its predecessors. The  
price of the camera is £7 5s., brass-bound £1 5s. extra, with three  
slides.

PLATE SUPPORTS FOR STAND DEVELOPMENT.—Mr. F. C. Clarkson,  
of Colchester, England, has just issued a little device which is  
certain to be of frequent use in the dark-room. While primarily  
intended to permit the novice in stand or time development to work  
this process in the ordinary dishes (the supports allowing two plates  
to be placed safely, one film down and the other film up, in the  
dish), it is easy to see that for many operations other than develop-  
ment the inverted position of the plate would be an advantage, and  
the metal supports therefore, which are sold at a price of 1s. 6d.  
per pair, each being 4½in. in length, are a recommendable addition  
to the dark-room outfit. With three pairs of supports four half-  
plates or eight quarter-plates can be developed in a 10 x 8 dish, and

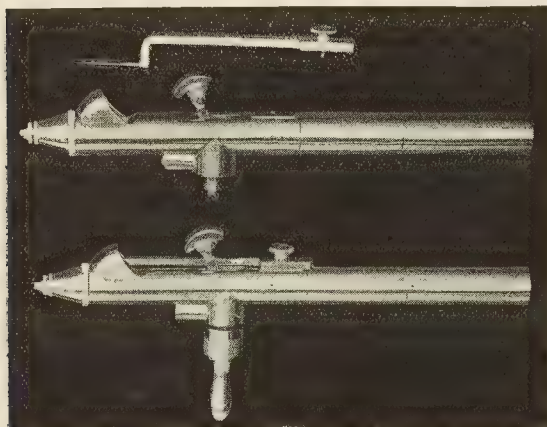
the supports, being of white metal, are not liable to corrosion by photographic solutions.

**THE DALLMEYER "NATURALIST'S" REFLEX.**—This special form of the Kershaw reflex camera adapted by Messrs. J. H. Dallmeyer, Ltd., for telephoto work, has been modified for the present season by making the body smaller and providing the extension necessary for high-



power telephoto work by means of a rigid supplementary tube. The alteration has the advantage that the camera is thus suited exactly for ordinary work, and that the telephoto extension is obtained in the most rigid manner. The price of the new model remains the same.

**AIROSTYLE NEW MODEL.**—Mr. Autholtz, of the Airoystyle Syndicate, Limited, 35, St. Bride Street, E.C., has submitted for our inspection an improvement on their first model, although there seemed little fault to find with the original pattern. The new one is certainly a marvel of accuracy and smoothness of movement. The finger-piece, which was previously fixed at the side of the airoystyle, is now on the top, which seems to be preferred by many artists. The finish



of the airoystyle is undoubtedly perfect, and its strength allows of quite rough usage without the probability of its getting out of order. The Airoystyle Syndicate, Ltd., are manufacturers also of all classes of air-brush up to the largest instruments used for industrial purposes. One pattern may be appropriately referred to, namely, that supplied for applying lime and colour washes to wall and roofs, and therefore of interest to photographers undertaking any work such as whitewashing a wall or the studio roof. An air-brush works very quickly compared with application by hand in the ordinary way, and the apparatus sold by the Airoystyle Company at £7 15s., complete with rubber tubing, hand-piece, and the necessary tool, might conceivably be an economical investment to those compelled by force of circumstances to carry out such work for themselves.

**MINIATURE FRAMES.**—The photographic miniature—whether by the ceramic process (which gives the miniature in its highest form) or by the carbon or other processes, which, nevertheless, are capable of producing pleasing results—being a profitable branch of a photographer's

business, it is particularly gratifying to us to draw attention to beautiful miniature frames made by the Art Photographic Supply Co., Grosvenor Buildings, Steelhouse Lane, Birmingham. A number of these lie before us, and we can sincerely commend them to makers of miniatures, whose results must be very good indeed be worthy of the fine setting which is thus available. It was Sir Humphrey Davy at the Royal Academy who once exclaimed, "What an extraordinary collection of fine frames," and the remark might appropriately be repeated in reference to many examples of framed photographs. However, to instance one or two of the productions of the Art Photographic Supply Co., we would take, for example, No. 503, a frost-gilt, hand-made, reeded frame with frost-gilt metal mat and supporting strut, the price of which to take oval 3 x 2½ in. is 8s. 6d. Another choice pattern is the "Hilliard



the No. 2 size of which has an oval opening of 2 x 2½ in., and consists of frost-gilt surround ornamented with scroll work. The company also make a special feature of circle and oval frames, plain or ornamented and supplied complete in beaver leather case, the workmanship being extremely nice, and yet issued at most reasonable prices. For example, No. 33, 1½ in. circle, in red beaver case, is priced at 9s. 6d., whilst an oval frame, with opening 2 x 1½ in., costs, in green beaver case, 7s. 6d. Still another example of the firm's work, which, like the preceding, is wrought throughout their own workshops, is a hand-hammered copper case made with folding doors and copper back, fitted with copper mat and copper fastening; this, with an oval opening of 2 1-10 x 1½ in., costs 4s. All the above, which are only examples of many patterns made by this Birmingham firm, form exceedingly handsome presents, and the full price list, which illustrates many of the patterns, should be consulted by those employing, as they profitably may, the miniature in their business.

## New Materials, &c.

Ilford "Carbon Surface" and "Glossy" Bromide Papers, White and "Ivory." Made by Ilford Limited, Ilford, London, England.

During the past three weeks we have made a considerable number of prints and enlargements on these development papers newly issued by the Ilford Co., each in a white and an "ivory" (cream) colour, and thus amounting in all to four new papers. In writing of our experience we will refer first to the "carbon" paper, which is, of course, a quite distinct paper from the "glossy," although the depth of "ivory" or cream tint, to judge from the prints before us, is the same in each. In examining the very pleasing texture of the prints we cannot help being reminded of the first Ilford bromide paper which we used about the year 1889 or 1890, at the time, we believe, of its first introduction. Many other users then (and still then) of Ilford products will bear us out in our impression that the smooth Ilford bromide paper of twenty years ago was very similar in surface to the "carbon-surface" paper which is now before us. The whirligigs of fashion often bring us back to the same point again, and though an exact comparison of the two papers would be a short of justice to the newcomer, the resemblance in surface, unless we are mistaken, is quite marked, and conveys the satisfaction that in offering photographers a paper which is at the present



time in great demand, the Ilford Co. are drawing on an experience of a score of years and more, and adding another entry to their long and distinguished record. So much for reminiscences. Our object, however, is to write of the new paper as we have found it—namely, a bromide paper with the notable excellences of pure whites, a wide scale of tones, and the rich surface of the semi-matt kind, characteristic of a carbon print as ordinarily produced. The production of these qualities simultaneously in the same material implies technical skill of a high order, but certain it is that the Ilford makers are in their possession of it. In the white variety of the papers one can get all the brilliance one wants. The “ivory” variety gives a somewhat softer effect, the full beauty of which, to our mind, is brought out by sulphide or similar toning. The fact remains that without altering one iota of his method the photographer can obtain a looking rich vigour on the white paper and the softer nuances the “ivory.” It is no derogation to existing Ilford bromides to ascribe the new paper as a valuable addition—the series is made up of distinct numbers—but it is satisfactory to find that the Ilford Co. adhering to its policy of holding back the issue of a new paper until they are satisfied that the product is as good as can be made. We have no hesitation in pronouncing this as our opinion in reference to the present paper.

Of the glossy paper—also white and “ivory”—we are bound to say the good things we have written of the “carbon surface,” with the additional comment that in our very fair use of it we have not experienced any of the scummy and hair-like markings not uncommon on glossy papers. The white paper in particular commends itself as for prints intended for reproduction, whilst the “ivory” paper, sulphide-toned, gives the handsome appearance esteemed by, and familiar to, the young person who purchases the picture postcards for their idols in the shops. We should add that all our results were obtained with the usual amidol developer—whether that recommended by the Ilford Co. or not we have no idea. It should also be stated that the new papers are issued at the standard prices.

**“Artista” Matt-Surface Paper.** Sold by Houghtons Ltd., 88-89, High Holborn, London, England.

To those who realise the condition of professional photography in this country, and its cleavage into the very good and the fairly commonplace, there is no need to explain the advantages of a printing process on which are obtained results of distinctive beauty, and in regard to which measures are taken to secure it from vulgarisation into the hands of the great mass of photographers of the amateur and semi-amateur classes. In other words, a good deal is to be said for a paper which is so issued that it is not likely to be purchased by every amateur maker of photographs which in the main are but passable, and which, in itself, is sufficiently a thing by itself as regards manipulation to be out of the reach of the man whose photographic attainments stop short at P.O.P. or even gaslight printing. Such a paper, however, would fail to fulfil its avowed object of providing the really skilled photographer with a means of giving his customers distinct effects if the results obtained on it were not of the highest order. Considerations such as these must be borne in mind in any evaluation of the step taken by Houghtons, Ltd., in introducing a paper which is offered directly to the professional photographer, and intended for use practically by him alone. Yet it is not too much to affirm that qualities such as we have outlined above are embodied in the new “Artista” paper just issued by Messrs. Houghtons, and our experience with the new introduction, and some account of the circumstances of its supply, may therefore be not without interest.

The “Artista,” we would first explain, is a paper with a natural matt surface, due to the fact that the sensitizing compounds are not wholly on the surface, but are held in the films of the paper, with the result that the natural texture of the latter is obtained in the print. Proof of impregnation of the paper in this way is supplied by exposing the reverse side to light, when an image of considerable intensity is obtained. Moreover, the finished print, however dry, does not crack when folded, there being no enamel-like film in the paper. The paper, in short, is innocent of an emulsion film, or if any such layer there be, it is of such a thin and elastic nature that the paper, in practice, may be treated as a “plain” sensitized material such as is in universal use before the days of emulsion-coated papers. These are, however, factors in the mechanical treatment of the prints, though they imply great freedom in handling they convey little to the actual results obtainable.

To come first to the surfaces and weights of “Artista” paper obtainable, there are in all eight varieties, all amenable to the same toning and fixing baths, and including among themselves a range of effects which we should judge to afford a professional photographer all the latitude he can desire. The “smooth” paper is supplied in two weights (Nos. 1 and 3). The former is the standard make of the paper, and is of the stoutness suitable for prints to be mounted. The latter (No. 3) is a fairly heavy paper, well adapted for attachment by two corners to the folder type of mount. The surface is a fine surface, not to be described as matt, yet without the sheen which is a characteristic of many papers now largely used. It is certainly smooth, though the word alone does not do justice to the delicacy of the surface. The No. 2 is “thick rough,” yet is a paper not too rough for small work. All three of this trio are white papers, which look particularly well when toned to black by the gold-platinum bath, of which later. Nos. 4 and 5 are thick cream papers—No. 4 rough, and No. 5 smooth; whilst in Nos. 6 and 7 we have two papers (both white), the former known as “fine-screen grain-surface,” and the latter as “coarse-screen grain-surface,” and both of minute webbed pattern, which is of great advantage in giving life to the shadows, and is most serviceable in dealing with dark heavy subjects. The finer of the two grains is very fine; the coarser for broader effects is just noticeable enough when a print is held about 15 inches from the eye, from which may be judged the size of work for which it is most adapted. Lastly, we have the “Artista” vellum, with the natural beauty and “coolness” of this material. So much for the textures of the sensitive materials, the best description of which falls short of the originals, and prompts one to run the pen through what has been written, and merely refer the reader to Messrs. Houghtons’ offer to send selections of the papers to bona-fide professional photographers at a nominal price.

In the matter of toning the notable features of the paper are: 1. The number of fine tones obtained with a few baths; and 2. The quickness of the processes. Selecting Grades 1 and 4 (“smooth white” and “thick cream rough”) for our trials, we soon satisfied ourselves as to the ease with which a great range of tones is obtained. In every case washing in five or six changes of water should precede the toning process, after which, five minutes’ immersion in a weak salt bath produces a rich warm tone of reddish brown, showing, as do the prints by all the toning processes, fine gradation, from the brilliant high-lights to the dark tones of the shadows. A very short toning in acetate-carbonate gold bath gives a rich warm sepia, whilst an ordinary platinum bath used after immersion of the prints in weak ammonia (and thorough washing) gives a cool brown tone. A colder tone still—warm black—is given by platinum toning following a short salt bath, and, finally, for the coldest tones, a few seconds dip is given in a tungstate gold bath, and a further toning applied in the platinum solution. The above operations have pleased us by their rapidity, and the results must surely gratify any photographer as much as they have done ourselves, whilst as for variety of results—a range of, say, five sufficiently distinct tones and eight varieties of paper—what more can man desire?

Because our own results have shown us the rich prints and beautiful tones, without a sign of double toning; because the surfaces are distinct and aesthetically pleasing; because they lend themselves to spotting and working up like a platinotype, for these, if for no other reasons, the paper may be described as a power in the hand of the professional worker. There are other reasons, too. Messrs. Houghtons issue the paper either in large sheets or gross packets of cut sizes, a provision which attaches the sale to the professional worker. Hence on two accounts there is good reason for our again reminding our readers of the present special offer to bona-fide professional users.

**XL Bromide Papers.** Made by B. J. Edwards and Co., Castlebar Works, Ealing, London, England.

A notable item in this Colonial issue of the “B.J.” is the appearance on the market of photographic printing papers made by the old-established firm of Messrs. B. J. Edwards and Co., who will be remembered as the first makers of an orthochromatic plate under the Taillier patent of now some thirty years ago. The management of the firm having some months ago been placed in the hands of Mr. E. J. Wall, F.R.P.S., the outcome has been, first, improvements in several respects of the Edwards’ plates, and, now, the introduction of a series of printing papers of some very considerable interest. Our purpose here is to mention the bromide papers made in five grades, namely,

"smooth glossy," "matt," "regular grain," "cream canvas," and "natural surface." Of these the matt and glossy papers call for no special remark, except that our own trials of them have shown them to be papers giving very pure whites and good gradation into the intense rich blacks. The chief interest, however, attaches to the other brands of paper, and particularly to the "regular grain," which is a paper with a peculiar minute dotted surface which gives a singularly pleasing effect not only in portrait subjects, but for landscape work, and is particularly useful in breaking up hard masses of shadow and removing what would otherwise be an eyesore in a print or enlargement. The "natural surface" paper is very appropriately titled, inasmuch as it does not suggest in its appearance the surfaced effect of an emulsion paper, but looks more like a wash drawing on a fine variety of Whatman drawing paper. We have found this paper most suitable for subjects of comparatively light tones, in which work it gives the most pleasing effects, and those of a kind which are a welcome change from the matt and semi-matt effects usually given by bromide prints. The "cream canvas" is a paper for big effects, and under 15 x 12 size we should hesitate to use its realistic canvas surface. The tint of the paper is a faint cream, and the canvas effect obtained with it may be described as a thorough means of breaking up masses of dark shadow, and of giving to subjects of a bold and contrasty character a very effective appearance. All five brands of paper were developed by the developer which we happened to have at hand at the moment, namely, amidol, and evidently call for no special treatment in order to produce the effects which we have attempted to describe. For specimen prints and samples of the paper, Messrs. B. J. Edwards and Co. should be written to direct.

**Wellington "Extra Speedy" Plates.** Made by Wellington and Ward, Elstree, Herts, England.

With their new plate of this designation Messrs. Wellington and Ward add a plate of extreme rapidity to their esteemed "Speedy" brands, and have produced, so far as our experience has gone, an emulsion of the brightest rapidity. Halation, that bugbear of photographers of the old days, is much less in evidence with the modern plates, and some exposures of figure studies silhouetted against a strong light which we made with the object of testing this point, proved to us the satisfactory quality of the "Extra Speedy" in this respect. For quick work in the studio, and for the many purposes of outdoor photography, where the shortest exposures have to be given, the new plate may take its place as among the best procurable. It develops quickly and without a sign of inherent fog, and gave us, with ordinary metol-hydroquinone development, a set of negatives of excellent range of gradation. It is a plate, in short, on which dependence may be placed in undertaking the most diverse descriptions of photography.

**The "Velbro" Bromide Paper.** Made by Elliott and Sons, Ltd., Barnet, Herts, England.

Of late, Messrs. Elliott, who were early in the field with a platinum-matt bromide paper, have given special attention to papers of distinct and useful surface, and their names for them have not over-described the characteristic effects obtained with the papers. Thus the "Tiger-Tongue," as a bromide paper, has given great satisfaction for enlargements on a fairly rough cream-tinted bromide, and has proved specially amenable to methods of sulphide toning. "Lustra" matt and "Oyster Shell" matt are other papers of peculiarly delicate and delightful surface, which have emanated from the Barnet factory. In "Velbro," Messrs. Elliott have given us a paper of semi-matt character (perhaps rather more glossy than matt), which they justifiably liken to a typical carbon print, and the comparison is one which the print will bear, not only on account of its fine velvety surface, but for its brilliance and great range of tones. "Velbro" we have found, in our experience of it, to give exceedingly brilliant prints with perfectly clean whites, and with a range of gradation in the shadows which has done full justice to negatives which on other papers would require considerable doctoring to secure their full quality. "Velbro," it need only be added, is issued in the same sizes and prices as the other papers of Messrs. Elliott.

**Satin "Zigas" (Gaslight) Paper.** Made by Thomas Illingworth and Co., Willesden Junction, London, England.

In issuing this new brand of their gaslight paper, Messrs. Illingworth have moved in the direction of recent popular preference for

a paper which is neither matt nor glossy, but something between the two, and a shade nearer glossy than matt. The prints on the Satin "Zigas" which we have made have shown us the pleasing character of the surface on which the not inappropriate title of "Satin" has been bestowed. The clean, brilliant prints given by the paper will gratify those who set especial store on this certainly essential quality in a gaslight paper. The "Satin Zigas," we can say, is a high quality of this modern description of printing paper.

**Criterion "Non-Stress" Bromide Paper.** Made by the Birmingham Photographic Co., Ltd., Stechford, Birmingham.

A "glossy" variety has long figured among the brands of bromide paper manufactured at the Criterion Works of the Birmingham Photographic Co. It is now issued under the title "Non-Stress," a revision made to indicate certain improvements of the manufacture, which remove from the paper any tendency to show the friction marks which are a not uncommon cause of annoyance to workers of glossy bromide papers. To what extent the Criterion glossy paper suffered in this respect prior to the change we cannot recollect, but we have the strongest grounds—those of practical tests—for declaring that the present manufacture does not belie its new designation of "Non-Stress." Apparently it is impossible to get it to show the stress or friction markings; at any rate we found it impossible to get them by rubbing the paper vigorously in contact with the negative, and, in addition, scoring the sensitive surface with the blunt end of a lead pencil. Markings were plainly visible on the paper before development, but none on the finished print. Such a test is unduly severe, and more than confirms the claims made by the maker. We need say no more, except that in other respects the paper is eminently satisfactory, of good vigour and colour, and pure in the whites, and that samples and prices are gladly sent by the company—particularly to workers abroad—on receipt of trade card.

**Wellington Portrait Carbon S.C.P.** Made by Wellington and Ward, Elstree, Herts, England.

"S.C.P.," it may be necessary to explain to some readers of the issue, stands for "Slow Contact Paper," and is Messrs. Wellington and Ward's designation of the paper of the gaslight variety manufactured by them. "S.C.P.," pure and simple, as first introduced, and still, of course, manufactured in six different grades, gives a particularly plucky print from a not particularly strong negative. Other varieties are made for softer effects, and to these has now been added a "Portrait carbon S.C.P.," which is a gaslight paper manufactured especially to yield the soft effects from negatives of average good vigour, such as a professional photographer will produce for printing in P.O.P. We therefore submitted the new paper to the test of printing from negatives of average portrait subjects, using for the purpose a developer of full strength which would, if anything, favour the production of harshness of contrast in the prints. The results, however, gratified us by their softness and retention of detail in the light tones of the subject, and it is evident that with correct exposure, an essential item in all gaslight printing, the "Portrait S.C.P." gives very fine results. Messrs. Wellington and Ward are too long experienced in the manufacture of printing papers, and are too jealous of a reputation which has been built up on this branch of the photographic materials trade, to lower in the slightest the standard of quality which they have set up and have caused to be recognised wherever "Wellington" products are employed. Hence it is almost superfluous to say that in point of cleanness of working, good colour, and beauty of surface the new paper is fit to rank with its fellows from the Elstree factory, and we can hardly bestow higher praise than that. The new paper is marketed at prices uniform with those of the other grades of S.C.P.

**"Studio" Zelvo Bromide Paper.** Made by Thomas Illingworth and Co., Willesden Junction, London, England.

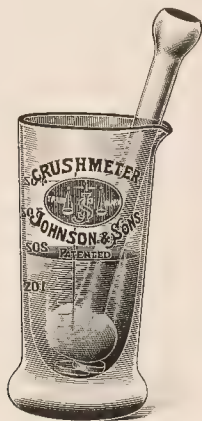
The demand of late for bromide papers of semi-matt surface has evidently been an increasing one. The dead matt appears to have declined in favour, and photographers have shown a preference for a surface with a little sheen, the beneficial effect of which is seen more particularly in the shadows of the subject, which are relieved of the lifeless look which often is noticeable in a quite matt bromide print. The modern improvement in emulsions for bromide



is no doubt partly responsible for the difference, but the improvement is equally marked in the choice of surface obtainable in final print. Messrs. Illingworth, who of late have stepped to front with their bromide paper, have therefore done well in recognising the public demand and satisfying it with this new variety of their product, "Zelvo." The results obtained on it during the past few days have pleased us for their fine, semi-glossy surface, and for the pleasing softness of the prints. In this respect "Studio" Zelvo is perhaps more suitable for professional work than the usual Illingworth bromide, which gives slightly more contrast. Specimen prints made on the new paper, and, we may add, on the other silver papers and carbon tissues of Messrs. Illingworth, are sent on application.

**Scaloid Chemicals Tablets.** Made by Johnson and Sons, manufacturing Chemists, Ltd., 23, Cross Street, Finsbury, London, England.

Among materials to which we should not omit to draw the attention of photographic workers in distant parts of the world are the compressed developing and other tablets manufactured by the old firm of Johnson's in the City of London, and widely known and used by photographers in England. The necessity of purchasing chemicals needed for the photographic processes in such a way that the supply can be opened in small doses is less pressing in the case of the home user than it is in that of the photographer living far from sources of supply; yet even the former has recognised the advantage of using the fresh and active solutions which are obtained by employing the compressed tablet chemicals prepared from materials tested for purity by the experts of a manufacturing firm. Johnson's produces have, in our regular use of them, proved their accuracy of composition and photographic activity so fully that attention may be properly drawn to them for the benefit of obtaining their supplies of such materials—as they are almost entirely from the home country. The "Scaloids," as Messrs. Johnson's chemicals are termed, are put up in boxes containing, as a rule, twenty tablets of each of the (usually) two constituent chemicals of the formula. The whole box makes, in many cases,



of developer—that is to say, quantities of 2 oz. and upwards may be dispensed quickly and accurately simply by dissolving one or more of each of the two kinds of "Scaloid" in the box. The list of "Scaloids" obtainable includes developers such as amidol hydroxide, pyro-soda, pyro-metol, and glycin. It comprises also the intensifiers and reducers, the toning baths in customary use, even a complete set of chemicals for the Autochrome process. A booklet of instruction in the use of "Scaloids" gives much useful information, but perhaps the greatest obligation under the circumstances is due to Messrs. Johnson for the provision of the "Crushmeter," a 4-oz. measure of special shape and solid construction in which the tablets are almost instantly reduced to powder by the glass pestle provided for the purpose. No cleaner or more convenient way of making a solution exists, and the "Crushmeter" is a last appliance which we would part with from our dark-room, and useful do we find it on practically every occasion when almost

any kind of photographic work is being done. The price of this most handy appliance is 2s.

**Ilford Ivory P.O.P., Matt and Glossy.** Made by Ilford Limited, Ilford, London, England.

To the six well-known varieties of Ilford P.O.P. have just been added two others, to be known as "Ivory" matt and glossy, and each on a pale cream support which gives a most pleasing effect to the print, particularly in cases where the negative is harder than it need be for good P.O.P. printing. A cream glossy paper can easily be too pronounced in character, and the effect is then far from satisfactory, but the adjustment of the depth of tint in the case of the Ilford "Ivory" papers has been done to a nicety, and the harmonious results in both the matt and glossy paper are extremely good. Adopting the universally known procedure of sulphocyanide toning recommended by the makers, our results gratified us very much, and we are bound to suppose that the addition of the "Ivory" to the other brands of Ilford P.O.P. will be welcomed by many classes of users.

**XL "Kriso" Gaslight Paper and XL P.O.P.** Made by B. J. Edwards and Co., Castlebar Works, Ealing, London, England.

Further additions to the specialties of Messrs. B. J. Edwards are the above papers, the first of which, the "Kriso" gaslight paper, we have been very pleased with in making a number of prints on the "smooth" variety. Three brands of the paper are issued by the makers, namely, "smooth," "matt," and "regular grain," the first having an extremely fine surface of the semi-matt order with perhaps a shade less gloss than was possessed by the old albumen paper. The paper we find to give a very fine range of tones, beautiful clear lights and a fine black colour, and we judge from our trials of it that it is an excellent brand of the gaslight type of paper.

Of the P.O.P. it is sufficient for us to say that in the sulphocyanide gold bath it gives us tones of the warm purple characteristic of that method, and impresses us as being a sample of P.O.P. fully deserving to be ranked with the other Edwards' productions.

**"Kiplo" Self-Toning Paper.** Made by Elliott and Sons, Barnet, Herts, England.

The new self-toning paper just issued by Messrs. Elliott under this title is an advance on the paper of the same description previously manufactured by the Barnet firm in that the tone is obtained in a simple hypo bath of 2ozs. per pint, in which the prints are immersed direct for about ten minutes. A good warm brown tone is given by this procedure, or a somewhat colder tone is obtained by adding about 25 grains of sodium bicarbonate to the bath. The latter, we agree with Messrs. Elliott, is an improvement as regards permanency of the results, since the bicarbonate neutralises traces of acid carried into the hypo solution from the paper. It is all to the credit of the paper that it tones well in this carbonated bath. For more purplish tones a preliminary 5-minute 5 per cent. salt bath is used, and is followed—with a brief rinse between—by the fixing bath already mentioned. The paper is issued in both matt and glossy varieties, and, as proved to us by the prints we have made, gives very rich full-toned prints of very pleasing tone.

**Acid Diamidophenol Stand Developer.** Sold by F. C. Clarkson, Colchester, England.

We have received from Mr. Clarkson, of Colchester, a sample of acid diamidophenol prepared for tank development according to the following formula:—

Diamidophenol .....	10 grs.
Anhydrous soda sulphite .....	60 grs.
Liquid bisulphite (Clarkson's dye) ..	100 mms.
Pot. bromide, 10 per cent. solution ..	50 mms.
Water to .....	20 ounces.

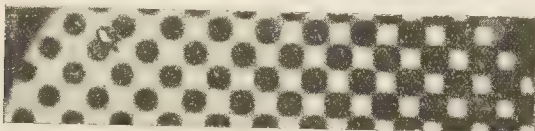
A trial of this developer gave excellent results. The time of development was about thirty minutes, and the resulting negatives were perfectly clean and free from stains or markings. Mr. Clarkson will send a sample one-ounce bottle of his diamidophenol, post free, for 1s. 3d., or twelve one-ounce bottles for 10s. 6d. Those who have not yet tried diamidophenol as an all-round developer would be well advised to do so. The price is very low, while the developer is equally useful for negatives, slides, bromide, or gaslight prints.

**THE BARNET "STUDIO" PLATE.**—This new plate issued by Messrs. Elliott and Sons, Ltd., Barnet, Herts, England, specially for portrait

work, we have found to carry a liberal coating of emulsion, to give negatives of good vigour and detail in both high lights and shadows, and to permit of considerable latitude in exposure. The "Studio" is certainly a very rapid plate, yet free from fogging propensities.

**GRIFFIN'S "PROFESSIONAL" PLATE.**—In this new plate, supplied particularly for studio use, Messrs. John J. Griffin and Sons, Ltd., of Kingsway, London, England, offer an emulsion which, as we have found it, is very rapid, clean in working, and capable of giving portrait negatives of very fine quality. The plate supplies another instance of the care taken of the professional photographer nowadays by the manufacturers.

**THE "PROCEX" HALF-TONE PLATE.**—This plate, issued by the Halifax Photographic Co., Halifax, England, for the half-tone block-maker, has therefore been tested solely from this point of view, although we may add, for the benefit of the ordinary worker, that the results have shown it to be a plate giving a good clear line with a considerable intensity of deposit. So far as its speed is concerned, the plate works out to practically 60 H. and D. It was tested as to



its suitability for half-tone work by making a screen negative with 155 cross-line screen, which negative was then enlarged 30 diameters, and a photomicrograph, herewith reproduced, taken of the dot formation. It can be seen that the plate comes through this ordeal exceedingly well, and proves that it is capable of giving very sharp non-woolly dots even without any treatment in the way of intensification or reduction, neither of which were used in the test.

**PERMANENT SILVER PRINTS BY GASLIGHT.**—To the article in last week's "B.J." on the new "Synoloids" process, we may offer a word or two of explanation in reply to the inquiries asking for more information as to this innovation in silver printing. The paper is not yet on the market, but is promised to be ready in less than three months' time. The supply on which our remarks of last week were based is, we believe, the only paper yet placed at the disposal of the Press. As pointed out in the article, a latent image is obtained by a very brief exposure to artificial light, and on development in a weak acid developer (used in full working light) gives a silver print which can be made of cold or warm tone at will, and from its mode of production is certainly as permanent as a developed bromide or gaslight print, both of which, as is universally admitted, are to all intents and purposes permanent. The method permits a very thin coating of the paper without sacrificing richness of the prints, as the picture is built up from soluble or semi-soluble silver salts, and this, as we have proved for ourselves, without any staining of back or front of the prints. Hence fixing and washing are very short operations, and the whole process is one which is of particular interest to workers abroad, the makers having very fully tested the paper's keeping qualities in tropical climates. We understand that by the time letters from our colonial readers can reach the makers at 85, Gracechurch Street, London, England, they (the makers) will be ready to send samples and full working particulars.

**COLOURED POSTCARDS FROM PHOTOGRAPHERS' NEGATIVES.**—The London Studio, of 20 and 22, St. Bride Street, Ludgate Circus, London, E.C., send us some excellent and most attractive samples of postcards in colour, which they are offering to do for photographers in small quantities. They offer these cards at a price of 30s. per thousand from a single subject, or 1,000 each of twelve cards at a price of £17 8s. The best suggestion we can make is that those interested in cultivating this profitable side of photographic business should write to the London Studio, enclosing three penny stamps for their full tariff of prices and a sample set of both the coloured cards and the black and white work of which the London Studio has hitherto made quite a specialty.

**ZEISS TELEPHOTO CAMERA.**—A new camera has just been issued by Messrs. Carl Zeiss, 29, Margaret Street, London, England,

specially for telephoto work. It is fitted with a special rapid lens of 32in. focal length, the largest aperture being  $f/10$ . The camera is about 9in. long and 6in. to 7in. wide, and carries the Zeiss focal-plane shutter for instantaneous and time exposures. At present it is made only in one size, taking 9cm. by 12cm., or 4 $\frac{1}{2}$ in. by 3 $\frac{1}{2}$ in. plates. The lens is supplied in focussing mount, with the scale ranging from six yards to infinity, and a Zeiss monocular prism glass of a magnifying power of four is fitted as a finder. The price of the complete outfit is £45.

**PHOTOGRAPHS OF THE FAR EAST.**—A link between ourselves and our many friends throughout the Far East, into whose hands this issue will fall, is formed by the "Photographs of the 'Orient,'" by H. G. Ponting, F.R.G.S., now being held at the little gallery at the house of "The British Journal of Photography," near the Strand, London. The collection includes photographs taken in Japan, Burma, China, and India, and gives as vivid an impression of the scenes and characters to be met with in these countries as one can imagine photography capable of. The whole of the pictures, it may be added, are sulphide-toned bromide enlargements from the studios of the well-known firm of Raines and Co., and represent the high-water mark of commercial work. All Colonial readers who chance to be in London are asked to visit the offices of the "British Journal," where they will usually find an exhibition in some way or other representative of a modern aspect of photography.

**NIGHT PHOTOGRAPHY.**—Messrs. Dawbarn and Ward, Limited, 4, Farringdon Avenue, London, E.C., have issued a well-printed monograph on night photography, chiefly outdoors, by Mr. Robert Dykes, whose work in Edinburgh, London, and Paris with a camera by night represents a very high standard of this difficult branch of photography. The publication, which is at once an album and a text-book, is issued at 1s. net.

**THE TELEPHOTO QUARTERLY.**—We have to welcome into the ranks of photographic editors Captain Owen Wheeler, who has commenced the issue of a publication, the "Telephoto Quarterly." Under his quite personal editorship the "T.Q.," as our new friend is to be known, can hardly help being of vital practical interest to those engaged or interested in telephotography. All communications in reference to our new contemporary should be addressed to Captain Wheeler, "Strathmore," Princes Road, Weybridge, England. The price of an annual subscription, post free, for the "T.Q." is 1s. 6d.

#### CATALOGUES AND TRADE NOTICES.

**LANCASTER CAMERAS.**—A new catalogue from the Birmingham firm of J. Lancaster and Sons is a publication deserving of more than passing notice, coming, as it does, from a firm which for twenty years past has never abated its energy in anticipating the wants of the amateur photographer and in supplying him with apparatus suited to his requirements and moderately priced. Those who, like ourselves, commenced photography with a "Lancaster" camera, will peruse with interest this latest issue, wherein figure particularly a variety of reflex cameras, folding hand-stand cameras and a number of the convenient enlargers and enlarging illuminators which are a special department with Messrs. Lancaster. The list is sent free on application.

**HEINRICH ERNEMANN (ERNST HERBST AND FIRL), GOERLITZ, GERMANY.**—This is a well-got-up and interesting catalogue of fifty-seven pages in French and English. It includes a very large variety of the "Globus" cameras, from  $\frac{1}{4}$ -plate size up to the largest studio and process cameras. Some of the camera stands have novel and very useful features. We note one stand in particular that can be varied in height from eighteen to sixty-four inches, and is also adaptable for vertically photographing persons in a recumbent position. This stand, therefore, has special uses, both in the studio and in the hospital. A very special outfit is one designed for use in criminal identification photography. This includes a very peculiar and apparently uncomfortable type of chair that will only allow the sitter to assume one position. This particular kind of work is, of course, quite outside ordinary professional photography, but it is worth mention as an example of the completeness of the catalogue.



# Meetings of Societies.

## MEETINGS OF SOCIETIES FOR NEXT WEEK.

FRIDAY, MARCH 27.

Week Photographic Society. Rotary Specialties.  
Cardiff Photographic Society. "In Northern Brittany." A. E. Harris.

SATURDAY, MARCH 28.

Liverpool Amateur Photographic Association. Excursion to Bidston.

MONDAY, MARCH 30.

Levensham Camera Club. "Hand Camera Work with a Vindex." W. G. Hill.  
Scarborough and District Photographic Society. "Miscellaneous."  
Bradford Photographic Society. "Pin-hole Photography." J. R. Coulson.  
Alderminster and District Photographic Society. "Flower Photography."  
W. W. Baker.  
Lancaster Photographic Society. Lantern-Slide Competition.  
Stercliffe Photographic Society. Rotary Carbohydrate Paper.

TUESDAY, MARCH 31.

Royal Photographic Society. "The Camera as an Aid to the Study of Birds."  
W. Bickerton.  
Lancaster and District Literary and Scientific Society. "Gaslight Paper." Mr.  
Edwards Photographic Society. Rotary Carbohydrate Paper.  
Huddersfield and District Camera Club. "Oil Printing." Demonstrated. T. Haldane  
Harrison.

WEDNESDAY, APRIL 1.

South Suburban Photographic Society. "Colour Photography (including Develop-  
ment of Autochrome Plate)." A. W. M. Dickens.  
Leeds Camera Club. "Theory and Practice of Time Development." W. F.  
Slater, F.R.P.S.  
Leydon Camera Club. Annual Rummage Sale.  
Barnford Photographic Society. "In Italy with a Hand Camera." F. G. New-  
march.  
Rough Polytechnic Photographic Society. "Three Colour Photo-Micrography."  
Dr. A. Norman.  
Leventry Photographic Club. Annual Meeting.  
Inverburgh Photographic Society. "Some Things About Brittany." Charles  
Stol Photographic Club. A Special Evening for Elementary Workers.  
United Stereoscopic Society. "Some Crude Attempts at Hand-drawn Stereo-  
graphs." P. Snow.  
Crystal Photographic Society. Rotary Carbohydrate Paper.

THURSDAY, APRIL 2.

Leley, Farsley and Calverley District Photographic Society. Kodak Lecture.  
Mr. Slater.  
Liverpool Amateur Photographic Association. "Studies from Life of Reptiles  
and Amphibia." Dr. John H. O'Connell.  
Aldridge Wells Amateur Photographic Association. "Switzerland, the Beaten  
Track." W. J. Mackie.  
Allothian Photographic Association. "Some Fundamental Principles of Pic-  
torial Photography." Jas. Patrick.  
Hemelton and District Camera Club. "The Camera as Historian, County  
Record Work." The Photographic Survey and Record of Surrey.  
Photographic Society. Annual General Meeting.  
Gly Photographic Society. Annual General Meeting.  
Letchworth-on-Sea Photographic Society. "Printing and Toning." Miss Florence  
Bell.  
Leeds Camera Club. Club Lantern Slides 1907-8.  
London and Provincial Photographic Association. "The Nature of Colour." Dr.  
C. E. Kenneth Mees.  
Lancaster Photographic Society. "Photographic News Prize Slides."  
Leeds Photographic Society. "A Trip to Morocco." H. Lambert.  
Hemond Camera Club. Lantern Evening.  
Leley and Worsley Photographic Society. Rotary Carbohydrate Paper.

## ROYAL PHOTOGRAPHIC SOCIETY.

MEETING held March 24. Mr. A. J. Newton read a paper on "Three-  
colour Work." He regretted that he had nothing startlingly new.  
The theory of three-colour was really extremely simple, and pro-  
bably familiar to those present. Nevertheless, they perhaps had  
seen a demonstration of the facts upon which it was based, and  
they had at the L.C.C. School of Photo-Engraving worked out a  
very simple manner of making this demonstration, he proposed to  
do it before them to-night.

The lecturer then dealt with the nature of light and colour, point-  
ing out that colour was a purely subjective phenomenon, and that  
it arose from absorptions of some of the constituents of white light  
falling upon the objects. This was proved by first of all projecting  
the spectrum and then placing in its path various coloured substances.  
The point was that imitation of all colours could be obtained  
by mixtures of three. Three portions of the spectrum were isolated,  
projected on the screen, and blended in various proportions to  
obtain all sorts of colours.

The application of this fact to photography was then fully  
described, and various one-plate processes were shown to depend  
on his addition of three-coloured lights. After this the subtrac-

tive processes for three-colour photo-mechanical illustration were  
dealt with, the latest devices in this respect being touched upon,  
as, for example, the use of coloured carbons and the use of non-  
filter collodion emulsions. In regard to this latter, some striking  
examples were exhibited, showing that, so far, results could not be  
obtained in any way to approach those produced with colour filters.

The lecture was illustrated by numerous examples of three- and  
four-colour illustrations lent by some of the leading firms, showing  
the great perfection to which the process had now attained.

## Commercial & Legal Intelligence.

BRITISH PHOTO PAPER COMPANY, LTD., LONDON.—Issue on Feb-  
ruary 24 of £125-6 per cent. debentures, part of series created Novem-  
ber 6, 1907, to secure £5,000, charged to the company's undertaking  
and property, present and future, including uncalled capital. No  
trustees. Total amount previously issued of same series, £3,340.

ANOTHER ENLARGEMENT CASE.—At the Scarborough County Court,  
before his Honour Judge Cyril Dodd, Harriet Kemp, widow, Scar-  
borough, sued the Great Britain Art Company, Manchester, to  
recover money paid to the use of the plaintiff, two photographs  
detained, and for damages for non-delivery of a framed enlargement,  
and for detaining the two photographs. Mr. John Whitfield appeared  
for the plaintiff, and the case was undefended.

Mr. Whitfield stated that in October, 1906, a lady called on the  
plaintiff, who arranged to have a photograph of her deceased husband  
enlarged. The price was to be 18s. 6d., payment to be made by  
instalments, and after all these were met the photograph was to be  
delivered.

The plaintiff, in the course of her evidence, said the defendants  
had not delivered the enlargement, nor had they returned the two  
photographs of her deceased husband that she handed over. She  
had written and received no reply. Witness had paid 19s. in instal-  
ments.

His Honour: There will be judgment for £6 and costs, execution  
to issue within a week unless the two photographs be returned. In  
that event judgment will be for the plaintiff for £1 and costs. If,  
added his Honour, defendants came into Court before he rose he  
would allow them a new trial on payment of the debt and costs  
into Court.

Subsequently a young man entered the Court, and, stating that  
he represented defendants, asked for the case to be reopened.—His  
Honour: Have you got £6 with you?—Applicant: I have about  
£3.—If you pay into Court £6 I will re-hear the case. The Great  
Britain Art Company ought to be able to raise £3 in the course  
of the day.—Applicant: I shall have to wire for it.

The applicant then left, and up to the rising of the Court had  
not reappeared.

LUTON BANKRUPTCY.—A receiving order in bankruptcy has been  
made against Arthur Joseph Anderson, photographer, etc., 37,  
Wellington Street, and 36, High Town Road, Luton, and 7, High  
Street, Leighton Buzzard, Bedfordshire.

LEGAL NOTICES.—Notice is given of the release of the trustee in  
the bankrupt estate of Francis Edwin Ellis, photographic artist, of  
Ivycroft, Stockfield Road, Streatham, S.W.

The partnership between Henry Vassar Lawley and Percival Edwin  
Stow, cinematographers, of Clarendon Road, Croydon, Surrey, trading  
as The Clarendon Film Company, has been dissolved by mutual con-  
sent. All debts will be received or paid by P. E. Stow.

PHOTOGRAPHIC APPARATUS FOR BOROUGH ENGINEERS. — The  
Borough Engineer of West Ham recently reported to the Council  
that it was desirable to purchase a camera for the purpose of obtain-  
ing photographic records of irregular buildings and other works  
coming under the supervision of his department. At the last meeting  
of the Council the Works Committee notified that they had authorised  
the engineer to obtain the necessary apparatus and equipment at  
a cost of £20.

## News and Notes.

**NOTICE.**—Owing to great demands upon our (enlarged) space this week an article on "Carbon Printing in the Tropics," intended specially for this "Colonial" number has had to be held over, with many notes and paragraphs, until next week.

**COLOUR PHOTOGRAPHY.**—The first issue of the "B.J." in every month is enlarged to find space for extra pages recording the progress in colour photography. This so-called "Colour Photography" Supplement serves the purpose of a separate publication in this important branch of photography.

**SINOP.**—The Sinop Collographie Co., of 40, Rue de l'Université, Reims, have appointed Mr. S. G. Yerbury, who is well known in collotype circles, to demonstrate their simplified form of collotype before societies. Secretaries are asked to kindly write for dates. This process is interesting, as it enables photographs to be printed in almost any paper and in any colour. Mr. Yerbury's address is 26, Milton Road, Acton, London, W.

**NEW OPENING FOR PHOTOGRAPHERS.**—Anyone visiting the commercial quarter of Paris (writes the "Globe") will have been struck by the extraordinary number of photographic cameras set up on the pavement about mid-day. Some enterprising photographers, it appears, have conceived the idea of photographing the city workers in groups, between the time they leave the restaurant and return to their work. By the following morning these portrait groups have taken the form of picture postcards, and are sold to the workers at a moderate price. The idea has "caught on" tremendously among the Parisian workers, who hastily devour their frugal mid-day meal to group themselves before the photographic lens, and these improvised "sittings" in the open lend a picturesque touch to the moving panorama of the streets.

**PHOTOGRAPHY IN THE TROPICS.**—Dr. Tempest Anderson, at the Yorkshire Philosophical Society last week, dealt with some points of importance to the tourist and worker in foreign countries: The choice of suitable plates; the extremes of damp and heat in the tropics playing havoc with certain makes of dry plates much more than with others; the best methods of keeping both cameras and plates quite dry, by means of ingenious chambers attached to the plate and camera boxes, designed to hold drying pads charged with chloride of calcium. Another thing that had to be guarded against was, a certain amount of radio activity which, at tropical temperatures, seemed to reside in the wood and aluminium which were so often used for dark slides and plate-holders. This led to the gradual fogging of the plates, beginning at the edges and creeping inwards. Much valuable advice was given as to the lengths of the exposures required under a tropical sun, which was generally very glaring and untempered by such strong sky light, such as generally prevails in this country. The result was that tropical shadows were relatively very dark, and therefore exposures, if intended to render details in the shadows, must be longer than the uninitiated would at first suppose. The lecturer showed a most ingenious contrivance for ensuring correct exposures, in the shape of plates cut into narrow strips and placed one by one in the camera for trial exposures. After exposure the strip is then introduced into a dark bottle of developer for 30 seconds without once seeing the light, and then taken out for momentary examination in the light, when the correctness of its exposure in the camera can at once be judged by the state of the developed image.

**PRINTS ON SALTED PAPER.**—Among the many formulæ used in the preparation of salted papers (writes Mr. W. A. McLean in "Focus"), the following I find most sure in working. The No. 1 or salting bath is:—

Common salt (sodium chloride).....	160 grs.
Ammonium chloride .....	80 grs.
Bichromate potassium (5 per cent. sol.).....	$\frac{1}{2}$ dr.
Gelatine .....	25 grs.
Water (distilled).....	20 ozs.

The gelatine must be cut into shreds with a pair of scissors; place the shreds into 25 ounces of distilled water, and boil in a clean enamelled pan, or in an earthenware jar placed in a saucepan of water; continue to boil until the 25 ounces of water boil down to 20 ounces, then add the bichromate, etc. Immerse the paper until limp and thoroughly saturated; naturally a paper soft and porous in quality

will not take nearly so long to become saturated as a fine-grained hard paper does, so that it is useless to state any definite length of time for immersion in this bath. The salted paper is dried and sensitised by immersion in:—

Nitrate of silver.....	1 oz.
Distilled water .....	9 oz.

**ROYAL PHOTOGRAPHIC SOCIETY'S EXHIBITION.**—The following have been elected members of the Selecting and Hanging Committees: Pictorial section—Messrs. W. R. Bland, Chas. F. Inston, E. T. Holding, Furley Lewis, J. C. S. Mummery, G. A. Storey, A.R.A., B. Gay Wilkinson. Technical section—Messrs. Conrad Beck, C. P. Butler, Douglas English; A. J. Newton, C. E. K. Mees, D.Sc., J. Sinclair, E. J. Wall, Major-General J. Waterhouse, I.A.

**SKYSCRAPER PHOTOGRAPHY.**—To crawl along one side of an X formed by the cross girders of the tower of a great bridge; to zigzag in this fashion up to a height of nearly 350ft., and then to stand on a little platform of steel less than 12ft. square, with no guard rail to keep you from plunging through to the surface of Blackwells Island, that is all in the day's work with a newspaper photographer. To walk across a bolt-studded strip of steel only 6ft. wide to another little platform, stopping half-way to focus on a group of workmen and take their picture, that is just a part of the every-day game with us (writes Charles Duprez in the "Camera"). After sitting on a girder extending from the thirty-seventh floor of the Singer Building and making a photograph of Broadway, a sheer 500ft. below, climbing the tower of the Blackwells Island Bridge did not seem much of a "stunt" to me. After I was at the top and hoisted my camera up by a rope it was exhilarating to get the splendid view of New York City and the sweep of East River north and south, and to look on the men in striped clothing working on the island below, not much bigger than flies to my eye. One false step and I'd have been down among them. But I would not have known I was there.

### FORTHCOMING EXHIBITIONS.

- March 21 to 28.—Midlothian Photographic Association. Sec., Robert Oliver, 6, Murieston Terrace, Edinburgh.  
 March 27 to 28.—Catford and Forest Hill Photographic Society. Sec., T. Browne, 169, Woolstone Road, Forest Hill.  
 March 30 to April 4.—Malvern Camera Club. Sec., J. B. Nickolls, The Exchange, Malvern.  
 March 31 to April 4.—Sheffield Photographic Society. Hon. Sec., J. W. Wright, 62, Vale Road, Sheffield.  
 April 21 to 24.—Southend-on-Sea Photographic Society. Entries close April 6. Sec., J. Archer, 24, Ashburnham Road, Southend-on-Sea.  
 April 22 to 25.—Plymouth Photographic Society. Entries close April 14. Sec., Wilfred Grist, The Athenæum, Plymouth.

## Correspondence.

- \* We do not undertake responsibility for the opinions expressed by our correspondents.
- \* Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

### THE R.P.S. SELECTION COMMITTEE.

To the Editors.

Gentlemen,—The Journal of the R.P.S. issued to-day, referring to my proposal that the Selection Committee of the Pictorial Section of its exhibition should each year include two new experts, states that "the recommendation was lost . . . neither mover nor seconder voting in its favour." As this may lead some people to think that I, being satisfied with Mr. Wall's hope that the same lot "would be appointed for many years," or with the president's opinion that it was best "to let it alone," tacitly withdrew my contentions, permit me to state that the discussion only confirmed me in the opinion that in this matter the council has lost touch with the spirit of progressive portraiture, and that the practice of appointing the same six



en year after year to be sole arbiters of which is pictorially noteworthy is from every point of view indefensible.

Although the annual meeting (which it should be observed was most entirely confined to members of the council and officers of the society, supported by a sprinkling of plate-makers and wasters) the one voice rejected my motion, it has apparently borne fruit, for though at the time the President refused to pledge the council, the latter has since so far adopted my view as to place two new men on the Selection Committee for 1908. During the past few days I have received many expressions of approval of my action, including a very strongly-worded letter from an exceptionally prominent exhibitor, from which I am inclined to think that three-fourths of the exhibitors are outside the charmed circle will be with me in this matter. It is specially desirable that provincial exhibitors should speak out promptly and raise their voices against a monopoly which spells monotony, and which is also calculated to bear very heavily on those who, living at a distance from London, have few or no opportunities of appealing from the verdict of a permanent Selection Committee. The mere fact that the composition of the committee is changed every year is sufficient to make the candidate for pictorial honours hope that eventually his efforts will receive recognition.—

Faithfully yours,  
Cheam Road, Sutton,  
March 21, 1908.

HECTOR MACLEAN.

#### THE PORTRAIT POSTCARD.

To the Editors.

Gentlemen,—May I beg a small part of your valuable space to ask guidance from yourself, or from some of your professional or manufacturing readers? The portrait postcard is here! It permeates the idea of the public. It is very cheap, and often very good. The middle-class and upper middle-class public ask for it. Their idea of its value is from one penny to twopence each. However, they are willing to strain a point and to order a dozen at 6d. as an outside price, but they want proofs. Pretty and effective mounts (oblong and upright) and frames can be had for a copper too each. The effect then is that of high-class cabinet work. A comrade of mine who has hitherto always had cabinet work, brought my studio four children and a dog, and said she required four different pictures, viz., four children and dog, one child and dog, children alone, four children alone. A number of plates were exposed and good results obtained in each case. The lady then she would have postcards, at which announcement I felt myself a bit puzzled. We were paid 10s. for four dozen postcards, and proofs were sent for. The lady told me to-day she was quite delighted with the postcards, and that she thought them quite equal to cabinets. Several of this lady's friends have ordered postcards. A week's work went into 30s. My expenses are: Wages, rent, materials, etc., 15s. Had this twelve dozen postcards been cabinets I should have received almost £7. Now, for a great number of years, the cabinet portrait—silver, platinum, or carbon—has been the mainstay of the manufacturer and of the professional man, but the postcard now comes, and it is going to ruin and bring into contempt and commercial prostitution both the manufacturer and the portraitist. I think I have evidence that the manufacturer is beginning to feel the draught, because no less than seven travellers, from firms of plate and paper makers who have never called on me before, have been in my studio since January 1.

Now, Sir, will you be so good as to advise the proprietor of a small cabinet business what is his practicable attitude towards the portrait postcard?—Yours faithfully,

POSTCARD.

While we deplore, as much as anybody, the changed condition of things, we must point out to our correspondent that his practice in giving sittings ad libitum without an understanding as to the sitter's price is unbusinesslike. We are afraid there is no easy remedy. Photographers have been confronted with the same difficulty "Postcard," and have either declined to take orders for such work, or have run strong on it and made money. One recommendation that has been made is to the effect that a portrait to be printed on a card should be taken, of about carte size or a quarter-plate, and covered with a mask on the postcards, but such a measure is obviously useless in the face of competition with postcard portraits the size of the card.—Eds., B.J.]

Coming to our going to press earlier than usual several letters are over.

## Answers to Correspondents.

- \* All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.
- \* Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.
- \* Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., 24, Wellington Street, Strand, London, W.C.
- \* For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.

#### PHOTOGRAPHS REGISTERED:—

- A. Paterson, 19, Academy Street, Inverness. Photograph of the Rev. A. Bremner
- J. A. Povah, 9, Rosthwaite Road, West Derby, Liverpool. Photograph of a Coasting Schooner homeward bound off Northumberland Coast. Photograph of the Launch of the "Mauretania," September 20, 1906. Photograph, Salting and Packing Herrings for Conveyance by Rail at the Fish Quay, North Shields. Photograph, Schooner in Full Sail. A Breezy Day of the Tyne.
- W. G. Fudger, Rosedale Studio, Peperharow Road, Godalming, Surrey. Photograph of the Interior of the Congregational School, Godalming. Photograph of Congregational Church (Interior), Godalming.
- C. E. Field, the Waveney Publishing Company, High Street, Yoxford, Suffolk. Photograph, Baptism of a Female Candidate by the "No Sect" Preachers on Middleton Moor, Suffolk.
- G. Laurens, The Parade, Station Road, Wealdstone, Harrow. Photograph (Flashlight), Group of Wealdstone and District Parliament.
- E. A. PEEPLES (Mulgrave, Nova Scotia).—The L.C.C. School of Photo-Engraving and Lithography, 6, Bolt Court, Fleet Street, London, E.C.
- W. H. THOMPSON (Hartford, Conn.).—One glass only. If two glasses are cemented with coloured gelatine on both, then half that quantity on each. We coat one glass only, and cement a piece of glass on top.
- R. K. BONINE (Honolulu, Hawaii).—I should like to obtain some information on the subject of making bromide of silver emulsion, and the method of coating same upon glass and film. Can you refer me to any publications on this subject, or any serial articles that have appeared in the photographic magazines?  
You will find some very useful general information in Sir William Abney's "Photography with Emulsions" and his "Instruction in Photography," and also in Eder's "Handbuch" (Part III.). Modern methods practised by plate makers of course involve trade secrets that are not published.
- S. C. BONNERJI.—For the lens, J. H. Dallmeyer, Ltd., or Carl Zeiss; for the shutter try Newman and Guardia or Adams and Co., although we think there must be some misunderstanding as to the firm you mention declining to fit their new model.
- WILFRED.—"Kinematograph and Lantern Weekly," E. T. Heron and Co., 9-11, Tottenham Street, W.
- LITHO.—Photo-litho paper is a hard paper coated with gelatine. It is sensitised with a solution of bichromate of potash and then printed. It is then inked up with litho transfer ink, and the image afterwards transferred to a lithographic stone and printed from in the usual way of lithography. The paper is supplied by Messrs. Penrose and Co., Farringdon Road, and others. If you desire full working instructions of the process you cannot do better than get "Photo-lithography," by Geo. Fritz (Dawbarn and Ward, Farringdon Avenue, E.C., 3s. 6d.).

HARRISON and EVANS, and others.—In our next.

A. SMITH.—See the "Almanac," 1908, page 947, under "Combining

Lenses," in which formula read  $F$ ,  $3\frac{1}{2}$  inches  $f/1$ ,  $6\frac{1}{2}$  inches, and  $f/2$  the focus of extra lens.

W. BUSHELL.—"Der Photograph," c/o Benno Fernbach, Bungalow, Germany; "Die Photographische Industrie," Dresden, A21, Germany.

W. STORRIE.—Wyndham and Co., collotype printers, Acton, W., or perhaps Harold Hood, Ltd., St. Bride Works, Middlesbrough.

CATHAY.—See review in this issue. 2. To the enlargement if an unsymmetrical lens is used. If symmetrical, the position does not matter.

B. B.—We can only refer you to the usual sources of information—the directories, and the lists of members that some societies issue.

A. MOORE (Ramsey).—Cassella and Co., Frankfort-on-Maine (Agents, Pronk, Davis and Co., 22, Harp Lane, E.C.); Actien-Gesellschaft für Anilin Fabrikation, Berlin, and 20, Eastcheap, London E.C.; Badische Company, Ltd., 22, Bush Lane, E.C. (Badische Anilin and Soda Fabrik, Ludwigshofen a/Rh.); Chemische Fabriken vorm Weiler-der-Meer, Verdingen a/Rh.; Kalle and Co., Biebrich a/Rh.; R. Geigy and Co., Bâle, Switzerland; Chemische Fabrik Sandaz, Bâle; Society of Chemical Industry, Bale; Bale Chemical Works, Bale.

COLLOTYPE.—Your help in the following will be thankfully received. I have been trying my hand with the collotype process on a small scale—half-plate. In my initial experiments I have not thought it necessary to go to the expense of a proper drying-box. But I have dried the plates in absolute darkness, and away from gas fumes or other injurious vapours. The plates dried in eight or ten hours, and looked very good. After printing, they were washed till they were free from the bichromate and dried. They were then heated with water and glycerine, according to the text-books, and the surface moisture removed. On trying to ink upon the plates the ink took evenly all over, and nothing that I could do with any of them improved matters at all. Can you tell me what is wrong?—V. C. RICHARDS.

Where you have gone wrong is in the drying, supposing you worked strictly by the text-books in the other details. One of the greatest essentials in the collotype process is the quick drying of the plates, and the temperature at which it is done. Owing to the long time your plates took to dry, the gelatine film had become so hardened that it would not absorb the water, and, consequently, they took the ink all over, instead of in proportion to the light's action. A proper drying box is one of the principal essentials to the working of the process. The time occupied in drying collotype plates is from three to five hours, and the latter time should not be exceeded.

CARBON TRANSPARENCY TROUBLE.—Will you please give me some help on the undermentioned trouble? I have been making some lantern slides by the carbon method, but when they are dry they all seem covered with a fine network, which shows very strongly on the screen. The plates were coated with the substratum, as given in the Autotype Company's book, and were dried in a room well lighted with gas, as the directions say "dry in the light." Can you explain the cause of the trouble?—J. A. BOWDEN.

The defect is what is known in carbon printing as reticulation. It may be due to several causes—such as too soft a substratum, the use of too hot water in the development, or to the tissue being too quickly dried, so that it is in a very soluble condition. Another cause may be that the tissue was soaked too long before it was squeegeed upon the glass. When pictures are developed on glass the tissue should not be soaked quite so long as when it is to be developed on paper. However, we have little doubt that your trouble is due to the first-named cause—the substratum not hard enough. The substratum should be exposed to strong daylight, which renders the gelatine thoroughly insoluble. Exposure to gaslight is not enough, hence substratum has been affected by the warm water in the development, and consequently reticulated. If this is the cause, and in all probability it is, the remedy is obvious—expose the bichromated substratum to strong daylight for a few hours. It is a good plan, and one followed by many who make carbon transparencies for enlarging from, to coat the tissue, after exposure, with plain collodion and allow it to dry before squeegeeing it on the glass. In this way all risk of reticulation is avoided.

## TO READERS IN THE COLONIES AND FOREIGN COUNTRIES.

We must point out to the many readers who make their first acquaintance with the "B.J." through the present issue, that we have been compelled to make considerable departures from our usual custom in issuing the present number, enlarged though it is. The photographic season is just opening here in England, and the result is that the number of new goods to reach our office for review is unusually great; yet we hope that the record of our experience in testing lenses, plates, and printing papers will be as valuable to our foreign readers as other matter which would occupy the same space, therefore we can do no harm in saying what sort of a paper the "B.J." is, and assisting the reader to decide whether it is worth while spending 13s. on the fifty-two numbers in the yearly volume. If our reader looks for reproductions of the modern so-called pictorial photography, or for oft-repeated instruction in most elementary processes, then decidedly the "B.J." is not for him. The space at our disposal is too badly wanted for more important matters. We make a point of giving the news of the trade and the profession, of dealing with the money-making side of photography, and of investigating quickly the new departures in any branch of camera work which appears of industrial or scientific interest. The "Correspondence" columns of the "B.J." provide every week some of the most interesting reading in the paper—sidelights on trade methods, experiences of practical photographers—and forms means of communication between distant workers which is open to all without fear or favour.

Scarcely less in interest are the "Answers to Correspondents," which are given by one or other of the staff of the "B.J.," or are obtained, if needed, from outside experts—a much appreciated feature of the journal, so we are led to believe.

Of our comments each week under "Ex Cathedra," and of our determination to be as soon as any other journal—if possible, a little sooner—with news of photographic progress, it behoves us to say little, but to let our readers judge for themselves from the journal.

These features may not impress the reader as intensely novel, but their solid value to the photographer at home and abroad has been attested over and over again by readers who have grown to old age during the fifty-four years throughout which the "B.J." has regularly appeared.

So far as individual help can be rendered to readers at a distance, those in the colonies and in foreign countries receive special attention. Questions on business and technical matters will be gladly answered, and the means of obtaining information which a newspaper offices of all places possesses is cheerfully applied for the benefit of our friends beyond the seas.

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## SUMMARY.

Modern Studio. The second chapter of Mr. Butt's article on the equipment of photographic premises deals chiefly with the question of external decoration. (P. 263.)

Professor Lippmann writes from the Sorbonne in further explanation of his new method of stereoscopic photography. (P. 273.)  
Amateur Photographer" of Tuesday last gives some further detail and suggestive details as to the new method. (P. 269.)

W. J. Russell, F.R.S., writes a letter of caution in reference to the action of substances upon the photographic plate on proximity or contact with the latter in the dark. (P. 274.)  
Portrait Postcard. Several correspondents give their experience in meeting this form of competition. (P. 274.)

On severe sentences on bogus photographers were passed last week and are reported in "Commercial and Legal Intelligence." (P. 271.)

Continuing the "Conversations on Copyright," we conclude this week the section dealing with the ownership of copyright. (P. 265.)

We regret to announce the death of Mr. A. S. Spratt. (P. 267.)  
Collection of the late Mr. Horsley Hinton's pictures will be on view at the R.P.S. from Wednesday next, April 8.

Regarding cameras, cinematograph mechanism and the telegraphic transmission of photographs appear among patents of the week. (P. 277.)

## "COLOUR PHOTOGRAPHY" SUPPLEMENT.

W. Scheffer, of the Carl Zeiss scientific staff, has published results in the microscopic examination of sections of the Autochrome film. (P. 25.)

French writer suggests and recommends a portable photographic means of ensuring correct exposure of Autochrome plates. (P. 26.)

On washing of Autochrome plates and their development with amidol figure in correspondence on colour photography. (P. 27.)

On von Hübl, whose book on the Autochrome process has been published (page 32), has given particulars of the sensitisation of the Autochrome plate as he has found it. (P. 30.)

German writer has thought well to give directions for the making of a single Autochrome transparency from a set of three-colour negatives. (P. 30.)

E. J. Wall, F.R.P.S., gives particulars of a green-light carbide lamp for illumination for three-colour work. (P. 28.)

Use of an after-bath of alcohol in the colour-sensitising of dry plates by bathing is recommended by Herr Paul Thieme. (P. 29.)  
Sensitising measurements of some new dye-sensitisers are given on page 31.

## EX CATHEDRA.

### Mr. Hinton's Pictures at the R.P.S.

The current issue of the "Photographic Journal" announces that a collection of photographs by the late Mr. A. Horsley

Hinton will be on view at the R.P.S. House, 66, Russell Square, W.C., from April 8 to May 5. The opportunity of seeing this collection should not be missed, for, while so many examples of Mr. Hinton's work have seldom or never before been seen together at one time, there is also a possibility that a similar collection may not readily be got together again. Mr. Hinton has been a great power in the world of pictorial photography, and it is only fitting that such an exhibition should be held at the earliest opportunity.

\* \* \*

### An Imperial Issue.

We have to thank those who have congratulated us on the reception accorded to last week's "Colonial Number" of the "British Journal," an issue which has now been despatched to photographers and photographic dealers in every quarter of the world. We are glad to find that our proposition to bring ourselves and others into touch with the large numbers of the photographic fraternity scattered in isolated places has been approved by the photographic trade as an eminently sound business proposition. We had to bide our time until we could talk of our ability to post a large extra edition to photographers not at present known to be on our books, but the labours of months having come to an end, we can now pride ourselves on being the possessors of a list of colonials and foreigners outside of Europe which we have reason to think represents a larger circle of buyers than any other list available for circularising purposes. As one reader puts it, the "B.J. Colonial Number" should be another link in the imperial chain of British commerce.

\* \* \*

### Lens-Testing at the National Physical Laboratory.

The report for the year 1907 of the National Physical Observatory shows a marked increase in the number of photographic lenses tested. In 1905 only eight were tested, in 1906 the number increased to eighteen, and in 1907 to twenty-nine. This is far more satisfactory, considering the number of new lenses that are issued every year, and it shows that makers are becoming convinced of the value of a "Kew" certificate as an advertisement of their productions. The twenty-nine lenses included one lens of 6 ft. focal length and of 5½ in. diameter, fitted with a prism and designed for the reproduction of plans in the Ordnance Survey Department, and also several process lenses. The advent of these latter has necessitated a modification of the testing apparatus, and by mounting the object and the observing microscope

on two parallel optical benches set at right angles to the axis of the lens, the process lenses are tested for their ability of producing a plane image from a near plane object, which is essentially the work they are required to perform. A new method for testing the definition of lenses has also been worked out by Mr. Hunter from an idea suggested by Major Leonard Darwin. Particulars of this method and of the apparatus used will be published shortly. This report shows that the Observatory is giving every attention to the testing of photographic lenses, and in view of this fact the value of a Kew certificate cannot be doubted.

### Evening or Morning Dress.

The experiment tried by the North Middlesex Photographic Society recently appears to have fulfilled expectations. There are, no doubt, many members of photographic clubs who do not avail themselves of the "claw-hammer" coat, having no use for it beyond two or three occasions in one year. These worthies rather naturally shrink from appearing in an assembly where all others, even the waiters, are as like as peas. It is a laudable reticence, and without doubt must often have kept dinner subscriptions much below a profitable number. On Saturday, the 21st, at the Hotel Florence, there was not only a larger gathering than formerly, but a cosy Bohemianism over all that was distinctly cheering. When such exalted people as the members of the Omar Khayyam Club have their dinners in morning dress, there can be no room for ideas of lowering the tone of a society when a similar free-and-easy course is adopted.

## PHOTOGRAPHERS' SHELIVING.

### II.

In the printing-room especially everything should have a place, and be kept there. Carpenters say that a clear bench means a saving in time of quite ten per cent., and the same is true of a printing-room.

Negatives should not be allowed to litter up the bench, but should have their proper shelves, with divisions for finished but unpacked orders, proofs, and specimens. It will be found advisable to classify the latter—say, under the headings of men, women, and children. There should

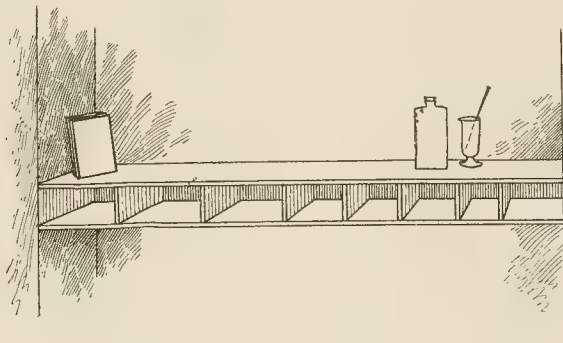


Fig. 1.

be places for tissue paper, stamp board and brush, vignettes, cover glasses, safe edges, stamp edging, and spotting colour and brush.

The pads and blocks of various sizes must be within reach of the bench where the frames are refilled. A handy shelf is made by taking two boards, eight inches by half-inch (Fig. 1), separating them by nailing between them several pieces of three inches by three-quarter inch stuff eight inches long. These short pieces are placed on edge, and

of sufficient distance apart to make suitable compartments of 1-1 plate pads, cloth, and rubber, blocks for blocking out half a whole-plate when two cabinets are taken upon half-plate pads and blocks, and quarter-plates. Any room over will be useful for odds and ends. By this method the top shelf is free for other work. If one has already a shelf in position, one has only to fit the divisions on board to have another free shelf immediately.

Masks of various shapes are always wanted, are always getting torn, and always difficult to get the right size. They are laid on an ordinary shelf. Pigeon-holes are not satisfactory for these, a miniature chest of drawers the

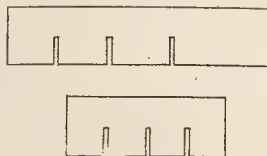


Fig. 2.

will stand on the bench is better. The different sizes and varieties have each their own drawer.

Dry-mounting on papers usually means a large variety of colours and sizes in mounts and tints. If the latter are piled together promiscuously it seems a small matter to get the required tint; but it will be found that if each is kept separately, yet within easy reach of the mounting table, the time saved is very appreciable.

For this purpose it is not a bad plan to provide a set of pigeon-holes, each hole being, in the case of the mounts, four inches deep, ten inches from back to front, and half an inch wider than the mount for which the particular holes are required. The best method of construction since there is but little weight to carry, is that shown in Fig. 2. As an example of the small space taken up, one may say that a set of holes to take twenty-seven varieties of mounts size 12 x 10, and an equal number size 10 x 8, only occupy a space 5 ft. x 3 ft. x 10 in. A similar set of holes for tints will take up much less room than that, five inches deep, three inches high, and ten or five inches wide being sufficient for each hole. To return to Fig. 2, this construction is not so difficult as it looks, since, after being

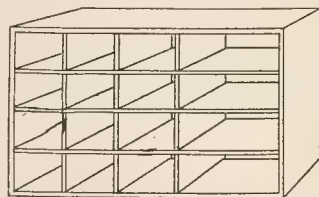


Fig. 3.

planed up and cut approximately to size, the upright and cross pieces respectively are nailed together, the two solid blocks then being trimmed up. The gaps are marked out to size with a square and gauge, sawn half through, and the piece removed with chisel. The pieces are then separated and slipped together, and can easily be taken apart again if required. The sides and top and bottom may either be grooved for the cross and upright pieces, or can be simply nailed to the latter. Fig. 3 shows the complete outside.

Deal tables are used in the photographer's work-room very frequently for a variety of purposes. Their usefulness is greatly enhanced by fitting a shelf under the table



per, midway between it and the floor. If the table is placed against a wall a piece of wood should be nailed to the back edge of top so as to form a fence, to prevent small articles from getting between table and wall. The fence is made about ten inches high, and a shelf, six or more inches wide is fastened on top of that supported by brackets at ends, no space is occupied, the table proper can often be kept much freer for work. It will frequently be found, however, that a fixed shelf can advantageously replace a table.

In the dark-room, shelves for the various bottles are, of course, imperative. The hypo dishes should be arranged over the sink. A hypo tank takes up less room than one, and will hold twelve plates. We have fixed on to

the outside of our sink at one end a square box of such a size that the tank just fits into it. All drippings drain off into the sink instead of running on to the floor, as when plates are removed from developer to the dishes.

It will be found, when one is fixing shelves into a small room, that high shelves seem to cut off space in a disagreeable fashion. If, however, the lower shelves only come three feet above the floor, and are continued again if necessary six feet above it, there seems practically no restriction of space. Of course, each will discover for himself the waste room that might make useful shelf-room, or the space occupied to poor effect that can be economised; but we hope these generalities will be sufficient to remind one of a matter that is too often "shelved."

## THE MODERN NOTE IN THE DESIGN AND FITTING OF PHOTOGRAPHIC PREMISES.

### II.

As to the matter of the nice appearance of the photographer's premises is an important one should be self-evident. When we consider that, by reason of the stress of modern competition, it becomes more necessary every day for the photographer, as well as for all others who cater for the public's wants, to make a living, to "put his best foot forward," and to give the best possible show of the wares he has to offer to the public who are constantly becoming better educated, better able to appreciate all that is pleasing and artistic, and without, none

possessed of more artistic knowledge) lag behind, with their ill-arranged windows and show-cases, often overcrowded with incongruous and ill-assorted specimens; and with their dusty and untidy reception-rooms and studios, often much too "photographic" in all senses of that much-abused word? That there are many exceptions to this state of things I am, of course, only too pleased to admit, but even among these exceptions one often sees little faults and shortcomings which might be easily remedied; and the places upon the design and arrangement of which

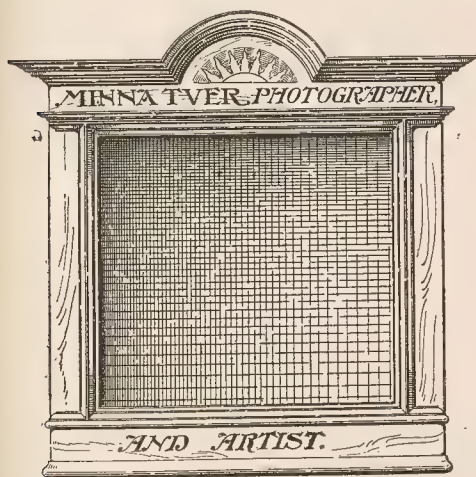


Fig. 5

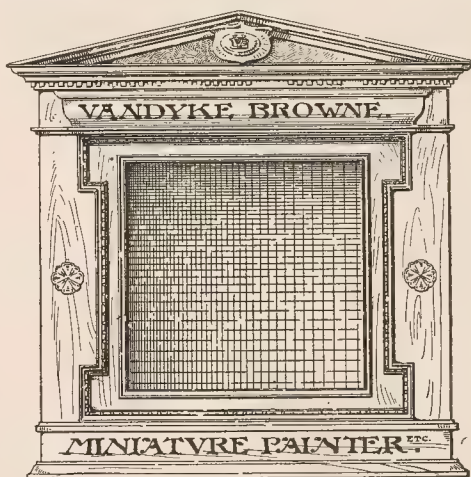


Fig. 6

less keen in demanding value for their money. That such a display will be more readily attracted to an establishment which shows artistic taste in its surroundings and ensemble, as well as the work produced, than to one that in its designing and arrangement shows less of that quality than the confectioner's next door or the butcher's over the way, is surely the fact; while it should also be remembered that the work itself will look very much better if seen in an appropriate and artistic setting. Most photographers having come to this conclusion, why should photographers (who certainly should be, but often, I fear, are not,

little or no trouble has been spent by their proprietors are still far more common than they should be, either for the credit of their owners, or as a means of filling their pockets.

In this latter connection I am very emphatically of the opinion that it pays the photographer to have an artistically arranged and up-to-date place of business, and that the expenditure of some amount of thought and a little money on the matter is, in all cases, a good investment for him. Of course, only the minority can afford to employ eminent architects and first-class decorators, but all may study the rules of art and of good taste,

and each apply them according to the circumstances of his own case and position. It is by no means necessary that large sums of money should be spent to produce an artistic effect, and in many cases it is surprising what a little modification of existing conditions will often suffice to make an enormous amount of improvement in the appearance of a previously commonplace and even apparently unsuitable place. Paint, paper, canvas, draperies, and light woodwork are all very cheap, and with a little judicious employment of such things great transformations may often be very easily brought about. The main point is for the would-be improver to grasp clearly the principles which underlie the matter, and how best to apply them to the particular case with which he has to deal, and to afford some hints on these is the purpose of this and the following papers.

One of the first things to remember with regard to all decorative work is that you should ornament construction, and not construct ornament. To make sure of obeying this principle, the use and purpose of the thing under construction must first receive careful attention, it being an undoubted fact that anything which is absolutely and exactly fitted for its purpose will nearly always possess some element of beauty as well. This

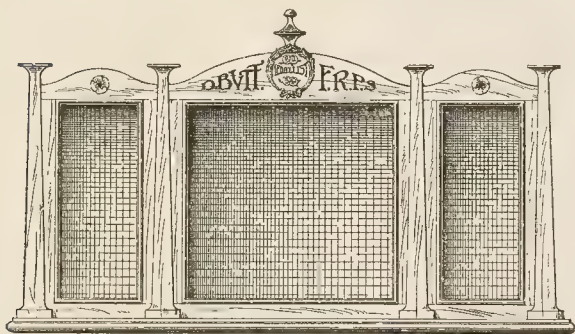


Fig. 7.

"beauty of fitness" is, for instance, wonderfully illustrated in the honeycomb, in which you have the necessary cells constructed so as to give the maximum of holding capacity and strength with the minimum of material, and at the same time presenting on the surface a pleasing pattern of adjacent hexagons that has been used by artists and decorators of all ages and countries.

The principle of ornamenting construction and not constructing ornament, above referred to, being the basis of all good architectural and decorative effect, it must be especially kept in mind while we consider the problems with which we are here dealing, namely, how to make suitable and artistic the surroundings of an ordinary photographic business. The first point with regard to the latter is, naturally, how the work of the photographer may be set off to the best advantage. In an ordinary business this work may be considered to be generally of a monochromatic character, and to be, to a large extent, composed of portraiture. It will, however, vary considerably in tint, and also in size, so that these latter points must also be considered while means for its display are being arranged.

#### The Photographer's Shop Window.

The photographer's first and most important means of introducing his work to the notice of new clients is, of course, his shop window or show-case, and we will, therefore, proceed first to consider the design of such things. With regard to the first-mentioned of them, it may be at once said that a very large amount of space is by no means necessary,

or even desirable, for not only is a large sheet of plate-glass an unpleasing, ugly, and costly thing, but it is also usually very destructive of anything like good architectural effect in a building in which it occurs. It is also very difficult to fill a very large window satisfactorily with photographic work. If the window is tall and high, anything placed in the upper part of it is not only thrown out of perspective, but is also out of the range of vision of the passer-by, unless by unpleasant straining of the eyes and neck; so that in case such a window exists and cannot be altered, it is generally better to partially drape it and use the upper portion for the admission of light to the shop beyond than to place any specimens in such a bad position.

#### A Small Window is Better than a Large One.

A very large window also demands an undue number of specimens to fill it, which makes it a special disadvantage to photographers in the smaller provincial towns, where not only are sitters fewer, but where also a constant change of window dressing is more desirable than in the larger centres of population. Among a large quantity of work there must also, of necessity, be a greater chance of things which do not harmonise coming together, to the destruction of artistic unity of effect; to say nothing of inferior work having to be sometimes used to make out, which will, of course, lower the average of the whole. A large collection of portraits is also apt to be a weariness to the casual spectator, who would give a much more appreciative attention to a smaller collection of the photographer's best work. In a small window, too, the much more artistic system of only showing work in one process at a time may be adhered to, which not only is each display more harmonious in itself, but each can also have its proper and most suitable background and setting in the way of draperies, etc., and thus more striking and attention-arresting changes be constantly made, and a small quantity of the artist's best work thus effectively and tastefully arranged do him and his business a great deal more good than a large amount of inferior stuff going badly together, and some portion of it at least out of harmony with its surroundings.

#### Draperies for the Shop Window.

For these one-process displays, the window might be filled one week, for instance, with sepia carbon, another with blue platinotype, and another with matt silver prints, and so on, and for use with each might be made a set of window draperies harmonising in tint with the work to which they are to form a background. This idea is often carried out by such firms as Fullers, the well-known confectioners, and others, and, although the photographer should not use the brilliant colours which often suit their wares, he might well take hints from the softer and more delicate colourings used by Messrs. Waring, Liberty, etc., to show off their silver, pottery, and other artistic goods. I have said "should not" in the above sentence, because, as a matter of fact, I find that the photographer very often, when buying his window draperies and fabrics, forgets that they are not themselves the objects to be shown, but only the background and foil for his work, and so gets them much too strong and obtrusive in colour and effect, violating the principles of subordination and fitness with brilliant crimsons, electric blues, and even vivid greens which are totally out of harmony with every variety of his work. Instead of this, how much better delicate brown or creams to go with his carbons, ivory white or soft greys for his platinotypes, and whatever broken tints that may best harmonise with the colour to which he tones his silver prints. The variety of materials which may be used for the lining of showcases, or for window draperies, is very large, including holland, linens, canvases, plushes, velvets, and silks, and while the colour should harmonise with that of the work which they form a setting and background, it may be also laid down that the texture chosen should be proportionate, as it were, to the size of the pictures to be shown; a coarse canvas being, for instance, most suitable for going with large works, while smaller



re delicate pictures should be seen against finer and softer Enlargements generally look well against canvas, carbons and platinotypes against hollands and linens, prints against silks, and miniatures and coloured work plushes and velvets. It may also be added that the chosen should generally be without pattern, or at most a self-coloured one as may be found on some damasks and brocades, as any assertiveness or conspicuousness of design would detract from the restfulness which is necessary to backgrounds, and cause them to compete for the spectator's attention with the work that they should only unconsciously

general interior fittings, other than draperies, should be of wood, the restlessness and disturbing glitter of silk, mirrors, tiles and such-like things being scrupulously avoided. Palms, pot plants, and ferns are also undesirable to a photographer's window display, to say nothing of monstrosities as stuffed kittens and other *lusus nature*, I believe, are not unknown in such a position. The window enclosures must, of course, be in harmony with that of the shop front and that of the interior fittings. The shop itself as they are seen in conjunction with both, suggests us naturally to the next part of our subject, namely, the design of the exterior of shop-fronts and show-cases.

#### The Shop Window Exterior.

To illustrate these I have prepared sketches of one or two styles, four of which were given last week. The principles kept in mind in designing them are:—Simple, the avoidance of the glitter of metal or marble and over-elaboration of ornamental detail; and moderate size and cost. Where, as is most often the case, wood is the principal material, there is nothing better than good oak, left from the tool, and wax-polished, which will form a good and harmonious setting for most kinds of graphic work. For interior show-cases or fittings to hold prints, miniatures, or other small coloured work, darker such as rosewood, and a higher polish may often be used to advantage, but for exterior work I think that oak stands pre-eminent. A good example of it, both for interior and exterior, in connection with the display of photographic work, is seen in the alterations made to the Kodak Company's shop in Regent Street, from the designs of Mr. George Walton.

#### Some Designs of Shop Fronts.

The three designs, numbered Figs. 5, 6, and 7, are for show-cases, to be executed in wood. In order to save space, the two first have been drawn with the framework in larger proportion to the glass area than would be desirable in actual work, but as, in any case, they are only intended as suggestions, which might be modified to suit different spaces and conditions, this is not of importance. In all three cases they are fairly simple in construction, and could be made almost anywhere at moderate cost. The small amount of suggested ornamentation and lettering might be executed in paint, composition relief, or inlay, which represent, in the order given, differing degrees of increased expensiveness.

#### Styles in Painted Woodwork.

When painted woodwork is used, as will be very generally the case when existing premises have to be adapted, without much structural alteration, for photographic use, we are limited, by the necessity for harmony with the work to be displayed, to but a few tints, but still some very effective and artistic schemes may be worked out in ivory white, creamy white picked out with brown or Indian red, brown or dull black with warm white. Black, with a little gold, is also possible, but any brighter colours than those mentioned are usually to be avoided. Of course, such artistic abominations as any kind of graining or marbling will be eschewed by the modern man of any taste whatever. Any necessary metal work may be in wrought iron, finished either black or "armour bright," or of dull copper or bronze, but brilliantly polished copper or brass is generally out of place.

With regard to any lettering that may be required on any shop-front or show-case, the modern note of taste requires that it should be small in quantity, not too large in size, and of good artistic design in harmony with its surroundings, all of which qualities may be easily obtained without any sacrifice of due prominence or legibility.

With reference to the illustrations which accompany this article, it may be said that they have been prepared as suggestions only, but they make some attempt to show the various degrees of elaboration which may be considered appropriate to different situations and classes of business.

DRINKWATER BUTT, F.R.P.S.

(To be continued.)

## CONVERSATIONS ON COPYRIGHT.

### I.

RIGHT. The sole and exclusive right of copying, engraving, reproducing, and multiplying any photograph, and the sale thereof, by any means and of any size.—[Extract from Copyright (Works of Art) Act (1862).] This explicit definition of copyright from the Act, the present series of conversations will aim to convey by a series of examples and simple dialogue the way in which the law affects the photographer: I., as regards ownership of the right; II., as regards registration; III., as regards sale of the right; IV., as regards infringement of

copyright; and V., as regards copyright in foreign countries. We will ask the reader to assume that he is the querist (Q.) and that the answers (A.) are given to him (as they are) by one who has had cause to digest every sentence of the Copyright Act, and of the judgments in the courts, and has, moreover, for years past rarely passed a day without having some incident of a photographer's business in which copyright was concerned brought before him for his advice. In this first section of the subject, continued from last week, we deal with the ownership of copyright as it affects the photographer.

#### THE OWNERSHIP OF COPYRIGHT.

I should like to know how the photographer stands in relation to the copyright in photographs of babies or children who may die. To whom does the copyright belong?

It is not likely that persons of such extreme youth paid for photographs. Probably their parents did so, therefore the copyright remains in their possession.

Another case appears of importance. Suppose a photo-

grapher takes a sitter in several positions. To whom belongs the copyright in those which the sitter rejects?

A.: It was long ago held that such surplus negatives are exactly on all fours with those which the sitter chooses: the photographer must not use them or print from them without the sitter's permission. The reason for this is that in the taking of a photograph payment is for all attempts—for the

labour of the author, in short—and, therefore, the copyright is not vested in the photographer.

Q.: There is still another case. A person, A., brings a sitter, B., to the studio to be photographed, and orders some portraits. I suppose the copyright falls to A. in such a case?

A.: Certainly it does, if the photographs are taken to the order and at the expense of A.

Q.: Suppose the photographer takes one or two positions for himself?

A.: It has been held, that unless there is an agreement to the contrary, all the portraits taken at a sitting arranged in this way are the property of the person who orders the sitting.

Q.: What about groups, such as those of football clubs? Can we assume that, as there are so many persons concerned, the copyright is not owned by any one of them?

A.: Certainly not. Some one person—e.g., the secretary or treasurer of the club—is responsible for payment, and in this and similar cases the copyright belongs to the person responsible for paying the photographer.

Q.: Am I to suppose from what we have said that any payment of money to a portrait photographer by a sitter means that the copyright is therefore vested in the sitter?

A.: Not at all. If the photographer receives no payment for the sitting, the copyright falls into his possession. As it is his, he is therefore at liberty to sell prints to the sitter or to anybody else.

Q.: The "free sitting," in fact?

A.: Exactly.

Q.: Could it not be argued that the subsequent sale of prints constitutes a "valuable consideration"?

A.: It has been so argued, but the courts have decided otherwise; the Act expressly states that the *negative* shall be made or executed; in other words, the sitting given for a good and valuable consideration—i.e., if the copyright is to be the sitter's.

Q.: In thus acquiring the copyright, is the photographer precluded from receiving any money at all for the sitting?

A.: He may accept a reduced price; but in that, and indeed in any case where it is possible to assume he has been fully paid, he must get the sitter to transfer the copyright to him.

Q.: I should like to know how such an assignment should be worded.

A.: The following form shows the kind of agreement suitable for the purpose:—

To Mr. ....

In consideration of your allowing me a reduction from your usual terms for taking photographs of me or on my behalf this day, I hereby agree that the copyright in such photographs shall be reserved to you, and that I will not deal in any way with the photographs to prejudice your interest in the copyright.

Dated the.....day of....., 190.....

Signed.....

Witness.....

Q.: I take it that transference of the copyright in this way to the photographer deprives even the sitter of the right to allow the photograph to be reproduced.

A.: That is so; but photographers who work largely on the "free sitting" principle usually do not overstep the mark in exacting a fee for reproduction. It is usual, for example, to allow an actress to employ the photographer on her professional card, or in other circumstances in which, otherwise, she would have to pay for the reproduction.

Q.: Under the usual conditions of payment for the photographs, I understand that the copyright belongs to the sitter.

This means, I suppose, that if the sitter takes a print of a making to another photographer, he can have copies made, and I cannot prevent it.

A.: Of course you cannot. Your sitter has a perfect right to do what he likes with his own.

Q.: In the event of these (inferior) copies being placed, have known it done—in mounts bearing my name, have I a remedy for the damage to my reputation?

A.: Possibly you have, under plea of false trade description but the Copyright Act cannot help you.

Q.: If a sitter, as sometimes happens, is asked for a photograph of himself for reproduction, and if he places one by for which he has paid in the usual course, should he not state that my name as photographer is acknowledged in the matter?

A.: There is nothing in the Copyright Act to compel him to do so, nor is there any custom of the trade to suggest that he should do so. He is simply using what he has paid for, and if he does more, it is out of consideration for the photographer.

Q.: So far as concerns the photographer's right and liability in regard to the sitter, I think we appear to have exhausted the subject for the present, but there are yet one or two points as regards ownership of copyright which I would like to explain. To give an example of what frequently occurs: I obtained permission some years ago to photograph the interior of a local church. On recently issuing a postcard of the subject the vicar now tells me I have no right to do so, and that I must withdraw it.

A.: You are entirely within your rights, and the same thing applies to photographs which, by hook or by crook, a photographer may make in places where photography is forbidden, or where the sole right to photograph is let out to a particular photographer for a sum of money. It may not be good to make use of what has been acquired by stealth, but that is nothing to damage your copyright in such views. The objections of the vicar, for example, are either made in ignorance or are only bluff.

Q.: A similar case is sometimes met when one is photographing a street scene and certain figures appear large enough in the photograph to be recognisable. I have had parties object to the issue of the photographs, but from what you say they are, so to speak, without a leg to stand on.

A.: The cases are not quite parallel, although in the matter of copyright they are. But it may happen that your photograph may—without any such intention on your part—represent persons in such a way that it may disparage, libel, or prejudicially affect them in a social or commercial way, if that is the case they may be able to make you withdraw the copies from circulation. For example, if a snapshot which you (as a seaside photographer) may have taken of a troupe of pierrots reflects unfavourably on their personal attractions there is good reason to suppose that its sale would harm attendances at their performances, and they would probably succeed in getting its sale stopped.

Q.: I must ask you now as to photographing paintings, engravings. I am occasionally asked to photograph paintings and copies of paintings, and there is always a doubt as to whether such work does not expose me to action for unlawful copying.

A.: In the case of original Old Masters there is, of course, no copyright, and they can be copied by anybody fortunate enough to get permission. It may be taken for granted, though, that all copies of them are copyright. The Act allows copyright to exist in any number of separate copies of a work of art, practically every copy is made solely with a view to charging fees for its reproduction. Hence caution should be exercised in making any further reproduction without permission.

Q.: Are engravings on all fours with paintings?

A.: No, the law is different. Whereas paintings and photographs



are placed on the same basis as regards the duration of it in them—that is to say, the copyright lasts for the the author and for seven years after his death—an ang enjoys protection for twenty-eight years from the date publication, which date should be stated on the print. erefore usually safe to copy an old engraving, since the ht in anything older than twenty-eight years will have

(To be continued.)

## THE ORIENT IN WELLINGTON STREET.

NTING's photographic studies of scenes and people in Japan er countries of the Far and Nearest East continue to attract ed visitors to the "little galleries" at the house of the where they are being shown until April 19. It will interest itors when we say that Mr. Ponting has in all a series of an half a hundred views of Mount Fuji. These are the of many weeks of work during his three pilgrimages to Japan, ow it at all seasons of the year. Mr. Ponting has tramped nes round the mountain—a circuit of over 100 miles—and has ascended it. The Kaia grass picture alone was only obtained rumping the twenty mile return journey from Shoji over a times. In a district so wind-swept as that is, only one who l the experience can appreciate the patience needed to get rone foregrounds, and a mountain twenty miles away, on one e same plate. All these results and more were also secured oscopic form for the H. C. White Co., 110, Strand, London, om Mr. Ponting made a set of stereoscopic plates. The Hundred Views of Fuji," by Hokusai, the great painter of e bourgeois life as well as scenery, were what gave our or the idea of making a series of photographic views of this s mountain, but the unfavourable weather so often ered impelled him to give the work up long before he had re near completed it. So far as he got with the work, how- can be said that when he published a simple half-tone album ty-five of the views it was received with immense enthusiasm, y by the entire foreign community in Japan, who, to a man, o the mountain's beauty almost as the Japanese themselves, the Japanese also, and the first edition of 2,000 copies sold most immediately.

reception of these studies of Fuji may be judged by an from the writings of a living authority on Japan. Professor Chamberlain, joint author of "Murray's Guide to Japan,"—"In fact, it would scarcely be an exaggeration to say r. Ponting has discovered a new mountain; for no one had en the great quiescent volcano depicted from so many spots except, indeed, from the pencil of Hokusai. But, then, thisainter gave representations which were half true, half fanciereas the album before us is pure and unadulterated truth." he present exhibition, the "Morning Post" says: "No doubt eaders will remember Mr. Ponting as one of the most success- those who obtained photographs illustrating the Russo- se War. The salient feature of the present exhibition is the ence given to 'Mount Fuji,' of which there are no less than ferent versions. Mr. Ponting was so fascinated by this est mountain in all the world" that he spent many weeks ng it from all sides."

"Photographic News" writes:—"Here we see at first hand vironment of the Japanese at home disclosed as possibly no camera has presented it; and as only photography in clever can present it. Mr. Ponting is to be congratulated on his llection, which owes in this case not a little to the splendid rk in the shape of enlarging, finishing, framing, and, in ases, colouring, the prints by Messrs. Raines, of Ealing. rints are masterpieces of fine work that speak volumes for the ities of this famous firm, and the splendid, but reticent ng in many cases would probably delight the heart of the se artists themselves."

"THAMES" SCREEN PLATE.—The first demonstration of the es" screen plate (Finlay's patent) will be given, by Mr. C. L. himself, at the London and Provincial Photographic Associa- ld Napier Tavern, 25, High Holborn, London, W.C.

## DEATH OF MR. A. S. SPRATT.

WE very much regret to announce the death of Mr. A. S. Spratt, which took place on March 25, at the end of a painful illness. Mr. Spratt has passed a long and honourable career in the photographic trade, and at the time of his death was a director of the firm of Houghtons Ltd. He had previously built up the business of Spratt



THE LATE A. S. SPRATT.

Bros. at Hackney, where for many years he, with his brothers, had directed the extensive manufacture of tripods, cameras, and other articles used by photographers. On the amalgamation of his firm with Messrs. Houghtons Ltd., Mr. Spratt transferred himself to the large works of the latter company at Walthamstow, and his colleagues, both there and at the High Holborn offices of the firm, will, with many others in the photographic world, regret his decease.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for Patents have been received between March 16 and March 21:—

ARTIFICIAL LIGHT.—No. 5,960. Improvements in and relating to apparatus for printing photographs on postcards and the like by artificial light. Augustine Kerkham, 19, Holborn Viaduct, London.

FRAMES.—No. 6,372. Improvements in or relating to frames for pictures and the like. The Rotary Photographic Company, Ltd., 55, Chancery Lane, London:

### COMPLETE SPECIFICATIONS ACCEPTED.

These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

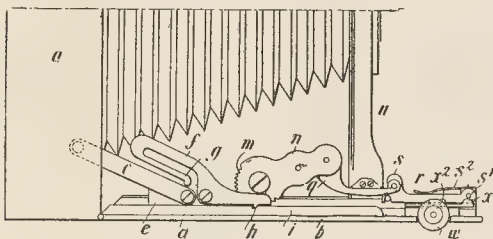
The following complete specification is open to public inspection before acceptance under the Patents Act, 1901:—

CINEMATOGRAPHS.—No. 3,987. Plate for cinematographic projec-

tions, and process of, and apparatus for, the manufacture of the same. Muller and Rousset.

**FOLDING CAMERAS.**—No. 20,989. 1907. The invention consists of a folding camera, in which the lens-board is brought out of the camera into position for use by turning down the baseboard, and is returned to its original position upon releasing the latter. The essential feature of the invention is a pair of levers, jointed together and operated at one end of the camera struts. They are so arranged that the end not so attached describes a straight movement along the baseboard and moves the lens-board.

$n, q$  are the pair of levers jointed together, the lever  $n$  being hinged to the baseboard and gearing with the rack  $k$  by means of the toothed segment  $m$ . The lever  $n$  is made to rotate upon its hinge centre at the displacement of the slide  $e$ , and for this purpose a toothed wheel  $l$ , corresponding in its dimensions with the toothed section  $m$ , is rigidly mounted upon the axis of the lever  $n$ , but out of gear with the rack  $k$ . Two toothed wheels  $o$  and  $p$  half the size of the toothed wheel  $l$  are rotatably attached to the lever  $n$ , and geared together. The toothed wheel  $p$  is attached



to the lever  $q$ , which therefore passes through the same phases of movement as the toothed wheel. Both toothed wheels,  $o$  and  $p$ , are made to describe a rotary movement when the lever  $n$  is swung upon its axis, as the toothed wheel  $o$  gears with the stationary wheel  $l$  and the end  $r$  of the lever  $q$ , connected with the wheel  $p$ , is caused to pass along a straight line, describing a forward movement when opening, and a receding movement when closing up the camera. The free end  $r$  itself is held within the hook  $s$  by means of a projection. The hook  $s$  is pivoted at  $s^1$  to the slide  $t$  of the lens-board or panel  $u$ . The end  $r$  therefore forces the objective-slide along with it in its straight movement. The lens-panel  $u$  is hinged to the slide  $t$  by the hinge  $v$ , so that it is parallel to the baseboard  $b$  when the camera is closed up. Newnham Browne and Co., for the Emil Wünsche Aktiengesellschaft für Photographische Industrie, Reick, Dresden, Germany.

**TELEGRAPHIC TRANSMISSION OF PHOTOGRAPHS.**—No. 5,187. 1907.

The invention relates to a process of distance transmission of photographs, etc., in which the variations of conductivity of the original to be transmitted are utilised in a transmitter to act on a telegraphic circuit which includes at the receiving station, a telephone receiver or a polarised or non-polarised electro-magnet, the flexible diaphragm of which thus receives movements proportional to the variations and sufficiently great to engrave on a metal surface or reproduce the original in other ways. Every time that the pen or needle in question meets a point covered with material of different conductivity, the intensity of the current changes for a period of time in proportion to the length of the point, and the modification of current is transmitted by the line circuit to the receiver, which can be identical with the transmitter, except that the needle of the latter is replaced by a telephone receiver, of which the vibrating diaphragm is provided with a suitable engraver's point, which registers the different interruptions of current on a suitable surface, such as metal, gelatine, collodion, etc. The transmitter and the receiver must evidently be operated synchronously.

In this process the differences in the constitution of the layer of gelatine, collodion, etc., of the photographic plate (in the case of the transmission of a photograph) play the part of microphonic contacts which faithfully reproduce the half tones of the original. In fact, the pictures or photographs with salts of silver, platinum, etc., formed on or in the body of the layers or supports of gelatine, etc., are produced, as is well known, by a more or less uniform

distribution of the salts reduced to metallic state by the action of light. The layer retaining the metal forming the picture is, however, a practically uniform thickness, and consequently a practically constant electrical resistance at all the points in the direction perpendicular of its thickness. But the more or less proportion of metal retained by the layer of gelatine, etc., forming the picture modifies the resistance by reducing it more or less according to the proportions of metal which constitute different points of the picture. If, therefore, the latter is printed or transferred to a surface conducting electricity, each point of layer of gelatine, etc., in the direction of thickness, on passing under the point or the needle or stylo of the transmitter above mentioned, will vary the resistance of the circuit to a more or great extent. The effects produced on the armature of the receiver will, therefore, be similar to those produced by a microphone, the engraver's point of the receiver will penetrate to a greater or less depth into the layer to be engraved, according to resistance of the point which moves under the needle of the transmitter. In this way the receiver faithfully reproduces the original image with all its details.

When the negative or plate block in the transmitter is constituted by a so-called "carbon-photograph," the present process utilises the fact that the layer retaining the pigment, is more or less thick at the different points of its surface, practically in proportion to the shades and lights of the picture. It follows from that the resistances in the layer differ in accordance with the thickness of its different points. These resistances influence the current transmitted by the circuit to the point or stylo of the receiver, which will engrave in the receiver layer or surface point of depth corresponding to the reliefs and intaglios of the original of the transmitter.

When the original plate is constituted by a picture striped or grained in any way, the hollows between the different stripes, grains, etc., are all of the same depth, but the spaces between stripes, points, etc., are proportional to the lights of the picture. The currents acting on the receiver are in this case interrupted at the transmitter for a more or less long time, according to tones of the original picture. In this case the transmission may be effected with a plate photo-engraved on a suitable surface, with a copy printed from the plate. Nevertheless, in order to avoid the work of photo-engraving, it is more simple to use an image or copy grained or striped by photo-printing or other lithographic means or by other ordinary processes.

For the transmission of writing or drawings, the process may be carried out in several ways. It is possible to write or draw direct on a conducting surface metal sheet by means of a pen or drawing instrument, or it is possible to write or draw on lithographic transfer paper and to transfer on to a metal or conducting surface. The latter is then provided with the original reversed, and engraving received at the receiver can serve directly for printing numerous copies of the message received. If the original written, etc., be not reversed at sending off, it is sufficient to advance the receiver in the opposite direction to the transmitter in order to obtain in the former an engraving capable of being used direct for printing.

The half-tones of the picture can be reproduced at the receiver in several ways, either on a layer of any suitable material, hollows in proportion, or in inverse proportion, to the lights and the means already indicated; or on a layer of material by hollows of the same depth but of different surfaces; or on a layer of surface covered with a second layer of comparatively small thickness, of which the tonality is removed by the point or stylo of the receiver for forming the hollows or the contrasts. If the second layer be more or less transparent according to its thickness, it can also be more or less completely removed, in proportion to the shades of the original image.

As original may be used a tin foil on which the engraving photograph, etc., has been printed, written, drawn, etc., with printer's ink. The tin foil is then stuck on to a sheet of paper which renders it stronger. The tin foil is a conductor, whilst the image printed with printer's ink forms the non-conducting layer.

In order to make contact with the metal cylinder of the apparatus, the tin foil on which the original is printed or written is bent around the longitudinal edges of the paper backing



placed on the metal cylinder, so that the tin comes into direct contact with the latter when pressed in position.

For receiving an image direct, white paper covered with carbon paper may be placed on the receiver cylinder, the rounded off or blunted pin or stylo of the telephone vibrating against the carbon paper. This is important for receiving telegrams, engravings, and photographs, of which it is desired to obtain quickly only one copy.

For the printing on paper or on other material of the engraved plates received at the receiver, the said plates may retain the cylindrical shape to be employed direct on a circular press, or they may be straightened for printing on any press. Henri Carbonelle, 60, Chaussée de Ruysbroek, Uccle, Brussels, Belgium.

INEMATOGRAPH MECHANISM.—No. 10,078, 1907. The object of the invention is to prevent ignition of the films and to provide means in the case of fire or tearing of a film to turn on the lamps or other illuminating devices lighting the hall or other place where the apparatus is used.

The film is protected from the light as it passes through the machine, and is covered where the greatest amount of light is developed by a rotary shutter flap, which is raised, but only when the number of revolutions of the actuating device is normal, in such a manner that the light may enter in full strength. It is gradually closed when the number of revolutions is reduced, whilst should a tearing of the film occur a device is released which couples the actuating apparatus with the flap and returns the flap suddenly to the closed position. The device is also arranged so that when the film is torn the actuating apparatus is stopped and a device that effects the ignition of the lamps or other illuminating devices in the place occupied by the spectators is operated. Emil Gottlieb Homes and Julius Oszkar Gindert, 10, Kohlmarkt, Vienna.

### New Trade Names.

"STORRICO."—No. 297,850. Chemical substances used in manufactures, photography, or philosophical research and anti-corrosives, but not including caustic soda or chloride of lime, and not including goods of a like kind to any of these excluded goods. Storry, Withson, and Co., Limited, Bankside Works, Sculcoates, Hull, and colour manufacturers. November 9, 1907.

### Analecta.

*Extracts from our English weekly and monthly contemporaries.*

#### The New Lippmann Method of Stereoscopic Photography.

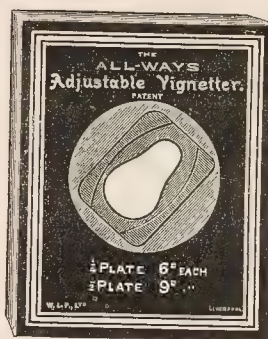
WRITER in the current issue of "The Amateur Photographer," in dealing with Professor Lippmann's new method, says: We can now give some details as to the actual means that may be adopted for producing a cellular film or texture which virtually consists of a number of minute tubes packed side by side and blackened inside, each tube containing a miniature Stanhope lens. Here is a possibility. A sheet of celluloid is moulded between two exactly registering and properly patterned hot plates, so as to produce a thin celluloid film, out of which rise pillars or cylinders of celluloid, the results being something like the cash mats used in shops, but much finer, and in transparent celluloid. The mould would naturally be figured as to give the top of each projecting cylinder the curved shape of the Stanhope lenses, the more curved end of each "lens" being at the top of the projecting cylinder, and the less curved end being on the remote surface of the connecting film. The interspaces between the cylinders being now filled in with black pigment, and the more even surface of the celluloid being coated with sensitive emulsion, all will be ready for exposure, and this exposure will be through the support, as in the Autochrome process, but no lens will be required, and the camera may be of the most rudimentary kind; indeed, nothing more than a dark slide and draw-shutter or other device for exposures. The first result will be a negative, but by taking advantage of a method of reversal similar or comparable to that of the Autochrome process, this can be converted into a positive.

The result will have within itself the elements of many stereoscopic aspects, as from any one standpoint an eye will only see one portion of each minute image, and the whole image formed by a combination of these points will change in orientation owing to different combination of these points, hence the ordinary view with two eyes should always be stereoscopic. How far this prospective wonder in photography will be actually realised can scarcely be guessed, but the main difficulty is one that is purely constructive, that of making the cellular and lenticular base, and this may only be a question of organisation and manufacture. Professor Lippmann has a few results which clearly show possibilities, but we may conjecture that when the cellular basis can be produced at a moderate price, and with the cylindrical cells about half a millimetre in length, and one-fourth of a millimetre in diameter, the method will have interest from what is commonly called the practical point of view, as this may give a sharpness approximating to the one-hundredth of an inch standard.

### New Apparatus, &c.

The "Merito" All-Ways Adjustable Vignetter. Made by W. L. Parkinson, Ltd., 5, Commutation Row, Liverpool.

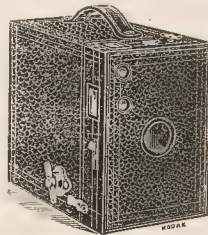
A simple and very inexpensive form of vignetter is this new introduction of Messrs. Parkinson, which consists of a cardboard frame to fit over the printing frame. It is supplied with a double cover, between which discs pierced with openings of various sizes and



shapes can be instantly inserted and adjusted in position. The depth of the frame allows of the vignetter being packed up at various distances from the negative, and the construction of the vignetter secures the negative from all light other than that passing through the vignetting aperture. The price of each vignetter, complete with three shapes and one blank disc, is 6d. in quarter-plate size, 9d. in half-plate. Extra vignetting shapes are obtainable in boxes of six at 6d.

The No. 2A "Brownie." Made by Kodak, Ltd., 57 to 61, Clerkenwell Road, London, E.C.

A new size of the ever-popular "Brownie" camera reaches us from the Kodak Company. The picture taken measures 4½ in. by 2½ in.,



a shape very similar to that of the postcard, though of slightly smaller dimensions. Nevertheless, a No. 2A "Brownie" negative printed with a border permits of the ready production of photo-

graphic souvenirs in postcard form. The little camera, which measures externally 6in. by 3½in. by 5in., is fitted with horizontal and vertical finder, achromatic lens, e-r-set shutter, giving instantaneous and time exposures, and a set of three diaphragms. It is, of course, for roll film, and takes a twelve-exposure spool of the size made for the No. 1a folding pocket Kodak. The camera, which has all the advantages of the daylight loading system, is sold for 12s. 6d.

The No. 2 "Brownie" Enlarger. Made by Kodak, Ltd., 57 to 61, Clerkenwell Road, London, E.C.

The convenient form of this fixed-focus enlarger will recommend it to many boy and girl users of the popular "Brownie" cameras. The instrument takes the 3½in. by 2½in. negatives of the No. 2 "Brownie," and the 2½in. square negatives of the No. 1, the former giving a 7in. by 5in. enlargement and the latter one 5in. by 5in. The manipulations are obviously reduced to the simplest possible form, and the enlarger, which costs 10s., should be popular with every user of the series of small cameras introduced by Kodak, Ltd.

## New Materials, &c.

**POSTCARD TITLE BORDERS.**—A new device for the simultaneous printing of the negative and the title in black letters on a white margin is being put on the market by Mr. A. W. Bowen, of 193, High Street, Watford. It consists of an opaque, flexible mask, composed apparently of a gelatine film stripped from glass and rendered opaque with a special pigment. On one inside edge of this film the title of the subject appears in transparent letters, so that the only operation necessary when printing the postcard is to scrape away a little of the film from the negative so as to give a transparent space underneath the lettering. The printing of both landscape or portrait and the title can then be done by the single operation. The prices and styles of these new mounts can be obtained from Mr. Bowen.

**WRATTEN LIGHT-FILTERS.**—Messrs. Wratten and Wainwright have prepared a card of small samples of their K<sub>1</sub>, K<sub>2</sub>, and K<sub>3</sub> orthochromatic filters, and of their set of tri-colour filters. This card of specimens is sent free for one penny stamp.

**STAND DEVELOPMENT.**—In reference to our notice of his metallic supports for "stand" development of plates in ordinary dishes, Mr. F. C. Clarkson writes from Colchester: "I am afraid some may court disaster if experimenting with film up—there would almost certainly be reticular markings with some developers. To place four half-plates or eight quarter-plates in 10 by 8 dish they should be arranged in two layers, each face down."

**CARL NORMAN POSTCARDS.**—Mr. Carl Norman, well known for years past as a landscape photographer, informs us that the agreement under which he has acted as manager of the Photochrom Company at Tunbridge Wells having come to an end, he has recommenced in business for himself at Barnet, London, N., as a printer of pictorial postcards. Mr. Norman sends us specimens of his work in collotype, P.O.P., and chromo cards, as well as of hand-coloured productions, all of which are excellent. Mr. Norman is evidently well able to compete in both quality and price with others in the public postcard trade.

## CATALOGUES AND TRADE NOTICES.

**CARBONOGRAPH.**—A new pamphlet of instruction in their new bromide-carbon process has been issued by the Rotary Photographic Company, Limited, Moorfields, E.C. It gives the directions for working the process in the simplest form.

**"OXTS" LENSES.**—Messrs. Aldis Bros., Old Grange Road, Spark-hill, Birmingham, have issued a circular of prices, which gives also a brief description of the properties of their new and moderately priced lenses.

**THE CURRENT NUMBER** of the "Prism," the miniature monthly issued by Messrs. A. E. Staley and Co. for the Bausch and Lomb Co., contains some readable notes on indoor portraiture. Messrs. Staley send the "Prism" on receipt of one penny stamp for postage.

**"THE PROFESSIONAL PHOTOGRAPHER,"** the monthly journal of the Kodak Co., contains in its current March issue some notes on rapid

photography with a "Graflex" reflector camera, on dry mounting, the working-up of enlargements, and two interesting notices of Mr. George Davison and the late Mr. Horsley Hinton.

A CIRCULAR from the Hales Camera Co., Bridgeton, New Jersey, U.S.A., gives us particulars of a full-size focussing camera in which no mirror is employed.

MESSRS. WALTER TYLER, LTD., of 48 to 50, Waterloo Road, London, S.E., have issued a comprehensive and abundantly illustrated list of the optical lanterns, cinematographs, and accessories which they are in a position to supply. From the same firm we have also received a catalogue of a large variety of lantern slides, which are available for hire or purchase, and which extend over a very wide range of subjects. Both lists should prove of interest to lecturers and other users of the lantern and cinematograph, and may be obtained on application to Messrs. Tyler at the above address.

MESSRS. TAYLOR, TAYLOR, AND HOBSON, in their 1908 catalogue, which is the 24th edition of their series of price lists, announce a reduction in prices of the Cooke lens, Series II., f/4.5 and Series IV., f/5.6. The list gives very full particulars of the various high-class lenses made by Messrs. Taylor, including those relating to the new wide-angle "Primoplano" Cooke. The table of conjugate foci is a useful feature of the list, and we are glad to see that the notes on a lens's action is included, as it gives a plain and eminently practical review for the guidance of a purchaser. The list also includes the specification of the lately introduced Taylor, Taylor, and Hobson focal-plane reflex. Messrs. Taylor, Taylor, and Hobson offer to send this handsomely printed and illustrated list post free on application.

MESSRS. REYNOLDS AND BRANSON, LTD., have issued an abridged list of their photographic specialties, amongst which we may make special mention of the series of "Rystos" dark-room lamps, including the new pattern of safety incandescent gas lamp, and also the "Rystos" sequential developing baths, which are made to take plates in both the English and Continental sizes, from 3½in. by 2½in. up to whole plate. Copies of the list may be obtained from Messrs. Reynolds and Branson, at 14, Commercial Street, Leeds.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

FRIDAY, APRIL 3.

Cardiff Photographic Society. Ten Minute Lectures by Various Members.  
West London Photographic Society. "Oil Printing." L. Ivory White.  
Ilkerton Arts Club. Rotary Carbograph Paper.

MONDAY, APRIL 6.

Bradford Photographic Society. Y.P.U. Slides.  
Bowes Park and District Photographic Society. "Pinatype." A. Rogers.  
Harrow District Photographic and Scientific Society. "Paper and Paper Making." E. A. Robins.  
South Manchester Photographic Society. Demonstration. W. J. Pearce.  
Preston Camera Club. Rotary Carbograph Paper.

TUESDAY, APRIL 7.

Royal Photographic Society. "Practical Demonstration of the Gum-Bichromate Process." C. Wille.  
Handsworth Photographic Society. Council Meeting.  
Stafford Photographic Society. Competitions, other than Lantern Slides.  
Leeds Photographic Society. "Owre the Border and awa' with Cycle and Camera North of the Tweed." Robert Mackay.  
Epsom and District Literary and Scientific Society. Arranging Prints for Exhibition.  
Hackney Photographic Society. "The Canterbury Pilgrimages." H. Snowden Ward, F.R.E.S.  
Rotherham Photographic Society. "Rome and her Treasures." Miss L. A. Law.  
Worthing Camera Club. Lantern Lecture. Theodore Roberts.  
Manchester Amateur Photographic Society. Rotary Carbograph Paper.

WEDNESDAY, APRIL 8.

Borough Polytechnic Photographic Society. "Choice of Apparatus." Ernest Human.  
South Suburban Photographic Society. "Recreations with an Enlarger." J. Nixon and J. L. Savage.  
Leeds Camera Club. "Servia and Its People." C. B. Howdill, A.R.I.B.A.  
Croydon Camera Club. "Afar in the Fatherland." W. L. F. Wastell.  
Nottingham Camera Club. "A British Touring Ground." Arthur Marshall.  
Everton Camera Club. Rotary Carbograph Paper.

THURSDAY, APRIL 9.

London and Provincial Photographic Association. "The First Demonstration of the 'Thames' Colour Plate." C. L. Finlay.  
Richmond Camera Club. "Stereoscopic Photography." F. P. Cembrano.  
Rodley, Farsley and Calverley District Photographic Society. "Cameras." W. Trickett.



C. School of Photo-Engraving and Lithography. "Some Notes on Electro-tying." Sherard Cowper-Coles.  
 London Photographic Society. "Architectural Photography." F. C. Boys.  
 Edgworth Photographic Society. "The Exposure and Development of a Negative." Demonstrated. F. E. Bill and R. J. Pummell.  
 Crystal Amateur Photographic Association. Rotary Carograph Paper.  
 heim Club. Smoking Concert.

# ROYAL PHOTOGRAPHIC SOCIETY.

ETING held March 31, Mr. J. C. S. Mummery in the chair. Mr. Bickerton, F.Z.S., gave a lecture on "The Camera as an Aid to Study of Birds," illustrating his remarks by a large number of term slides, which created much interest amongst his audience.

THE UNITED STEREOSCOPIC SOCIETY held a meeting for its London suburban members on March 28 at Shepherd's Bush, when Mr. Brooker entertained the gathering with an illustrated lecture on photographic work in the neighbourhood of Rye and Winchelsea. As society is organising an excursion to this district at Easter the lure was singularly appropriate. After the lecture Mr. A. J. Low, secretary, presented souvenirs in the form of booklets, containing copies of the winning prints of the year, to Mrs. Owen and Victor Selb.

SOUTHAMPTON CAMERA CLUB.—On Monday, March 23, two lantern competitions were held, at which Mr. O. P. Butler and Mr. Daw were adjudged the winners. Mr. S. G. Kimber judged entries, and at the conclusion gave a helpful criticism to each of competing slides.

ROYDON CAMERA CLUB.—The president (Mr. J. M. Sellors) gave demonstration on enlarging with home-made apparatus. It has in the practice of this year's president when he requires such appliances as reflex and other cameras, enlarging lanterns, and so forth, to design and make them for himself, and thoroughly satisfactory tools they invariably turn out to be. Up to the present it is believed he has drawn the line at manufacturing such things as stigmatic lenses and dry plates, and has even been known to purchase printing papers on occasion. On Wednesday, the 18th ult., slide papers were very much in evidence, the excellent products Messrs. Ilford, Illingworth, Kodak, and Wellington and Ward being in turn requisitioned for the production of a number of capital effect and "combination" enlargements. A home-made swinging stand for rendering converging lines parallel was also shown, the consequent distortion produced by the elongation, or compression of such lines, apparently, being considered of no moment from the "artistic" standpoint. A suggestion by a member that the method might advantageously be employed in portraiture for lengthening out wide-angle lenses of the horizontal type failed to meet with the appreciation its doubtful potentialities deserved. A free distribution during the evening of sample packets of Messrs. Wellington and Ward's bromide prints afforded a "grateful and comforting" touch to a most interesting and instructive demonstration.

LONDON PHOTOGRAPHIC SOCIETY.—At the annual general meeting held recently the following officers were elected:—President, F. C. Boys; vice-president, H. W. Bennett, F.R.P.S.; hon. treasurer, Farrow; hon. lanternist and librarian, W. Hornby; hon. secretary, Donald S. Parsons, 119, Kingston Road, Ilford; hon. assistant secretary, H. Eales; committee: Messrs. Goodchild, Haslam, Lyddon, Perrett, Schofield, Weaver, Westlorton, Whitelaw.

PROPOSED PHOTOGRAPHIC SOCIETY FOR HAWICK.—At a well-attended meeting last week, at which Mr. T. G. Winning presided, was resolved to take steps towards the formation of a photographic society for Hawick, a committee being appointed to obtain names of intending members and report thereon.

BROMLEY CAMERA CLUB.—An exhibition under the auspices of the above club will be held in the School of Science and Art, Bromley, Kent, from June 10 to 12, inclusive. There will be three open classes, in which silver and bronze medals will be placed at the disposal of the judge, Mr. Furley Lewis, F.R.P.S. A special silver medal will be awarded to the best picture in the members' classes, and a special gold medal to the best picture in the exhibition. Entries close June 1. Entry forms are now ready, and may be obtained from the hon. sec., Mr. Thomas D. Gratz, "Collingtree," Cambridge Road, Bromley, Kent.

## Commercial & Legal Intelligence.

AT STAMFORD HILL BANKRUPTCY.—At the London Bankruptcy Court last week the first meeting of creditors was held under the failure of Solomon Wolson, described as a photographer, of 126, Homeleigh Road, Stamford Hill. The statement of affairs filed by the debtor disclosed gross liabilities amounting to £868 11s. 10d., of which £820 11s. 10d. was due to unsecured creditors. The assets consisted of bad debts £447, estimated to be of no realisable value. It appeared that the debtor came to this country some fourteen years ago, and for seven years was engaged as a photographer. He then went to Russia for 3½ years, and returned to this country at the expiration of that period with a capital of £30. He then commenced business in the diamond trade as a diamond broker. He used to earn from £6 to £8 per week. He had no office of his own, but used the Diamond Club, 82 Hatton Garden, E.C. He gave up this business in August last. Since September last he has been engaged as a photographer. The estate was left in the hands of the Official Receiver for summary administration in the usual manner.

BIRMINGHAM MANUFACTURER'S FAILURE.—At the Birmingham Official Receiver's Office on Monday, the first meeting took place of the creditors of Mr. John Page Croft, of Packwood, Grove Avenue, Moseley, carrying on business at Cooksey Road, Small Heath, as a photographic paper and apparatus maker, and also at 24, Quadrant Chambers, New Street, as a tea merchant, and Mr. Alfred Roffey, grocer, of 586, Coventry Road, Small Heath, who was a partner with Mr. Croft in the photographic business. The Assistant Official Receiver (Mr. Acheson) said that the statement of affairs showed that the unsecured liabilities of the photographic business amounted to £431 12s. 1d., the net assets totalled £125, and there was a deficiency of £306. During the past year, it appeared, there had been a loss on the business of £1,291, although neither debtor had drawn anything out. The assets would not realise as much as the debtors had estimated, for few of the book debts appeared to be recoverable. If they had attended to their respective businesses, instead of experimenting in photographic materials, they would probably not have come into the Bankruptcy Court. The photographic business was launched by Mr. Croft, Mr. Roffey joining him in 1906, the former putting £800 into the concern and the latter £250. No proper books had been kept, but they would be called upon to prepare accounts showing how the loss of £1,200 was made. Mr. Croft's private accounts showed liabilities amounting to £2,323, of which £1,065 was for money borrowed in April and May, 1907. Mr. Kimpton, solicitor, who appeared in the interests of Mr. Croft, said that the assets of the firm included a formula for a secret process, which, if perfected, would undoubtedly become very valuable. At present it had no market value, but progress was still being made with the experiments. The Official Receiver remains as trustee.

FIVE PHOTOGRAPHS FOR 2d.—William Allen was charged, at the Bristol Police Court last week, with obtaining by false pretences 2d. from Florence Bryant; 2d. from Elizabeth Sarah Groom; 3d. from Elizabeth Bowman; and 2d. from Lily Portch. Mrs. Bryant said that on March 7 the defendant called at her home, and asked her if she wanted the children photographed on postcards. He said he represented a firm of Park Street photographers, and arranged to make five photographs for 2d. This money he insisted upon having in advance, and gave receipts. Other witnesses, all living in the neighbourhood of Lincoln Street, Barton Hill, gave similar evidence. Detective Wallace said he made inquiries on Tuesday, and at a lodging-house in Gloucester Lane he saw the defendant at a table with a number of small pieces of paper, printing the words, "The Art Portrait Company, Park Street," on them with a copying-ink pencil. He took him into custody. Witness found there was no firm known as the Art Portrait Company in Park Street, and no firm of photographers who had employed the defendant. He had no photographic apparatus, but merely some specimen photographs. The defendant pleaded guilty and said he was out of work. The defendant said he came from Liverpool. The magistrates sent him to prison for three months, with hard labour.

BOGUS PHOTOGRAPHER.—Before Sheriff-Substitute Smith, at Selkirk, last week, a smart-looking young man, named George Wood, photographer, 1, Park Street, Galashiels, pleaded guilty to a series

of frauds, numbering about thirty, by taking, or pretending to take, photographs of various persons in the district. He received payment, amounting to over £2, which he appropriated, and failed to deliver the photographs.

The Procurator-Fiscal said there had been one hundred charges against accused, but seventy had been withdrawn.

Accused, in pleading for leniency, stated that he had just been released from a term of six weeks' imprisonment for a similar offence.

In sentencing Wood to fourteen days' imprisonment, his Lordship stated that he had taken into account his previous term of imprisonment.

#### NEW COMPANIES.

WM. HOPWOOD AND CO., LTD.—Registered March 19. Capital £2,000, in £1 shares. Objects: To carry on the business of wood, photo, and colour engravers, designers, photographers, general illustrators, electrotypers, and stereotypers; to acquire from H. Makinson and W. Hopwood an invention for improvements in producing and copying drawings, and to adopt an agreement between the said vendors of the first part, J. R. Burton and H. B. Burton of the second part, and C. Eyre (for the company) of the third part. No initial public issue. The first directors (to number not less than two nor more than seven) are: W. Hopwood, J. R. Burton, and H. B. Burton (life directors), H. Makinson, and J. L. Baldwin. Qualification of life directors, £250; of other directors, £100. Registered office, 32, Barton Arcade, Manchester.

CROWLEY KENDRICK AND CO., LIMITED.—Capital £7,000, in £1 shares (2,000 5 per cent. preference). Objects: To carry on the business of general merchants, factors, traders, exporters, importers, purveyors, contractors, dealers in foods, ores, minerals, and photographic films and apparatus, advertising and general agents, bankers, financiers, etc. No initial public issue.

## News and Notes.

ERRATUM.—We regret that in our notice of the "Multi-Screen," on page 251 of our last week's issue, Mr. E. Webster's number was wrongly given. This should be 161, High Holborn, not 101, as stated.

SOUTH LONDON PHOTOGRAPHIC SOCIETY'S EXHIBITION.—We are asked to announce that by special request of the Borough Arts Committee the above exhibition will remain open up to to-morrow, April 4.

THE "PHOTO-SECESSION."—An exhibition of photographs by Mr. Eduard J. Steichen, including a number of Autochromes, was held at the little galleries of the "Photo-secession," from March 12 to April 2. The next exhibition will consist of a collection of drawings, lithographs, and water colours by Henry Matisse, the leader of the new movement in Paris, as represented in the Salon d'Automne.

MR WM. A. CASSON, barrister-at-law, who is a member of the London County Council and of the Royal Photographic Society, has been appointed to be a member of the committee of the London School of Photo-engraving and Lithography, Bolt Court, Fleet Street.

ROYAL PHOTOGRAPHIC SOCIETY.—It has been decided to make some alteration in the hours during which the society's house is open to members, which, after March 31, will be as follows: Mondays, Tuesdays, Wednesdays, Thursdays, and Fridays from 10 a.m. till 10 p.m., and on Saturdays from 10 a.m. till 2 p.m.

NORTH MIDDLESEX PHOTOGRAPHIC SOCIETY.—The annual dinner was held on Saturday last at the Hotel Florence, instead of at the Holborn Restaurant, as hitherto. The innovation had much to recommend it, and as much, we think, to make the change regretted. Another new departure was the abolition of that social convention, evening dress. Whether from these causes or not, the function was one of the liveliest and most enjoyable in the annals of the society. All the speeches were greeted with hearty laughter, except where references were made to recent sad events. Owing to the indisposi-

tion of Mr. G. E. Brown, the first toast, that of "The N.M.P.S.," was given by Mr. F. C. Tilney. Mr. Louis Dick toasted the judges, and Mr. Mummary, Pres.R.P.S., responded and presented certificates. The toast of "The Photographic Press" was given by Mr. Cauldwell, and was responded to by Mr. Wastell in his inimitable manner. "The Visitors" fell to Mr. H. Stuart, and was answered by Mr. E. T. Holding. A feature of the evening was the presentation of field glasses to the retiring president (Mr. H. Stuart), whose reception of the testimonial was a perfect model of matter and manner in public speaking. An enjoyable entertainment was interspersed, the best appreciated items of which were the musical sketches of Mr. Archie Naish, a pianist who can make a Bach fugue out of "La Maxisse" and an imitation "1812" overture out of the "Russian National Anthem" and "The Marseillaise," in counterpoint.

FIRE IN A LARBERT STUDIO.—Last week a fire was discovered to have broken out in the studio at Allanbank, Larbert, occupied by Fred Murray, photographer. The building, which was of wood, and not immediately attached to any dwelling, was entirely burned to the ground, including the whole stock of valuable negatives, framed pictures, etc. The damage, which is estimated at about £250, is partly covered by insurance.

THE LONDON COUNTY COUNCIL, at the meeting on Tuesday, agreed to give permission to the promoters of the Franco-British Exhibition to make a number of cinematograph and stereoscopic illustrations of work and other occupations in connection with school and college life for display at the exhibition.

PHOTOGRAPHY IN SHIPPING ADVERTISEMENT.—The Cunard Steamship Company have issued an ingenious pocket-folder, showing a series of photographic pictures of the "Mauretania" in mid-ocean snapped from the Cunarder "Ivernia."

MR. J. LIZARS announces that he has taken additional business accommodation in Edinburgh at 15, Shandwick Place, adjoining his present premises at No. 13. A special feature will be the exhibition of examples of the work of all the best lenses, cameras, and printing processes. Purchasers can thus see at a glance what will best suit their individual requirements.

KENTMERE, LTD.—With a view to the better protection of their trade mark, "Kentmere," it was unanimously decided, at a special meeting of the shareholders of the Commercial Photo Company, Ltd., to alter the title of the firm to that of Kentmere, Ltd., and the alteration has now been duly authorised.

CHANGE OF ADDRESS.—Mr. Wm. Brooks, who for the past three and a half years has been at Laurel Villa, Wray Park, Reigate, has removed to 10, Richmond Road, Ilford, Essex, where he will still carry on his collodio-emulsion work, in which he has been engaged for many years past.

THE ROYAL INSTITUTE OF PAINTERS IN WATER COLOURS.—The present exhibition of this society numbers some sincere and interesting works among its ranks, but, on the whole, it cannot be said to be an improvement upon the show of last spring. There is an obvious attempt to display works which appeal to a low stratum of popular taste. The moral of such a fact is that the people with the best taste are not the best buyers. We think it a pity, nevertheless, that this society, boasting a Royal charter and handsome premises, cannot see their way to selecting more works of a sort that would improve the reputation of their exhibitions. Tom Browne's drolleries, for example, are more fit for the Burlington Arcade than for the R.I. We are glad to note two pictures here, by our own contributor and critic, Mr. F. C. Tilney.

CINEMATOGRAH REGULATIONS IN MIDDLESEX.—At the meeting, on March 26, of the Middlesex County Council, the Licensing Committee reported having made considerable alterations in the regulations governing the use of cinematographs, with a view to minimising to the utmost any possibility of danger arising from the use of these apparatus. The new regulations, which number twenty, provide that six days' notice must be given of any intended exhibition so that the Surveyor of the County Council may inspect the



apparatus and see it at work. The cinematograph must stand in a proof enclosure or room, the floor of which must be covered with asbestos sheeting. The door shall open outward, and shall be self-closing, and of the three windows necessary in front of the enclosure, the central one shall not exceed 8 in. square, and the windows on each side shall not exceed 6 in. square. A flap screen shall be provided over the three windows and made so as to be operated from both inside and outside the enclosure. A fireman or other capable person shall always be in attendance near the apparatus with a wet blanket, two buckets of water, and a box of sand shall be provided. The Licensing Committee may, in special circumstances and on the certificate of the county engineer and surveyor, modify any of the regulations or require the adoption of further precautions.

Dr. E. KONIG, of Meister Lucius and Brünig, is now engaged on the writing of a work on the modern screen-plate processes of photography, which will be issued shortly by Messrs. Gustav Schmidt, of Berlin, under the title "Die Autochrom-Photographie des Verwandten Dreifarbenraster-Verfahren." ("The Autochrome and Allied Three-colour-screen Process").

## Correspondence.

*We do not undertake responsibility for the opinions expressed by our correspondents.*

*Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*

### PROFESSOR LIPPMANN'S STEREOSCOPIC PHOTOGRAPHS.

To the Editors.

Gentlemen,—Will you kindly allow me to answer a remark made in your issue of March 20? "Ex Cathedra" remarks that if the spectator views one of my relief-plates from a point where some material point of the landscape was located, that point alone is seen. It is and so it ought to be. The relief-plate shows the landscape just as it would be seen from the same viewing point, and this is the case even in this particular choice of a viewing point. Suppose that while looking at the real landscape the spectator brings his right eye gradually nearer to some material point, say a small projecting berry, he will see that berry, under an increasing angle, filling out larger and larger until it fills the field of view and shuts out the world. The net result of trying to peep at the landscape through a single berry is obvious. The same holds for the left eye. If that is illustrated by a leaflet, while its companion is hidden behind a berry, the berry can be seen at length but these two obtruding objects. The landscapes seen while looking at the relief plate will be the same. The interesting remark made in "Ex Cathedra" is, therefore, a projection to my theory of the properties of the relief-plate, but a confirmation of it in a very special case.—Believe me, Gentlemen, truly,  
G. LIPPMANN.

Faculté des Sciences de l'Université de Paris, Laboratoire des Recherches (Physique) à la Sorbonne, Paris, March 27, 1908.

### DEVELOPMENT TANKS.

To the Editors.

Gentlemen,—We note in your issue of the 20th a letter from Mr. I. Thompson with reference to markings in tank development, wherein he suggests a certain pattern of tank which would obviate trouble.

We have pleasure in informing you and him that we have for some time been engaged on experiments with a view to evolving a perfect tank, and we shall shortly be placing this on the market, so arranged that the developer may be circulated, and so the things complained of avoided.—Yours faithfully,  
BOOTS CASH CHEMISTS, LTD.

31, Farringdon Road, London, E.C., March 21, 1908.

### PROFESSIONAL PHOTOGRAPHY.

To the Editors.

Gentlemen,—Permit one who photographed the great British public before retouching of the negative was ever dreamed of just a

little say in this matter. I believe the first examples of retouching of the negative saw daylight at an exhibition of the Photographic Society of Great Britain, some forty or so years ago, or was it during the exhibition of life-size heads taken direct for the Robert Crawshaw Prize of £50 (in which the writer took part)? These examples were sent by the Chevalier Lafosse, of Manchester, and so puzzled the judges that they took the prints out of the frames to sponge them to find out whether they were worked-up prints or not. There is much temptation to enter into the wordy warfare *re* the criticism of Mr. F. C. Tilney, of the recent Exhibition of Professional Photography. I refrain from joining "the nest of hornets," but surely that definition is a mere figure of speech on Mr. Tilney's part. I come at once to the question: Why do we retouch? The exigencies of the principle of making pictures by light and chemical action compels it. For example, say, you have a lady sitter with a perfect complexion of health, clear and pearly. Her cheeks glow with the ruddy colour of perfect health. There you have the germ of the necessity for retouching, because that rosy glow of health will be rendered on the negative as a more or less dark patch. The lead pencil comes to our aid and restores the balance and makes the monotone of the cheeks, forehead, and throat harmonious and equal. This principle can be applied throughout the whole gamut of light and shade, of which a photographic picture is built. And now to quote Mr. Tilney as follows:—"If all is satisfactory before exposure is made it is madness to make graphic alterations of the resulting image."

But all is not satisfactory. The lady's complexion should be of a uniform marble whiteness, or the deathly pallor of illness to suit the chromatic capabilities of the photographic emulsion.—Yours faithfully,  
W. BARRY.

The Studios, 7 and 8, Park Street, Hull.

### MR. PONTING'S PHOTOGRAPHS OF THE ORIENT.

To the Editors.

Gentlemen,—May I correct a little error in Mr. Tilney's review of my photographs in your issue of the 20th inst.?

He speaks of the Great Wall of China as "seen to be low enough to allow a native to lean over."

I would point out that the photograph is made from the top of the wall, which is at this point about twenty-five feet high and fifteen feet wide. The outer side of the old structure is embrasured, and high enough above the footway on the wall to screen the troops who might be defending it.

On the inner side there is merely a low parapet for the safety of those on top, and it is over this the native referred to is leaning.

Mr. Tilney's remark, however, although in error with regard to this particular picture, is by no means anomalous, as in the Lias Si mountains—the first range over which the ancient fortification runs after starting on its 2,000 miles and more of meandering—just north of Shan-hai-Kwan on the Gulf of Pechili, I found it low enough on top of some of the most inaccessible peaks to allow me easily to vault over.

The view of the wall shown was made where it crosses the Nankow Pass, about fifty miles north of Peking, and this result was obtained only after spending three days and nights in a poor Chinese country inn, waiting for the haze to pass away.

As Mr. Tilney appears to be uncertain as to whether the title of No. 5, "O Tsuné San," is the lady's name, let me disperse all shadow of doubt in the matter by saying that it is, and that the interpretation thereof into English is "Honourable Miss Constancy." "O" is the honorific prefix always given to ladies' names in Japan, which usually are of flowers or virtues, though sometimes of fruits, birds, trees, or physical features of the land.

San means either Mr., Mrs., or Miss, but the honorific is only used for ladies. (San also means mountain.)

As O Tsuné San is a very well-known little lady indeed to almost every visitor to Miyanoshta, for she is the prosperous proprietor of a fine curio and picture shop, and as I know of at least three people who have been to see these pictures who know her personally, I would point out that the lady in No. 21, displaying her wealth of magnificent black hair, is not O Tsuné, but O Matsu San (Honourable Miss Pine Tree), a friend of the former, and equally charming.

The use of the "O" in a possible vocative sense, however, in the case of either of these dainty maids, may well describe me, or anyone

else's, feeling, for never have I had more gentle, courteous, obliging, and altogether delightful models.

I thank Mr. Tilney for his compliment to my portrait of her, but no photographer or painter could ever hope to portray the real charm of O Tsuné San or any other Japanese lady, any more than he could show the real beauty of Fuji San.—Yours very truly,

H. G. PONTING.

### THE PORTRAIT POSTCARD.

To the Editors.

Gentlemen,—I have read with interest the letter of "Postcard" in your last issue, and, like him, have suffered much by this pernicious innovation.

It is very well for some people to say "go in for it strong and make money," but when one is settled in a little town of about 3,000, which at fair prices would just provide enough business to make a comfortable living, what would the nett amount be if we did postcards ad lib. at 2s. 6d. per dozen? It would simply make death welcome at any moment.

My attitude towards this thing is as follows:—When a customer comes in for postcards I spend considerable time in explaining to him (or her) that although popular, postcards are by no manner of means the high class of work which he (or she) would like, and that they are hastily produced in cheap material, and that I don't care a hang whether they fade next week or not.

This generally makes them think it is better to spend a little more and have work that I guarantee.

If they will have postcards my price is 3s. 6d. per dozen, and I will not do them for less and give a proof. I spend very little time in retouching, and never exhibit a postcard in my showcase.

As it is, my receipts have dropped 25 per cent. during the last three or four years, although the amount of work has increased.

What with landscape postcards as well, I have to work several hours a day more than I used to—for less money in the aggregate.

I smiled when reading those letters in the JOURNAL some weeks ago, by the gentleman who wanted photography placed on similar pedestals to medicine and law. Did he properly consider the matter? Did he consider how the country is overrun by postcard fiends and enlargement vampires, many of whom could scarcely spell correctly the names of the goods they hawk, whose only hope or care is to cut the price down to the last farthing—offering to do postcards in this town for 1s. 6d. per dozen, or 1s. the half dozen?

Is this the art-science to be ennobled? I throw not. But is there any remedy? It is doubtful. Certainly not by competitive examinations and diplomas. My idea to improve matters would be to place photographers on the same basis as auctioneers and appraisers, and to make every person taking photographs for gain to pay £10 per annum for a licence, and this licence to be only valid in the town or district council area that it is taken out for.

This would benefit the revenue of the country, and at the same time clip the wings of those vultures who swarm the country to batten on the provender which properly belongs to another. Will the Professional Photographic Association stir?—Yours faithfully,

March 27, 1908. FAIR TRADE AND FAIR PRICES.

To the Editors.

Gentlemen,—I read with much interest the letter of "Postcard" last week, and was glad the subject of portrait postcards was being ventilated. It is a problem that has been perplexing me for some months, and I held back as long as possible before showing them, but at last a man opened against me with postcards at 2s. 6d. dozen. I was then obliged to enter into competition. I obtain 3s. 6d. dozen, but in a small town such as I live in there is not sufficient scope to do a large enough business to get any return. In consequence of postcards we get infinitely more work than formerly, and not half so much money, consequently one cannot reduce the staff.

Some of my clients have a dozen postcards, others bring them back to be mounted; well, we ask 6d. each, and use a 10 x 8 mount, then the finished picture has every appearance of panel cabinets at 18s. dozen. In many cases we cannot get 6d. for mounting.

This style of portraiture is come, and is going to stop, and what are we as photographers going to do? We have to use a half-plate, retouch the negative, and print twelve copies for 3s. 6d. I do not submit proofs, but in no case do I turn out the cards unless they are

good. I shall await with interest the result of this correspondence and remain, yours, etc.,

PROFESSIONAL.

To the Editors.

Gentlemen,—Referring to "Postcard's" letter, it seems to me the only way in which a photographer in good position who undertakes portrait postcards can meet the difficult question of price is to fix a charge for making the negative. It is all very well to print photo-postcards of views from stock negatives at 2s. per dozen, but to include the making a negative (no doubt retouching and proofs, and second sitting if not approved, would be required) in a charge of 2s. 6d. per dozen for postcard portraits is an absurd killing of the portrait trade.—Yours truly,

A COUNTRY PHOTOGRAPHER.

March 30, 1908.

### FOGGING OF PLATES IN THE DARK.

To the Editors.

Gentlemen,—I still hear of photographic plates being spoiled especially in long expeditions, by being placed in proximity or contact with bodies which act in the dark on the photographic film. Low exposure and high temperature increases this action to a great extent. Among substances commonly used in photographic apparatus which have this property of acting on a photographic film, are wood, aluminium, straw-board, leather in its prepared state, and almost all varnishes. On the other hand, copper, ebonite, vulcanised fibre, paraffin wax, Bristol board, gum arabic, secotine, lampblack of good quality, do not act on a plate. Brass acts slightly, but it varies with its composition. The action of the aluminium is easily and effectually stopped by painting it over with a very dilute solution of platinum chloride. The action of wood is prevented at least to a very considerable extent by soaking it in melted paraffin, and removing the excess by a hot iron.

W. J. RUSSELL.

Davy-Faraday Laboratory, Royal Institution.

March 26, 1908.

### THE "TWO-EYED" LENS.

To the Editors.

Gentlemen,—As you condemn in such a free way this method of producing stereoscopic pairs, I wonder if you have seen some of the results. Enclosed are two, the first of a microscope and accessories; this was taken with a Zeiss "Unar" lens, that does in itself distort, and this result certainly shows no distortion whatever. I do not know what the "conditions" are that you mention as being necessary to produce a stereoscopic pair, but I judge by the result. This microscope group forms an easily combining, strong stereoscopic pair. I hope you will see your way to publish this, point out its defects, if you can find any. The other subject is from a microscopic slide, and is of mallow pollen, magnified about x 1,000. Is this defective? Where? Did you ever see two better stereoscopic pairs?

At the London and provincial demonstration I did show a distorted image, of some coins, done so intentionally, but as I explained that was produced by a totally different method.

As for the diffusion screen, that must be your own invention, mine. I put a perforated screen with fifty holes in it, in front of the lens, and showed that by that means we got on the screen different images of the one subject at the same time.

I said nothing about diffusion.

If these are not truly stereoscopic pairs, I shall be glad to know what are, and why these may not be.

If anyone specially interested in these things would care to see the original photographs and others in a stereoscope, I shall be pleased to show them at any time, 5 to 6 p.m. being most convenient, at my office.

A. E. SMITH.

8, Farringdon Avenue, London, E.C.4.

March 23, 1908.

[Our note did not condemn our correspondent's work; it simply pointed out that strange and unjustifiable conclusions had been drawn from it by others. Old experiments, such as the production of stereographs with eccentrically stopped lenses, are always interesting, and often well worth working through again. As to the specimens, it is next to impossible to test the truth of a stereoscopic pair by inspection in the stereoscope; the only way to be quite sure they are correct is to make and mount them on correct principles. If



stop was situated in the plane of the iris, the camera result is probably correct, but if the stops were in front of the lens the result is certain to be more or less out of drawing, seeing that photographic lenses are not corrected for distortion for such a position of stop. The extent of the error will vary with different lenses, and the amount of displacement from the proper position. In some it may give obviously wrong perspective, in others simply an appearance of exaggerated relief. We always find a lens with Water-stops most convenient for experiments such as these. Our correspondent's results are excellent photographs, but as stereographs show a suspiciously strong relief. Unfortunately they are made in a way that naturally exaggerates relief, the greater part of a subject standing out in front of the mount. No stereographs look quite natural when trimmed in this way, which is a well-known method of introducing an appearance of relief into a combination of two similar photographs. If the prints are trimmed by near instead of distant ones, this defect will disappear, and one can judge better whether the result is true or not. It is necessary to remember that strong relief is nearly always untrue. As to the subject, stereomicrographs may be described as combinations of elevations, therefore the effect differs from that of the combination of the two perfect perspectives, obtainable in the camera, and is quite natural nor truly stereoscopic. The eccentric stops are equally capable of giving as good results as any other method. Our correspondent's specimen is very much affected by the wrong trimming, and we would also point out that in the stereoscope the images are very markedly ellipsoidal, and are all situated with their long axis parallel. Our correspondent, as the photographer, can judge for himself as to whether this effect is correct or not. With regard to diffusion effect, this was suggested by one of his comments. We think it necessary, however, to point out that the multiplicity of images produced by a multiple stop depends entirely on the stop being out of focus. In fact, it is a good test for true focus, and we have frequently used during many years.—Eds.,

# “SYNOLOIDS,” LIMITED.

To the Editors.

Gentlemen,—As a result of the advertisement and the article which appeared in the previous issue of your paper, we have been inundated with inquiries, notwithstanding the fact that you mentioned in the head of the article that we should not be ready for a few days. We shall be greatly obliged if you will publish to your readers this explanation, with our assurance that every effort is being made to expedite the manufacture of our paper and developer, and that we are in a position to make deliveries within the next few days.—Yours faithfully,  
“SYNOLOIDS,” LIMITED.  
Trancechurch Street, London, E.C.

PHOTOGRAPHIC CONVENTION.—The writer who under the thin “Pilgrim” is now contributing to the American photographic papers has some interesting comments in the current issue of “The Photographer.” He says: “Of course, America is the original of the British Convention, the late Mr. J. Traill Taylor, who in this country in 1885, having seized upon the idea and taken it across the Atlantic, to crystallise it at Derby, England, in 1886, was the first British Convention was held. Of that Convention I have many pleasant and interesting experiences, not the least of which was that I had the honour of serving as president during the years 1900-1901. Only the other day I received from Mr. F. A. T. the hon. secretary of the Convention, a valuable souvenir of his presidency. This was the official badge I wore on assuming the office, and which I passed on to my successor, Sir William Herschel, the great astronomer Herschel, who presided in 1902. The Convention meetings make very agreeable reunions, being attended by both amateurs and professionals, and there is no better way of spending a short vacation in some old cathedral town amidst other and equally interesting historical surroundings than to do in an English summer. The every-day interests of a professional worker do not, however, figure on the programme as much as to do in the New York State and other conventions, and I think the last regard that I think the English professional photographer should take a leaf out of his American confrère's book.”

## Answers to Correspondents.

- \* All matters intended for the text portion of this JOURNAL, including queries, must be addressed to “THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C.” Inattention to this ensures delay.
- \* Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.
- \* Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., 24, Wellington Street, Strand, London, W.C.
- \* For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.

### PHOTOGRAPHS REGISTERED:—

W. Hampton, 195½, Argyle Street, Glasgow. Photograph of a Fine Example of a Bursting Wave in the Storm at Largs, February 22, 1908.  
Davis, Clements & Co., Frederic Street, Luton, Beds. Photograph of a Placed Group of Thirty-three Hats.  
G. F. Watson, Park Green Studio, Macclesfield, Cheshire. Photograph of Jas. Kershaw, Esq., of Macclesfield.  
H. Hilton, 8, George Street, Brighton. Photograph of the Brighton United Twins.

ACID SULPHITE, ETC.—(1) In the article in the current issue re enlarged negatives direct no strength is given for the bisulphite of soda solution in the bath for removing the chromium salts. Is this the “bisulphite lye” of Lumière? If so, I think I have read elsewhere that it can be practically substituted by a sulphite of soda solution, and, if so, it seems strange, as in the formula in question there is also some sulphite of soda. I would not ask the question only “bisulphite lye” is not readily obtainable, and I would like to make it up myself if I can get the constituents. (2) I have a half-plate enlarger with a lens by Clements. It is fitted with Waterhouse diaphragm stops, and I find that no matter which stop is used I cannot get a clear disc. It is all right with full aperture, but as I use a Nernst lamp I want to cut the light down for thin negatives. The disc has violet and orange markings, particularly at the edges, when the stops are in. Shall be obliged if you can explain it.—F. C. (Bray).

(1) The sulphite has not the same effect as the bi-sulphite. You can obtain the latter from the Lumière Co., 89, Great Russell Street, London, W.C., or from F. C. Clarkson, Colchester. (2) If you cannot get good disc with small stops by readjusting the light it is clear that the aperture is too small to pass all the light. Very often it is impossible to get a clear disc if the lens is too small. You had better use full aperture and give short exposure with shutter, or else use slower bromide paper.

FACTORIES ACT.—I recently had the inspector of factory and workshops to see me, and amongst other questions he asked me what was the early closing day. I informed him we had no early closing day, as we only worked from 9 a.m. to 6 p.m., with one hour off for lunch (making forty-eight hours per week). 1. He says that I must let all women and young people under eighteen years of age, finish one specified day a week at four o'clock. Am I compelled to do this? 2. If so, does my receptionist come under this? (She is over twenty years of age). 3. Does a photographer come under the Factory and Workshop Act?—JUSTICE.

1. Yes; certainly you are. 2. The age makes no difference with females. If she takes no part in the working, such as mounting, spotting, and the like, but merely attends to the customers and correspondence, we imagine she would be classed as a shop hand, in which case the Factories Act would not apply to her. 3. Most decidedly he does. If you refer to our issue of September 13 of last year you will see an article on the Factory Act and photographers, which is very explanatory.

W. C. TIERNEY.—We advise you to write, mentioning this answer, to M. E. Husson, 207, Avenue de la Reine, Brussels.

HARRISON AND EVANS.—The address is 283, Regent Street, W.

PHOTOGRAPHIC PUZZLE.—Would you kindly give me your opinion of the enclosed postcard? You will perceive through the man's legs the letters are quite transparent; also on the shoulder you will see the letter G is to be seen quite distinct. For any information

respecting this photographic puzzle I shall feel greatly obliged. The photograph was taken in the afternoon of one day last week about 4.30, dull afternoon.—F. MALTHOUSE.

It is quite evident that the man moved during the exposure. The letters were recorded while he was moving, and his own figure was recorded while he stood still for a few moments. The effect is common in long exposures.

**BLINDS FOR STUDIO.**—Please give information regarding suitable curtains or blinds generally used in studios in order to get control in lighting. I would like a semi-transparent material which would stand well without fading. Where can I obtain some, and what price should I pay for a good quality material, and oblige?—J. E. R.

No very definite advice can be given, as the aspect of the studio is not mentioned. However, if it has a southern aspect darker curtains will be required than if it has a northern one. If the latter, buff or light blue would be good. If the former, a more or less dark green would be preferable. Suitable material can be had from any upholsterer. If you have the top blinds, as shown in the sketch, we should advise far less "sag" than is shown in it. In the issue of the JOURNAL, August 30 last, there is an article on the subject, with an illustration showing an arrangement of roof blinds, which is far better than as shown in your sketch.

**DEVELOPER—LENS QUERY.**—1. Will you please give me the best developer you know of for portraits taken by electric light, the resulting negatives to be used solely for bromide printing? 2. Also please tell me a simple method of finding the focus and working aperture of a portrait lens.—M. I.

1. The developer that is used for portraits taken by daylight will do equally well for those exposed by electric light. You cannot do better than follow the formula given for the plates you employ. Metol yields delicate negatives, which are suitable for bromide printing; you might give that a trial. Several formulæ are given on pp. 788-9 of the "Almanac." 2. Focus the image of an object, say a cabinet picture, the same size on the focussing screen. Then remove the lens from the camera and measure the distance from the object to the focussing screen. One-fourth of this distance is the focus of the lens. Then measure the aperture of the fixed diaphragm into the focus of the lens, and that will give you the  $f$  value. This method is not strictly accurate, but it is simple and accurate enough for all practical purposes.

**LENS QUERIES.**—Will you kindly, through the "British Journal," advise me which would be the best lens for 12" by 10 groups in studio 21 by 15, quickest, at a moderate price? Also a lens for cabinet and c.d.v. portraits?—NOVICE.

The studio is very short for professional work, more especially for taking groups in, if they are composed of many persons. You will require a lens that will include a large field in proportion to its focal length, such as one or other of the anastigmatic types of 12in. or 13in. focus. If you want the quickest lens of this class you will not get it at a very moderate price. Better get price-lists of the different makers. For full-length cabinet pictures 'n so short a studio you require a lens of about 9in. focus. Such a lens will do very well for three-quarter and bust portraits (c.d.v. size), but for full-lengths you will require one of still shorter focus.

**DIOPTRES.**—1. Combined bath or acetate and subsequent fixing. 2 and 3. We refer you to the article in the "B.J." for September 14, 1906, p. 725. See also the "Almanac," 1907, p. 775.

**REMOVING STAINS.**—Photographer's assistant would be greatly obliged if Editor can advise best method of removing stains developing pyro-ammonia? Hands much stained, therefore look bad in business. Have tried pumice.—T.

Rubbing with a few crystals of ammonium persulphate will often prove effective, but lemon juice is a slower and better remedy. You should keep your hands soft with some emollient, such as Hazeline, and they would not then stain so readily.

**E. R. BULLOCK.**—The best book we can refer you to is Duchochois's "Photographic Reproduction Processes," or Von Hübl's "Die Platinotypie." The latter is in German.

**RUSTON.**—Messrs. Agnew, 39B, Old Bond Street, London, W.; Messrs. Sotheby, 9 to 13, Wellington Street, Strand, London, W.C.; Messrs. Christie, Manson, and Co., 8, King Street, St. James, London, S.W.; Messrs. Goupil and Co., 25, Bedford Street, Strand, London, W.C.; Mr. Franz Hanfstaengl, 16, Pall

Mall East, London, S.W.; the Berlin Photographic Company, 133, New Bond Street, London, W.

**S. H. C.**—1 and 2. In both cases optical flats are used if specially ordered. A seven or ten times screen, with a panchromatic glass will be sufficient for paintings, and the lighter filter for landscape work. The make you name is excellent. 4. There are three of the screens; the third should be used for painting the first and second for landscapes. 5. Optical flats are preferable, as they do not impair the definition of the lens, and, if in front of the lens, require no adjustment for focus. Glass which is not perfectly flat may upset the definition.

**J. VAN DER RIGK.**—(1) Felix Schoeller, Burg. Greteesch, Osnabrück, Germany. (2) White shellac, 300 gms.; gum elemi, 30 gms.; Canada balsam, 50 gms.; methylated spirit, 1,000 ccs.

**MARKINGS ON PRINTS.**—I should be pleased if you could explain the marks on enclosed card. I used lead combined bath, but did not know marks until print was dry. I am in the habit of keeping the bath and adding stock solution for each toning, adding my gold to the bath.—W. W.

The print looks as if bath was nearly exhausted. The tone generally is uneven. But possibly the centre part was in contact with another print, and so the toning action was hindered. You do say if this is a solitary specimen of failure or one of a batch. If the former we should disregard it as an accident.

**L. MATHEW.**—There has been no treatise of late in English on the recovery of residues. We do not understand your query as to Spitta's book, but the publishers, Messrs. Iliffe, of Tudor Street, E.C., can give you every particular.

**G. H. B. and Others.**—In our next.

**PRINTER.**—Apparently the blotting-paper is the cause. It would be this effect if, as is the case with the cheaper qualities, it contained traces of hypo.

**WILKINSON.**—There is no plate or emulsion that will do what you want. We can only refer you to the developer for direct reversal containing thiocarbamide. General Waterhouse worked out the process some years ago, but it has never come into practical use. His formula was:—

A. Eikonogen, 5 parts; soda sulphite, 10 parts; water, 100 parts.

B. Soda carbonate cryst., 4 parts; water, 100 parts. C. Thiocarbamide, 1 part; water, 1,000 parts. Use A, 1 part; C, 1 part; B, 2 parts; and to every 100 parts of this mixture add  $\frac{1}{2}$  to 1 of 10 per cent. potass bromide solution.

**EAGER.**—This is a question that can only be answered as the result of practical experiment, and we are afraid your only course is to test the matter.

**LENS QUERY.**—I am in want of an anastigmat lens. A dealer's secondhand photographic apparatus has one by —, working at  $f/6.8$ , at just the focus that would suit me, but on examination I noticed several small specks in the glass, almost like bubbles. On calling the dealer's attention to them he said that all these new lenses had them, more or less, but they were of no consequence. Is that so?—T. R. CONWAY.

Yes, what the dealer told you is quite correct. With some of the new glasses it is impossible to manufacture entirely free from air bubbles, but the latter are of no practical consequence. If the lens is otherwise perfect you will be quite safe in purchasing it.

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y for a trifle. (P. 278.)

## EX CATHEDRA.

### The Photographs of the Far East.

We would remind our readers that the exhibition of photographs of the Orient, by Mr. H. G. Ponting, now being held at the house of the "B.J." closes on Thursday next, April 16. In response to several requests from would-be visitors who find it impossible to reach Wellington Street during the hours the exhibition is open, we beg to announce that to-morrow, Saturday, April 11, the pictures will remain on view until 5 o'clock in the afternoon, which, it is hoped, will enable many who could not otherwise do so, to inspect this notable collection of photographic pictures.

\* \* \*

### The Horsley-Hinton Memorial Fund.

With many feelings of regret that such a course should be necessary, we open our columns this week to the announcement of a fund in memoriam of the late Horsley Hinton. Mr. Hinton, as the memorialists truly point out, gave liberally, even rashly, in response to appeals from friends and kinsfolk, and was often generous when he would have been just in holding his purse closed. However, we hope that the appeal which is now made will not fail in enlisting the sympathies of some of our readers.

\* \* \*

### The Society of Colour Photographers.

We would draw the attention of every reader actually practising any process of colour photography to the second annual exhibition of the Society of Colour Photography which takes place in June next. We give the official particulars in another column, but would further remind colour workers that no charge is made for wall space either for prints or transparencies, that no awards are given, and that all further particulars will be immediately supplied by the honorary secretary of the society, Mr. Henry J. Comley, of Surrey House, Stroud, Gloucestershire.

\* \* \*

### The Paris Photographic Salon.

The twelfth annual exhibition promoted by the Photo-Club de Paris, and known usually as the "Paris Photographic Salon," will be held in the Cercle Artistique et Littéraire, No. 7, Rue Volney, from May 15 to June 8. As in previous years, the aim of the exhibition is essentially artistic, and, as hitherto, there will be no charge for wall space, no medals, and no appeal from the decisions of the selecting committee appointed by the Photo-Club de Paris. Entry forms, obtainable from 44, Rue des Mathurins, Paris, must be returned to the Photo-Club at this address by April 15 at the latest. The prints themselves should be consigned to reach the same address by May 1.

### Colour in the Stereoscope.

Attention has several times been drawn to the fact that if we prepare two Autochromes of the same subject, reverse one only, and then make up the two similarly to a stereoscopic slide, examination of the combined image in the stereoscope shows a grey image only. The reversed and the non-reversed images are, of course, in complementary colours which neutralise each other when combined, but the question whether colours can be combined in the stereoscope in this way is one upon which there has been much difference of opinion. Du Tour experimented on the mental mixing of colours by binocular vision, and in his experiment as quoted by Wheatstone he attempted to produce green by combining blue and yellow, but failed. Wheatstone states that if blue is presented to one eye and red to the other no trace of violet is seen, nor do red and yellow combined in the same way produce orange. If, however, complementary colours neutralise each other as in the Autochrome experiment, then blue and yellow should produce green, and red and blue should produce, not violet, but purple. We have often repeated these experiments of Wheatstone, and the only conclusion we could arrive at was that he was quite wrong in his conclusions. The colours will combine in precisely the way that he says they do not. He states that we simply see the two colours, the one or the other alternately predominating either partially or wholly over the field, and that we never see the combination of the two. The effect that he describes is readily observed, but it only occurs when the union of the two images is imperfect. A little mental effort will combine the colours perfectly, but it is certainly rather remarkable that the result should apparently be subtractive and not additive. Blue and yellow make green, not grey; and red and green make a sage green, not a yellow. Possibly, however, these effects are only due to the colours being in wrong proportions, for additive results are the ones we should expect. Carefully adjusted colours are necessary to determine this point, but the important fact that the colours will combine is easily proved in spite of Wheatstone's statements.

\* \* \*

### The Playertype Process.

The death of Mr. J. Hort Player has reminded everyone of the Playertype process, but, though this process was only published for the first time in the "Photographic Journal" for November, 1904, its details have been forgotten by many photographers. From the practical point of view it could hardly be considered to be a process of importance, but, theoretically, it is interesting as an example of a method of copying that still requires explanation. Briefly, the process was as follows: A sheet of translucent paper coated with calcium sulphide was rendered luminous by an exposure of from ten to twenty seconds to daylight. The phosphorescent surface was then brought into contact with the positive print to be copied, the two being kept together by the pressure of a sheet of glass. It was next illuminated for from five to ten minutes by yellow light alone, such as that of a gas flame, the light being allowed to pass through the phosphorescent paper on to the original picture. After this the luminous sheet was removed from the print, pressed into contact with a sheet of rapid bromide paper, and then the two were heated to about 120 deg. F. for twenty to thirty minutes. The bromide paper was then developed and fixed in the usual way, and a bromide copy of the original resulted. As a rule the result obtained was not very sharp, for there seemed to be a spreading of the image; but precisely why and how the result was produced no one seemed quite able to determine. The process is still an interesting subject for experiment, and

possibly the principles involved may some day have more important application.

\* \* \*

**Sales of Daguerreotypes.** Daguerreotypes are very often looked upon as rare, much rarer than they really are, and the possessor of one or two daguerreotypes often thinks he holds a prize of great monetary value. A really good slide is certainly an object of great interest, and if cleaned it is often one of great beauty, for there is no other photographic process which gives such a realistic effect in the stereoscope. The slides may, therefore, be truly described as valuable, though, unfortunately, when their value is translated into cash in the sale room the owner is often disappointed. Only last week a set of nine dozen daguerreotype stereoscopic slides were sold at Mr. Stevens' auction rooms at the bargain price of twenty-five shillings, which was out at a very small fraction over 2½d. each. A good many were excellent specimens, and some very good examples of coloured slides were in the set, so that the purchaser may be considered to have made a very good bargain. Coloured daguerreotypes have a peculiar interest, for the best specimens the colouring is so delicate and skilfully applied that the result is something of a mystery to modern photographers. A very fine example of a coloured slide was shown at the R.P.S. last week by a member who had recently rescued it from a dust heap! In spite of their small cash value, we think daguerreotypes are well worth collecting and preserving, especially when they are in the form of stereoscope slides. Unfortunately the daguerreotype is generally associated with an insipid portrait of some unknown individual. Many of these are no more interesting than the old-time collodion positive glass, but the stereo slides very often represent interesting subjects and, moreover, give a quite unique effect in the stereoscope.

\* \* \*

### Daylight Saving.

The sudden demise of the Daylight Saving Bill recently introduced into the House of Commons has been greeted with grief by an esteemed contemporary, apparently because it would have afforded opportunities for the exposure of a greater number of photographic plates than can be consumed with the usual allowance of daylight. The Bill in question was a very original one, as it projected putting all clocks forward twenty minutes between the hours of two and three on each of the first four Sundays in April, and putting them back again by the same amount and at the same times on each of the first four Sundays in September. If this were done, we should gain something like 200 hours of daylight, and should, of course, be able to dispense with a proportionate extra number of plates; but we do not think many would think all this worth the candles consumed when prowling around the house at two a.m. in the morning to meddle with the clocks.

\* \* \*

### Ladies' Photographic Associations.

The photographic exhibition held by the "Berliner Women's Club," in Berlin, at present, is a pretty idea, capable of being extended further, and should prove a great success if it introduced into other towns. It is entirely a ladies' exhibition, since there is not a single example of work of the sterner sex shown on the walls. As becomes a ladies' exhibition, the majority of the exhibits are flower studies, pictures of children, and portraits. There are also some very good costume studies, especially of quaint dresses worn by peasants in some of the out-of-the-way districts of Germany. Interiors and decorative work such as appeals particularly to women are not wanted.



works of professional lady workers and amateurs are exhibited side by side, and bear striking testimony to the enthusiasm and knowledge which German ladies are applying to the art. The exhibition is open to the public, and success with which it has met more than justifies the confidence of the promoters.

## RECENT CHANGES IN THE ARTISTIC COPYRIGHT LAW OF GERMANY.

There seems to be some misunderstanding in this country concerning the recent changes which have been introduced into the German artistic copyright law, and many of those who have dealings with German publishers and clearing houses in that country are still doubtful if their interests are fully protected. We can assure them that they are as well protected in Germany as elsewhere. Fortunately for photographers and others interested in art objects, the old fiasco, which passed by the name of a law but was a law only in name, has been abolished after much agitation. The clause, "On an article of manufacture," which enabled anyone to reproduce a photograph often as he wished, despite the fact that it had previously been copyrighted, if he could only convince the authorities that it was reproduced on an "article of manufacture," has been entirely removed. It was behind this clause that postcard manufacturers sheltered themselves, without in any way infringing the law, flooded the market with millions of picture postcards of copyrighted photographs. This naturally gave rise to much bitterness, since it afforded neither artists nor photographers security in obtaining what was their just right, and, further, a continual source of loss to them. In this respect art was on the side of photography, since they had a common end in view. The pressure brought to bear on the authorities ultimately convinced them of the absurdity of a law which left one class of the community absolutely at the mercy of the other, and on January 9, 1907, the new law was passed and at once came into force. There has been a great outcry against it from the manufacturers of postcards, who, in consequence of the removal of the clause which enabled them to infringe any copyright with impunity, have lost what was their richest harvest. There is, however, no possibility of any alterations being made in the law as it stands at present. For the benefit of our readers having connections with Germany, we select a few of the principal points in the new law.

According to the new German artistic copyright law, any photograph is copyright, and this copyright

lasts for a period of ten years. No formalities, such as registration, or in any other way giving notice to the authorities, are necessary. It is advisable, as a means of avoiding possible complications, to print the name, address, and date of the appearance of the photograph, but the new law does not demand this as necessary, and clearly states that even without such information or precaution a photograph still enjoys the right of copyright, and for the period of ten years. In the event of anyone copying such a photograph, legal proceedings can at once be instituted against him. Should the offender be a postcard manufacturer he can be legally compelled to at once withdraw all cards or copies of the photographs prepared by him from sale. Damages can be claimed, and the amount of these latter is based on the loss suffered by the holder of the copyright on the sale of the original through its having been produced as a postcard; also upon the value of the original photograph.

The copyright of a photograph belongs to that person, or persons, to whose order it has been made. This clause may possibly give rise to some cause for dispute, but, as we understand the reading of the clause, it is applied in Germany exactly in the same way that it is applied with us. That is to say, if the photographer makes the photograph to the order of another party he has no right to produce any copies of the photograph, except by the order of that party or by his permission. Any breach of this clause is punishable. But if the photographer invites the party to sit to him, or can otherwise prove that he has not made the photograph to the order of another person, or by order, then the copyright is his alone, to do with it as he pleases.

In most points the law is practically the same as our own, and need not be gone into here. The principal point is, as we have already made clear, that photographs and art productions are, under the new law, protected in Germany, and the cost of prosecuting anyone breaking this law in Germany practically amounts to nothing when the prosecutor has a case against the defender. Since Germany is included in the Berne Convention, the same protection is given equally to all countries within the union, and, in accordance with the provisions of the Berne Convention, all that is necessary to secure copyright in Germany or other foreign country is that the legal formalities of the country in which the photographer resides (*i.e.*, "the country of origin") should be observed. We need only add that the ten years' copyright limit is reckoned from the year of publication, by publication being meant the giving out or making public of the photograph.

## THE HINTON MEMORIAL FUND.

WIDESPREAD desire has been expressed that there should be public recognition of the invaluable services rendered by late Alfred Horsley Hinton to the cause of photography. It appears to be a very practical way of showing such recognition. Though Mr. Hinton had been in an important position some years, he was entirely a self-made man, inheriting no property. Further, he responded liberally (perhaps even unjustly) to many family and other calls upon his purse. As a result of this—to our painful surprise—we find that the widow quite inadequately provided for, and in proposing to inaugurate a fund for her benefit we feel sure of the hearty support and cooperation of many readers of "The British Journal of Photography" and others interested in Mr. Hinton's work. The undersigned have formed themselves into a committee for

this purpose, and trust that this appeal may meet with a liberal response. Messrs. Hazell, Watson and Viney, Ltd., proprietors of "The Amateur Photographer," have most generously headed the list with an amount of 200 guineas. Subscriptions—no matter how small—will be gladly welcomed, and should be forwarded to Mr. Reginald Craigie, Hon. Treasurer, Horsley Hinton Memorial Fund, 52, Long Acre, London.

A. J. ANDERSON.	ALEX. KEIGHLEY.
J. CRAIG ANNAN.	F. C. LAMBERT.
A. H. BLAKE.	ALFRED MASKELL.
GEORGE E. BROWN.	F. J. MORTIMER.
WILL CADBY.	J. C. S. MUMMERY.
REGINALD CRAIGIE.	H. SNOWDEN WARD.
GEORGE DAVISON.	HENRY TRUEMAN WOOD.

## THE DONISTHORPE PROCESS OF PRINTING WITHOUT LIGHT.

SINCE the appearance of the note on this printing method in the "B.J." of March 27 I have been able to put the process to some practical tests, and as the results will probably be useful to others trying it for the first time, I give my experiences in a fairly complete form. Described briefly, the process is as follows:—A negative is treated for five minutes with a toning solution containing vanadium, the result being a strongly-coloured negative image. At first it is a very blue green, but after washing for about five to ten minutes it is a brilliant green approaching emerald in colour, and at this stage it will be found that the negative image is in strong intaglio. After five minutes' immersion in a dye solution the plate is rinsed and a piece of gelatinized paper that has been soaked in water for a few minutes is squeegeed on to the film. In another five minutes or so this paper is stripped off, and a positive image in the colour of the dye is found to be impressed upon the gelatine surface. Success depends on two important factors: the condition of the toning solution and the quality of the negative. My first experiment completely failed through ignorance of the right conditions, so it is rather important to bear them carefully in mind.

First we can consider the toning solution. This is made up by mixing equal parts of two stock solutions supplied by the patentees, and it is imperative that both stock bottles should be kept quite in the dark. The toning operation may be carried out in the light, but the solution should only be mixed immediately before use and the stock bottles should then immediately be replaced in either a box or dark cupboard. Again, the mixed solution should not be used for more than two plates. It will tone quite a number of plates, but a sufficient hardening effect is not produced after the first two. If used for more than two, then the third plate will not be likely to print well, while the fourth will give nothing but a uselessly flat result. I am inclined to think that the solution works a little longer when used by artificial light than it does when daylight is employed, but this point is uncertain. In any case, I never found it safe to treat more than two plates with the same solution. The toning solution should remain quite clear during use. If it precipitates it is useless, and this effect will occur readily if the stock bottles have been exposed for any time to daylight. If the solution keep clean the first two plates can be relied on to work well, provided they are the right kind of negatives, and the quality of the negative is the next point to consider.

### The Negative.

A negative of a somewhat peculiar type is required for the process. The patentees describe it as a thin clear negative, with whites as clear as in a bromide print. The "whites," of course, are the deep shadows, and my tests show that these should be as nearly as possible of the "clear glass" variety, while the high-lights must only be of medium density. A very little veil or fog in the shadows is detrimental, and the amount we ordinarily expect in the usual negative made on a fast plate is fatal to the result. My most successful negatives were all modern slow plates, the best of all being on transparency plates. Messrs. Donisthorpe specially recommend metol, or amidol, as the developers that give the best results; but, as a matter of fact, I have not found the developer to be a factor of very much importance. The non-staining pyro soda developer, described in the "B.J." last year, proved very suitable, and fairly good results were also obtained with hydroquinone. This developer gives the right kind of shadow detail readily, but its tendency to produce very dense lights is rather against it for this particular process. Rodinal, 1 in 20, with two grains of bromide per ounce, works very well if the exposure is about right, and in my opinion more depends on the exposure

than on the developer. A "correct" exposure and short development is no doubt the thing to aim at, and in the case of a subject with great contrast a very light filter-screen to cut down the lights might be of advantage. Clean-working backed plates are, of course, necessary.

### Dyeing the Plate.

There is not much to be said about the dyeing, with the exception that some negatives require a longer immersion than others. A little veil in shadows or a little too much density in the light will prolong the first dyeing very greatly. When one print has been made, two or three minutes in the dye before making the next print is quite sufficient, as a rule. It is stated that the negative is sufficiently dyed when it looks like a positive against the light. This is a fairly good test, but I would add that the deepest shadows should be very dark indeed. Unsuitable negatives lead to all kinds of trouble in the dyeing, the high-lights are not dense enough they will absorb so much dye as to give a very flat result. If too dense the lighter tones will not take up any dye at all, and the result will be deficient in these tones. If the shadows are fogged or veiled, full depth of dye will not be taken up by them until the light have absorbed too much, and here again a flat result is produced. If the veil is at all dense the shadows will never take up enough dye.

All these experiments have been conducted on the usual type of photographic plate, fast and slow negative plates, and transparency plates; but Messrs. Donisthorpe promise a new special emulsion coated on black paper, and no doubt with an emulsion specially designed for the process the difficulty of securing negatives with clear shadows will disappear.

### The Printing Paper.

Among the gelatine papers used there was one specially prepared by the patentees which worked excellently, and gave an effect closely corresponding to glossy P.O.P. Fixed and wash P.O.P. papers work just as well, and matt varieties can be used in the same manner as the glossy. Carbon transfer and pigment papers I also tried with success. In fact, almost any kind of gelatinized paper seems to be serviceable provided it is not too rough. A rough paper could be squeegeed into contact with a glossy negative, and the result is therefore very spotty. The dyed image on the rough paper is, however, capable of very pleasing effects, and probably such paper can be used successfully with flexible paper negatives.

### Drying the Prints.

The inventors lay stress on the importance of drying the prints quickly. If the wet print is hung up to dry the dye tends to spread slightly, and so to give slightly blurred outlines. I found the best remedy was to blot the print immediately on removing it from the negative. Messrs. Donisthorpe advise dipping the prints into spirit before blotting, but this led to trouble in my case. It seems that the dye used is a mixture of several, including red and blue. The red appears to be rather readily soluble in the alcohol bath, and whenever I used such a bath a distinct bluish tint appeared in the half-tones. The result was an unpleasant double-tone effect that I avoided altogether by omitting the spirit bath.

The following is a brief epitome of the working instructions given by the inventors, very slightly modified in accordance with my experiences:—

Slightly under-develop the negative, stopping development while the whites still show quite clear.

Fix and wash very thoroughly, making sure that all hypodermic is eliminated, and dry the negative before proceeding further.



for five minutes in the toning and hardening solution, wash for ten minutes in cold water, wiping the surface of plate with cotton-wool to remove any sediment left by the g solution.

t in the dye-bath for from five to about ten minutes, or the negative, on being examined against white light, shows long positive image in the colour of the dye upon a green ed. The time for the first dyeing varies with the negative he dye used, and also with the temperature of the solutions. times half an hour's dyeing may be required.

use the dyed negative in cold water, wiping the surface with n-wool. This takes about a minute.

e gelatine paper should be soaked in water for about three tes or less in the case of a negative that has already had s made from it, while a longer soaking is desirable if the ive has not previously been used. The paper should there- be put to soak soon enough to have it ready by the time the negative is washed.

ing negative and paper into contact, and squeegee the paper the former. This should be done as quickly as possible

before the dye has time to "run" on the negative, and great care must be taken to avoid any slip of the paper when it is laid down on the negative. If any slip occurs a new piece of paper must be applied, and the negative must be again rinsed.

After a period varying from five to fifteen minutes the paper can be stripped from the negative and immediately pressed between blotting-papers. It is then put aside to dry thoroughly.

For some reason not understood the first pull from the negative often sticks to it and tears, but the bits of paper adhering can then easily be rubbed off. As the first print is almost always too flat this does not matter much, and subsequent prints have no tendency to stick.

When a print has been taken the negative is redyed for from two or three minutes, and rinsed before the next print is made.

The time of contact in printing varies with the negative and the dye, and the amount of dye the former will hold. In my own experiments I found ten minutes the average time, but a negative of exactly the right kind requires only about five minutes.

C. WELBORNE PIPER.

## THE MODERN NOTE IN THE DESIGN AND FITTING OF PHOTOGRAPHIC PREMISES.

### III.

Under this title we continue, with the following article, a series of chapters by Mr. Drinkwater Butt, F.R.P.S., on the principles which should guide the photographer in the external design and decoration of his place of business, and in the arrangement and appropriate equipment of its various apartments. Photography, being essentially an "artistic" business, taste and style need to be more in evidence than is necessary in businesses which are frankly and wholly commercial in their character. Therefore, while it is not possible to prescribe any plan which can be followed in particular cases, general rules can be laid down in such a way that a photographer can take advantage of them in giving his establishment, both inside and in, an air of distinction, which is bound to carry weight with his townspeople, and must turn out to his commercial advantage. Of course, a fortune may easily be squandered on such adornment of the studio, but in these articles Mr. Butt confine himself to such schemes as a photographer in a moderate way of business need not consider beyond his means. Moreover, the articles will be of assistance in pointing out how particular materials may be used, even on the smallest scale, in adapting or improving existing premises. The notes will conveniently be divided into four sections:—

Shop-front and Show-case.

The Reception-Room.

The Studio.

Planning complete Premises.

The last chapter will consist of a description of as complete a set of photographic premises as can be imagined—an establishment, in fact, which but few living photographers would feel justified in putting up. Yet the scheme in its various parts can be commended to the study of even the small photographer, on account of its detailing arrangements, which can be abstracted in pieces from their surroundings and utilised with advantage in businesses which are anything but magnificent in size.—Eps. "B. J."]

in importance to his shop window or show case, the reception-room of the photographer forms his principal means of testing and attracting his clients; and it is, therefore, here he should use his best efforts to make a really artistic display of his work. The late H. P. Robinson, who combined in a high degree the qualities of both the artist and the business man, once remarked that "the battle of the business is fought in the shop"; and of equal truth also is the proverb that "he who takes the eye takes all"; so that too much attention cannot be paid to this department. In considering the matter, it may be at once remarked that the two great faults to be found in many reception rooms are in their being often too much like a workshop on the one hand, or, on the other, of their being overcrowded with specimens, elaborate furniture, and bric-à-brac, until they rather resemble fancy fairs than suitable premises for the proper and dignified display of serious artistic

#### The Well Ordered Reception Room—Work Out of Sight.

In regard to the former fault, the obvious remedy is, of course, to let as little as possible of any of the work of produc-

tion be done in them; certainly nothing in the way of retouching, mounting, or framing, all of which cause a certain amount of dust, litter, and disorder, which are the last things which should find a place in any well appointed reception room. The utmost that may be allowed is possibly a little spotting, but even that is better done elsewhere, as it is certainly not desirable that clients should see work that is intended either for themselves or other customers in an unfinished condition, so easy is it for the technically uninformed to be prejudiced against it when in that condition. There is another proverb which says that "children and fools should not see anything until it is finished," and, although I hope that none of my readers may number many of the latter among their clientèle, I object strongly in the presentation to the gaze of actual or possible sitters of anything that is not absolutely finished and complete. This principle I have always extended to the showing of proofs, the practice of sending out unfinished ones leading, I believe, to many re-sittings which would otherwise have been avoided. Besides, if the photographer has not sufficient respect for his own work to desire to show it to the very best possible advantage, he can hardly expect his clients to have a great deal more.

Therefore, I say, keep finishing operations as much as possible out of the reception room, or, if any have, perforce, to be admitted, do them behind a screen or partition, which may, in itself, be made an artistic addition to the furnishing of the apartment.

#### Show a Little—But the Best—of Everything.

With regard to the second fault above mentioned, of the reception room looking like a bazaar or fancy fair, one must reiterate the advice given in the first article of this series respecting overcrowded shop windows and show cases, and plead for greater simplicity, which will bring, at least, some measure of dignity in its train. The specimens shown should, of course, include all the styles and processes produced, but only the very best examples of each should be shown, and each be placed in its most effective and appropriate position. Adherence to this principle will aid the artistic effect, give a high-class and dignified appearance to the whole, and enable the spectator to give undivided and undistracted attention to the work presented for his consideration, with the probable result of increasing his appreciation of it.

#### Furnishing the Reception Room.

The furniture of the reception room should be sufficient, but not excessive, in quantity, and in harmony with whatever style of decoration may be chosen for the whole. It need not consist of much more than a few comfortable seats and lounges for the use of clients, a roll-top desk or *escritoire* for the receptionist, and a few small tables for the display of specimens in books, small frames, etc. Whatever is used, however, should be good of its kind, and, if simple, yet artistic in design. Many admirable modern reproductions of the work of the best periods are to be obtained, at very moderate prices, from such firms as Warings, of Oxford Street; while very well designed and original furniture is a special feature of the business of Messrs. Liberty and Co., of Regent Street.

#### The Lighting of the Reception Room.

To proceed to the general requirements of a good reception room, we may note that one essential is that it should be well lighted, both by day and by night, during the latter preferably by electricity. As suggested in the previous article, the upper parts of many tall shop windows, which are useless for the external display of specimens, may often be utilised for the partial daylight illumination of the reception room beyond; and light may also generally be obtained from the back, when, as is generally the case with town premises, none is available from the sides. Best of all is, of course, top light, when it can be got, and this is a point which should be kept in mind when premises are being chosen for photographic purposes. Another good arrangement, and one which may be made to give very artistic effects, is, when there are three or more windows on one side of the apartment, to divide the space between them, by partitions at right angles to the wall, into bays, by which means a considerable amount of hanging space, lighted alternately from the left and right, is obtained. In these bays all kinds of work can be very conveniently displayed, while specimens of each kind of process are kept together, and yet isolated from possibly discordant neighbours. The quantity and quality of the lighting should also be taken into consideration when the general decorative effect is being decided upon, it being always to be remembered that a room not too well lighted should be decorated in a lighter key than one which has a better natural illumination; in which latter both the woodwork and the wall coverings may be darker in tint and tone.

#### A Caution to Amateur Decorators.

In the decoration of a reception room of an important character, it is generally best to keep to one style or period throughout, the Adams version of Renaissance work being, for instance, often very suitable, especially in one of the Georgian houses, of

which so many still remain in London and many other places, which style the ornament is sparing in quality, generally in relief, and the whole quiet and refined in taste, besides being admirably designed for execution in wood and plaster, the principal materials for indoor work. What, for want of a better name, is generally known as the "art nouveau" style is also not at all unfitted for reception room decoration, provided always (as the lawyers say) that its exuberances and extravagances be avoided, and its points of directness and simplicity seized upon. In the hands of such men as Mr. C. A. F. Voysey, Mr. George Walton, or Mr. M. H. Baillie Scott, who recognise the principle that fitness is always an element of beauty, and work simply, with many straight lines and a few flowing curves, and avoid over elaboration of ornament, this style reaches its goal of beauty through simplicity; and the would-be decorator cannot do better than study the works of these artists, or reproductions of them, which often appear, particularly, in the pages of "The Studio," a periodical which should be in the hands of all interested in the applied and decorative arts, and which is also specially deserving of support by photographers because it is, more than most artistic magazines, disposed to admit photography to its proper place among the latter.

#### Wall Coverings—Durable and Pleasing.

This, however, is a digression, and we return to the consideration of the permanent decorative features of the reception room. Among the most important of these are the wall coverings, they form the dominant note of colour, and also the background upon which the specimens of work will be mainly displayed. The most suitable materials for use are paper and canvas. The latter, in the better varieties, such as the "Tynecastle" and the "Holliston" makes, are naturally more expensive, but some of the cheaper forms of the material are also very suitable and serviceable. Paper may be also had printed with canvas effects, or the ingrain varieties may be used, both of which give a soft broken effect almost similar to that of canvas, which forms a very suitable background for photographic work. The "Tynecastle" canvases mentioned above, which are made by the Tynecastle Co., of Rathbone Place, begin at 2½d. per square foot, while the "Holliston" wall cloths, supplied by A. L. Gibson and Co., of Tower Street, Upper St. Martin's Lane, are about double that price. The latter are finer in texture than the former, and will be found to make an admirable lining for show cases, even where their price is prohibitive for the covering of large wall spaces. The cheaper kinds of canvases down to those used by paperhangers, and coarse linens and holland, may be obtained at all ordinary decorators' and stores. If a patterned canvas or paper is used, the design should be generally small, and of the "all-over" type, otherwise it will almost inevitably assert itself and destroy the quietness and restfulness which should characterise all backgrounds. In colour, delicate browns and greys are generally the most suitable, the brown of the wide continuous paper used for placing under carpets being often very suitable as a background for both monochrome and colour work. The writer recently used it in conjunction with a dach of coarse canvas for the studio of a well-known landscape painter with very considerable success. This material has the merit of cheapness as well as durability, and is easily renewed if in any way damaged. For newly plastered walls, on which it is not desirable to at once hang paper or canvas, the washable distemper known as "Duresco" is often a very useful and decorative covering, being made in very many soft, artistic and broken tints that are very suitable for our purpose. It is made by Messrs. J. B. Orr and Co., Charlton, S.E., and can be obtained from all painters and decorators. Very dull greens or grey blues may be also sometimes used for wall coverings, especially where there is a preponderance of pure black and white work, such as platinotype, to be hung, but for the generally used varieties of carbon and silver printing the greys and browns before alluded



It will be generally found the safer tints to use. For any small objects to be devoted entirely to the display of coloured work in frames, Indian or Pompeian reds are good background colours, though they are unsuited for the setting off of photographic work generally.

### What Not to Do with Woodwork.

Woodwork, speaking generally, may, if painted, be white, or brown, as may best harmonise with the wall covering, or, if natural woods are used, pitch pine, teak, mahogany, or oak are all suitable, but in any case none of them should be too highly polished. For oak a plain wax finish is what is required. The man of any taste at all will, of course, actively avoid the abominations of graining, marbling, *et cetera* omne! Small show-cases for miniatures and such like may be occasionally ebonised or black, but much black wood (apart, of course, from frames, which are very often best at colour) would produce a heavy and funereal effect.

### Formula for a Cheap, Good-looking Floor.

I have already spoken of floor coverings in the way of carpeting, in conjunction with these, polished wood block floors of pitch pine, teak, or oak, or thin parquetry of the same may be very effectively used in cases where expense is not so much

an object as artistic effect; or, where cost has to be considered, may be replaced by inlaid linoleum, or cork carpet, which, in parquet patterns, forms a very good and durable floor covering, especially where there is much traffic. Indeed, in a reception room which is directly entered from the street, I think that an entire covering of linoleum is preferable to carpet, as it is more easily kept clean and free from dirt, especially if when first laid, and at intervals afterwards, it is well treated to a good coat of beeswax and turpentine as ordinarily used for polishing stained floors. The latter (i.e., stain) is also a good substitute for parquet when there is already a good well-laid floor to operate on, but the common procedure of staining and then varnishing or using one of the so-called varnish stains is not to be recommended, as the surface so obtained will soon chip, scratch, and look shabby, and never give so satisfactory an appearance as a stain made of common Brunswick black diluted with turpentine to the desired brown tint, followed by applications of the above-mentioned beeswax and turps, or the wax polish which may be obtained in paste form ready for use. This gives a clean, non-chipping, unscratchable and, in time, well-polished floor better than any other method with which I am acquainted, and I have used it times out of number with entirely satisfactory results.

DRINKWATER BUTT, F.R.P.S.

(To be continued.)

## CONVERSATIONS ON COPYRIGHT.

### II.

**COPYRIGHT.**—The sole and exclusive right of copying, engraving, reproducing, and multiplying any photograph and the five thereof by any means and of any size. (Extract from the Copyright (Works of Art) Act, 1862). This definition puts in a nutshell the rights which accrue to the photographer under certain conditions. These latter were explained in the first conversation on "The Ownership of Copyright," which appeared

in our last two issues. The present series of questions considers the formalities which must be complied with in firmly securing the benefits of the Act to the owner of the copyright. It will be followed by others, in which assignment of copyright, infringement of copyright, and the intricacies of copyright in foreign countries will be dealt with. The articles aim at conveying the facts of copyright in simple form.

### THE REGISTRATION OF COPYRIGHT.

What is the registration of the copyright in a photograph? It consists in depositing at Stationers' Hall, London, a copy of the photograph, together with certain particulars.

Is it necessary to register a copyright in order to establish ownership thereon?

This is not necessary, but it is necessary to register before action can be instituted for unlawful reproduction or other infringement of a photograph. The Act says:—"No proprietor of any copyright shall be entitled to the benefit of the Act until registration, and no action shall be sustainable or any remedy recoverable in respect of anything done before registration."

Must registration be done immediately the photograph is taken?

No; it may be done at any time, but action can only be taken in respect to offences committed after registration. In other words, registration, in the eyes of the law, is a formal act, on the part of the photographer or other person, to the effect of securing the right.

What is the cost of registration?

The fee is one shilling, and the form in which entries are made costs one penny.

Must the form and photograph be deposited personally at Stationers' Hall?

They may be handed in or sent by post, preferably the latter, as any irregularity in the entries will be at once pointed out by the Stationers' Hall officials.

What particulars are to be given when registering?

A.: Usually only those asked for in columns 1, 4, and 5, viz.:—

1. Description of work.
4. Name and place of abode of proprietor of photograph.
5. Name and place of abode of author of work.

The entries in columns 2 and 3 are required only when transferring a copyright.

Q.: You might give me an instance of the way in which the form is filled up.

A.: Well, in column 1 should be a description—to the length of, say, a dozen words—of the photograph. For example, photograph from half-plate negative of Miss Isabel Jay as "Miss Hook," outdoor costume, full face. The photograph tallying to the description should be pasted to the back of the form.

Q.: In filling in column 4, name and "place of abode" of the proprietor of the copyright are asked for. Does the latter mean the private or business address of the owner?

A.: It has been held that the place of business is to all intents and purposes the "place of abode."

Q.: In giving the proprietor's name there are usually the alternatives of the actual name of the owner and the name under which he carries on his business. Which should be inserted?

A.: If the firm is a limited company its title (e.g., The Art Studio, Ltd.) should be inserted as the name of the proprietor, but if the business is a private one, the actual name of the proprietor should be given, followed by that under which the business is conducted; thus, F. L. Dovey, trading as The Vandyke Studios, 19, High Street, Margate.

Q.: As regards column 5—the author of the work—this, I take it, need not be the same as the proprietor entered in column 4?

A.: I think it has been made pretty clear that the name and address of the actual operator (not necessarily the proprietor) are required. The proprietor may be his own operator, but if a paid operator took the photograph his name and residential address must be given. If the proprietor of a studio has himself taken the photograph he will, of course, enter his own name and address in the space (column 5) pertaining to "author."

Q.: I should like to ask whether exact particulars are necessary as regards the author. When registering a copyright some time after a photograph has been taken it is sometimes difficult to be certain precisely who took the sitter.

A.: It is most essential that the particulars be correctly given. If, in a case in court, it can be shown that they have not been correctly given, the photographer may thereby lose an otherwise sustainable action.

Q.: I am sometimes told that my photographs are not protected from infringement (although I have registered them) because the word copyright, or the registered number, does not appear on them.

A.: That is not so. There is no need, under British copyright law, to mark registered photographs in either of these ways. In some countries it is necessary, but not here.

Q.: I have also been told it is a legal offence to mark as "copyright" photographs which have not been registered.

A.: It certainly is, though I know of no case in which action has been taken in respect to it.

Q.: How can I discover that a copyright has been registered at Stationers' Hall?

A.: Only by search in the indexes which are kept there. The fee for permission to do this is one shilling. The indexes are those of the names of the proprietors of the copyrights, not the authors thereof.

Q.: Is it not possible to obtain a statement from the Stationers' Hall authorities as to whether a copyright has been registered or not?

A.: No; the Copyright Office does not undertake to search. The only course for any one who cannot do it himself is to set a friend to look up the entries. The arrangement of the registers is such that it is easy to find if a given name appears. The hall is open for this purpose daily from ten to four, except Saturdays, when the hours are ten to two.

Q.: On registering a photograph, what certificate of the fact do I obtain?

A.: A receipt for the fee of one shilling is given, but this is not accepted in a court of law as legal evidence of the registration. For this, the certified copy of the registration is necessary. The authorities at Stationers' Hall supply it for 5s.

Q.: In registering a photograph I am sometimes in doubt as to the print to be deposited. Frequently, when the original print from a negative has not been satisfactory, I have worked

up the negative or an enlargement, or I have issued two-colour or three-colour reproductions of a print. My point is: Should I register the straight print from the negative or the final result? It may happen that I have several different varieties of the latter and I am not certain whether one registration covers all.

A.: In practically every case registration of one or other will protect both. For this reason, the Act defines infringement of a photograph more widely than copying it facsimile. A copy which is a "colourable imitation"—that is, unmistakably copy by hand, photography, or other process, of the copyright

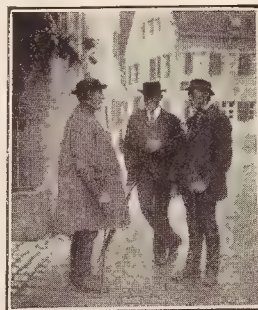


Fig. 1.  
The original photograph.

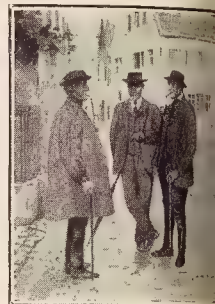


Fig. 2.  
A palpably "colourable imitation."

photograph—is an infringement. A copy may vary considerably in general appearance, but if it present even only one or two features which prove it to have been copied from the original, it is an infringement just as though it were identical in every respect. Therefore, as a rule, registration of a straight bromide or P.O.P. print from the negative is sufficient.

Q.: If a number of photographs are copied together, say, on a smaller scale, and all registered together, will the one registration avail for each individual photograph?

A.: It will not. Only one subject may be entered on the form. Such a composite photograph would protect the particular arrangement, nothing more.

Q.: Suppose, however, that I photograph a group of portraits in a picture gallery, or a group of persons. Does the one registration protect me as regards reproduction of part of the photograph, say, one picture or a single face in the group?

A.: We can discuss such a question better under "infringement" in a later conversation, but I think there is no doubt that registration of an original photograph applies to every part of that photograph. It certainly does so in the case of the group, which must be regarded as an inseparable subject. The pictures might be considered differently, and I should say it would be wiser to register each copy separately, enlarging, if necessary, that portion of the negative.

**SULPHITE OF SODA.**—The writer of the note in the "Pharmaceutical Journal" which was recently published and commented upon takes exception in the current issue of our chemical contemporary to some extraordinary advice on testing sulphite given in an amateur photographic journal. The test is that of adding a solution of barium chloride to a solution of the suspected sulphite, and, applied as directed by the author, will show the purest sulphite conceivable to be the contaminated with sulphate. The "Pharmacist-Photographer" now writes:—"As a matter of fact, crystalline sodium sulphite, even in commercial quantities, is unlikely to contain any appreciable quantity of sulphate. The Pharmacopœia standard (97.28 per cent. pure sulphite) is, however, too high, and is seldom equalled even by recrystallised specimens. Messrs. Evans, Lescher, and Webb, in their recently published analytical notes for 1907,

report that commercial samples have been found to vary from 92 per cent. to 96 per cent., and this agrees with my own experience." The 'Agfa' handbook for 1908, after exhorting photographers to buy sulphite of the best makers, goes on to state that the salt of the manufacture has an average of 90 per cent. pure sulphite, a moderate claim in face of the foregoing facts.

"Since writing my former note on this subject, I have made further examination of the anhydrous sulphite there referred to, and find that the lower percentage of pure sulphite indicated is due to the presence of sulphate, and to remaining water of crystallisation. Probably this is unavoidable, as the sulphate may be formed in the process of drying, but as the authority quoted above remarks, 'a small quantity seems to be harmless in a developing solution.'"



# THE ENSIGN WORKS OF HOUGHTONS LIMITED.

EAR or two ago a former editor of this JOURNAL put the question, "photography played out?" and, in some thousands of words, answered it with an emphatic negative. An even more pertinent query is, "Is British photography played out?" and again the answer is an emphatic and unqualified negative, in proof whereof a host of facts and figures might be cited, but none perhaps more

ment, and we can imagine no more healthy corrective of despondency as to the solidity of the photographic industry than a visit to the spot which Messrs. Houghtons have peopled with a thousand busy hands, each aided by the best of modern machinery. A factory such as this is a new experience for Walthamstow, which has hitherto



One of the shops of the Ensign factory before the machinery was installed.

convincing in their evidence than the very concrete fact of the manufacture of photographic articles which Messrs. Houghtons Ltd. within the past two years have begun on the outer edge of the London East-End. Something more than fifty years ago the Houghtons were selling glass for collodion plates, since which time their business as merchants, wholesale and retail, of photographic articles has grown more and more rapidly, probably their anticipations of, say, twenty years ago—when amateur photography had become unmistakably a pastime for the



Metal turning and drilling shop.

been little more than a dormitory, where thousands of city hands come home to sleep, and it was no less an experience for us when we first had an opportunity of exploring its busy shops.

The Ensign factory is as fine an example as one could want to see of a commercial enterprise undertaken in a big, courageous way. In a business which calls machinery to its aid, the rule is "nothing venture nothing have." There is no comparison with the era of hand-manufacture when the money was spent on material and labour in proportion as the demand for an article increased. Your modern



Steel tools for stamping in the Ensign works.

man—did not picture a vast manufactory such as that at Walthamstow, employing all the resources of machinery in keeping pace with the orders of their city offices. If, indeed, such ideas of industrial expansion did float before the firm at that time they were very far put aside as the creatures of an exuberant fancy conjured into existence by a too sanguine view of the possibilities of photography. Yet the dream, if ever it took place, was but sober judgment.



Part of the wood-finishing shop.

factory cannot exist in this way. It must lay down expensive machinery for making a particular article, it must prepare tools, patterns and dies to the tune of hundreds of pounds before it is ready to put one article on the market. It must therefore do nothing until every detail of a new departure has been thought out, and the best form and construction of a new instrument decided upon. Thus it happens that the latest novelty in apparatus is very likely the final commercial form of a hand-made model which months before had been approved as embodying the manufacturer's designs, and thus the manufacturer, like the journalist, has to indulge in



"intelligent anticipation," and must constantly project himself months or years forwards if he would time the appearance of his apparatus with the fashion of the hour among photographers.

Such are the thoughts that slowly force themselves upon one as one makes a tour of a great works such as Messrs. Houghtons'. The first impression is that of incessant industry, of mechanical marvels in machinery, of the astute management which directs the passage of the separate parts of an instrument to a point of assemblage with the minimum labour and at the minimum cost. These palpable triumphs of the factory cannot be missed by the most non-technical person. But as one passes from foundry to machine shop, from the woodworkers to the fitters, and to the store-room of patterns and tools, one begins to appreciate the mind of this working body and to respect even more perhaps than the obvious perfection of organisation the commercial pluck which sets up a distinct commercial objective and spends money, brains and time in reaching it under the harassing commercial limitations. Get that idea into your head,



Building up dark slides.

and a tour through the big shops of the Ensign Works is trebled in interest. We see the different varieties of Sanderson cameras on their way from the unplanned board, which forms their bodies, to the assemblage of 150 working parts of wood and metal which constitute every one of these beautiful instruments. If we were better mechanics we could describe the feats of the lathes and cutters which fashion each one of these parts, but in doing so we might submerge the fact to which these operations are incidental—that is to say, the manufacturer's determination to produce, at the minimum price, an instrument which is as good for its purpose as can be made.

Seriously have the Houghtons' managers to consider how they can do their best for the user, for they have to spend a pretty penny, over and above the cost of stuff and labour, before the manufactured articles are ready for the dealer's customers. Yet, apart from this idea, which is gained only by moving from shop to shop, the details of the Ensign Works supply enough of interest to keep one loitering among its gangways for a week. The camera-user, and particularly he who desires to retain his instrument for many a long year, will view with satisfaction the large stacks of wood waiting under cover until thoroughly seasoned. The machine shop supplies a score of instances of the variety of Messrs. Houghtons' enterprises. Here a boy is collecting the metal ends of the roll-film spools as fast as they fall from a machine; there at a lathe, which dispenses with even unskilled labour once it has been set, screws of a rather complex pattern are turned out automatically; at other presses the tiny metal parts of the "Ticka" camera are produced by the gross and with the precision which this small apparatus requires. Equally in the wood-working shops the machines are as varied as the products which are required of them, and here, too, we see the result obtained with precision and almost lightning rapidity without the adjustment by that "clumsy tool," the human hand, as Mr. Shaw would say. When we have exhausted our superlatives in admiration of mechanical processes,

the bigness of the whole concern and of the output which it must represent make demands on our vocabulary. Messrs. Houghtons' something about 80 tons of brass used every year for camera parts that total millions. We believe it of the 600 machines in the factory. And it must be a satisfaction to the innumerable somebodies who purchase these cameras, enlargers, tripods, and other apparatus read of the supervision which in both earlier and later stages of manufacture maintains a high standard of workmanship. It will be understood what interest any one connected with photography cannot help finding in the Ensign Works. It is equally satisfactory to remember that the technical management of the works is in the hands of Messrs. Spratt Bros., Holmes Bros., and W. C. Jackson, all of many years' experience in the British photographic trade, and with Messrs. Houghtons, Ltd., to be congratulated on the prospect of their thoroughly British enterprise.

#### THIOMOLYBDATE TONING.

THE following new instructions have been issued by the makers of the "Cubrome" thiomolybdate toner, Messrs. H. Edmund and Mr. H. E. Smith, the inventor of the new method, has already communicated to our own and other journals the chief facts upon which the new toning process is based, and in a recent article the "B.J." Mr. C. Welborne Piper detailed some of the practical advantages of thiomolybdate over sulphide.

Care should be taken to tone for the full five minutes in the B solution, or the tone may be too dark a brown.

If, however, on drying the print is too dark, it may be modified again immersing in the bleacher for five minutes, washing out the bleacher (about five minutes in this case), and again immersing in the B solution (five drops or minims to the ounce) for five minutes after which wash twenty minutes as before.

A more simple method of producing warmer sepia tones if desired is to increase the amount of ammonia in the toning bath by adding from one to two drops of strong (.880) ammonia to each ounce of toning solution diluted ready for use. By this method a considerable range of rich brown tones may be obtained at will, suited for different subjects.

If after toning the whites do not clear readily from the light yellow stain, an immersion of from two to three minutes in dilute ammonia (3 per cent. strength) will be found to greatly hasten the elimination of any stain. Most varieties of bromide postcards and gaslight papers may well be treated with the ammonia clearing in this way, in order to shorten the final wash.

It will be seen that this toner possesses the following advantages over ordinary solutions for toning sepia by the sulphide process:

1. Bromide prints that are too flat in contrasts, and are not of good black tone to start with, which do not take good sepia tone by the ordinary sulphide process, will be found to take good tone with the thiomolybdate toner without difficulty.
2. The above remarks also apply to gaslight prints, while with this toner the tendency to yellowish tones with these papers will be found to be overcome.
3. It will be noticed that the odour of sulphuretted hydrogen which renders the ordinary sulphiding solutions objectionable is practically done away with in the Cubrome thiomolybdate toner in which few can detect the smell of anything but ammonia.
4. As this toning process slightly intensifies the print, the loss of crispness in a sulphided print (owing to the silver sulphide compound having less covering power than the original black silver) is overcome with the thiomolybdate toner; prints toned with it generally being noticeably more brilliant after toning, in spite of the image being turned from black to brown.

Finally, prints toned by this process may be considered fully permanent as prints toned sepia by the ordinary sulphide process since chemical facts that have been published show that the black silver image is by this process converted into the same sulphide compound of silver as in ordinary sulphide toning, while tests have shown that the addition to the image of a small portion of a sulphide of molybdenum by this process does not render the prints any more liable to change.

OWING to great demands on our space, the article on "Carbon Printing in the Tropics," by E. W. Foxlee, is unavoidably held over with several other articles and paragraphs.



# L.C.C. CLASSES IN WOMEN'S PHOTOGRAPHIC TRADES.

NEWLY ISSUED red-book of the London County Council gives the particulars of the classes inaugurated by the Council for women engaged in photographic trade work. The report is written by Miss Mannington, of the L.C.C. Trade School for Girls.

## CENSUS.

Between the years 1891 and 1901 the number of persons engaged in photography increased by 41.8 per cent. Amongst these the number of females increased by 56.4 per cent. In the latter year 51 females over the age of 10 years are recorded by the census employed in this industry.

## NUMBER VISITED.

During this inquiry 18 of the leading photographers in the profession were visited. Of this number one was an architectural photographer, one a photographer of pictures, four had factories (three in London, and one in the west-end and south-west districts of London, of whom seven were women employers.

## DESCRIPTION OF THE INDUSTRY.

By far the largest number of photographers specialise more or less in portraits; some include coloured platinotype and miniatures. The industry has made, and appears to be still making, rapid developments becoming highly specialised for various branches of science and art.

There are six firms in London who do only architectural photography, and the nature of the work somewhat precludes women from taking part in it. But in all the other styles of the work, it appears to be the general opinion that photography is essentially a women's trade, and well-trained women excel in all its skilled branches.

The various processes may be grouped as follows:—

- |   |                       |
|---|-----------------------|
| Operating.                              | 4. Printing.          |
| Developing, intensifying, and reducing. | 5. Fixing and toning. |
| Retouching.                             | 6. Spotting.          |

## 7. Cutting, mounting, and finishing.

Women of good appearance and manners are almost essential in selection-rooms, and they fill in their spare time with clerical work "spotting"—i.e., putting finishing touches to the prints with a brush. Sometimes printing is "put out" to be done.

Factory work consists of (1) developing, printing, and mounting of work of amateurs and some operators in the trade; (2) making slides and sensitised papers and packing the latter; (3) printing collotype, a process used for the reproduction of old manuscripts, microscopical slides, coins, etc.; (4) printing and packing picture cards; (5) colouring cheap photographs of views, etc.; (6) making negatives and sensitised papers.

## RELATION TO MEN'S WORK.

In factories women usually do the less skilled and the mechanical processes, while men do operating, printing, and the more difficult work.

In studios where a man is the proprietor he usually operates himself, while all the rest of the work may be given to either men or women, whichever he prefers to employ. Women generally do retouching, spotting, and mounting.

The number of women employers has largely increased during the last ten years; they usually prefer to employ women to do all the processes in their studios. There appears to be no obstacle in the way of women competing successfully with men in this industry.

## CONDITIONS AND METHODS OF TRAINING.

Portrait photographers frequently take apprentices or pupils, of whom inquiries were made, took two pupils who paid premiums varying from £10 to £50. They are usually taught all the processes, though some firms exclude operating and others exclude colouring. Sometimes girls are employed as "learners," receiving pocket money and paying no premium. They only learn one or two processes—i.e., those the most easily taught.

Objections are made by employers to spending time and materials in teaching girls the more skilled processes of developing, operating, printing, because of the uncertainty of their remaining long enough in the firm to be of use; on the other hand, the services of a well-trained woman are often retained during slack seasons on account of the difficulty of replacing her.

## WAGES, HOURS, AND SEASON.

Wages.—Wages, except for colouring and retouching, vary from 4s. to 45s. a week; printers' wages average 35s.; developers, 40s.;

spotters, 18s. to 20s. Cutters and mounters are the least well paid, their work being more mechanical, though not altogether so. Retouchers earn from £1 to £4, the average being about £2 10s. a week. Colour painting on prints in portrait studios is paid at the rate of 35s. to 80s. a week. Factory hands earn from 5s. to 16s., the average being probably about 10s. to 12s.

Hours.—The usual hours are from 9 a.m. to 6 p.m.; a few firms work from 9.30 to 6.

Season.—Photographic studios are generally slack in August, and more or less in September; the busiest time is six weeks before Christmas, and again in the spring. Sometimes there is a slackness again in January.

## PROSPECTS IN THE TRADE.

The prospects in this trade for a competent woman are good, for the following reasons:—

- (i.) All the processes are suited to her capabilities.
- (ii.) More women are entering the field as employers of women's labour.
- (iii.) The rate of payment is high in almost any branch in which she may wish to specialise.
- (iv.) No obstacles exist to prohibit her rising in her profession to a responsible position.
- (v.) It is a general opinion that there is a considerable demand for competent workers.

A girl likely to be successful should possess an artistic sense, good sight, delicacy of touch, precision, accuracy in detail and intelligence.

## DEARTH OF SKILLED WORKERS.

An almost unanimous opinion was expressed that there exists great difficulty in obtaining thoroughly skilful workers, and that the demand for them is increasing. On the other hand, there are too many of the inefficient and unintelligent class, and this is due to the absence of a satisfactory system of grounding and training girls.

## NEED FOR A TRADE SCHOOL.

This points to the need for a Trade School. Most firms are very unwilling to dismiss a good worker during slack seasons on account of the difficulty in procuring another later on in the season. Several employers consider there is a serious need of a practical system for training women in this industry. One large employer, on having the methods of Trade School training explained to him, said: "If you mean to train your girls in that way, when they leave, they will be snapped up at once." To quote another employer: "More women are employed in the trade every day, but they are in need of a more intelligent training."

The general opinion amongst the employers seen was that girls who possessed the necessary qualities and were well trained would have no difficulty whatever in obtaining work.

## SCHEME OF WORK.

The scheme of work suggested was that a thoroughly competent teacher should instruct the pupils in every process of photography for two years. Some chemistry might be added to this, not to train them for chemists, but that they should understand the properties and uses of the chemicals used in the various processes. Drawing should play a prominent part in their training, special attention being given to producing effects of light and shade, appreciation of line and proportion. It is important that a considerable proportion of the pupil's time should be spent in practical work in order to ensure precision and accuracy; but, on the other hand, it is necessary to develop the general intelligence of the pupil to obviate the danger of her work becoming purely mechanical. The success of the training would greatly depend on the advice given from time to time by a committee of experts, because the processes vary considerably in different firms and are often subject to change.

KENTMERE-IVORETTE £100 COMPETITION.—Messrs. Kentmere, Limited, announce a £100 competition for prints of technical excellence on their sensitised boards manufactured with P.O.P., gaslight, and bromide emulsion. The competition is open for a few weeks only, and the £100 will not be divided, but will be sent in to the technically best print. The Editor of "Focus" has consented to act as judge.

### THE SOCIETY OF COLOUR PHOTOGRAPHERS. SECOND ANNUAL EXHIBITION.

THE prospectus and entry form of the second annual exhibition of the Society of Colour Photographers has been issued by the Honorary Secretary of the Society, Mr. Henry J. Comley, and is obtainable from him at Surrey House, Stroud, Glos. The exhibition is to be held at the "little galleries" of THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, from June 1 to 27. The following are the conditions of exhibition:—

1. Exhibits are invited from all workers in all processes of colour reproduction, and are not to be confined to members of the Society.
2. All exhibits must be produced in colours, pictures coloured by hand will not be admitted.
3. Exhibits may consist of (a). Prints. (b). Transparencies. (c). Objects of Interest, such as series of constituent negatives, with transparencies or prints from same by any process.
4. All prints must be mounted, framing is not essential, but will be preferred. Passe-partout framing is advised, with rings affixed for hanging.
5. The attached entry form must be properly filled in—special attention being given to the required particulars of the method of production and must be forwarded to the Hon. Sec., Surrey House, Stroud, Glos., before May 12, 1908.
6. No entry fees are charged, and no awards are offered.
7. All prints or frames must have a label pasted at the back, upon which must be clearly written the name of the exhibitor, full particulars of the method by which the print is made, and the address to which the exhibit is to be returned.
8. Transparencies must have the name and address of the exhibitor written on the back edges, with the title or subject on the front.
9. The Society reserve the right to reject any exhibit which may be considered unsuitable.
10. All exhibits must be sent carriage paid, addressed to Henry J. Comley, Hon. Sec. Society of Colour Photographers, 24, Wellington Street, Strand, London, W.C. and must be delivered not later than May 15, 1908.
11. At the close of the Exhibition exhibits will be returned to the address given on same, carriage forward; but if it is desired that they shall be returned by post, a fully stamped and addressed wrapper must be enclosed with entry form.
12. While every reasonable care will be taken of exhibits, the committee cannot hold themselves responsible for any loss or damage arising from any cause whatever.
13. The signing of the entry form will be taken as an acceptance of all the foregoing rules.

A catalogue will be forwarded to each exhibitor.

## Exhibitions.

### WEST SURREY PHOTOGRAPHIC SOCIETY.

The twentieth annual exhibition of the West Surrey Photographic Society was held at the Railway Hotel, Battersea Rise, S.W., April 1 to 4 inclusive. Some excellent work was to be seen, including a small but creditable collection of Autochromes. The judge, Mr. C. J. S. Mummery, President of the Royal Photographic Society, made the following awards:—Silver-gilt plaque for best picture in exhibition: "A Woodland Path," G. Herbert. Bronze plaques: "A View in the New Forest," A. H. Butterworth; "Down River," F. J. White; "Suburban Snowdrifts," A. Lockett; "La Senorita," Mrs. W. H. Goy; "Hans," B. Gilbert. Honourable mention: V. T. Serin (twice), A. Lockett, G. Herbert, Mrs. W. H. Goy, and R. H. Baskett. Lantern slides: Bronze plaque—"By Stream and Hill," A. H. Butterworth; honourable mention—W. H. Goy and C. Pretty (Autochromes).

### BOROUGH POLYTECHNIC PHOTOGRAPHIC.

On Friday last the thirteenth annual exhibition of this society was formally opened by A. H. Blake, Esq., M.A., who also acted as judge. The show is an unusually good one, some of the works rising to a standard high enough to admit them with honours to any show in London or the provinces. All the pictures are the work of members, and the only classification is that of members who have

not taken a previous award and members who have. Of the latter the picture winning the highest distinction is "When Evening Mists Arise," a print of much beauty, depicting silver birches and gaining a silver medal. In the same class bronze plaques have been awarded to the following five works:—"A Normandy Peasant Girl," by J. Bedding, which is a view of a quaint corner in a courtyard, where a girl, a little self-consciously, handles a bucket as she stands well-head; "To the Light Beyond," by E. R. Bull, a view which seems scarcely well fitted with a title, unless the "light beyond" meant to be that of a stained glass window, seen between two columns in a church, where a bright gleam of sunshine strikes the foreground; "The Criticism," by A. G. Buckham, which represents a master and pupil standing before a painted canvas, a work of nicely composed lines; "Apple Blossom," by Miss M. A. Smart, a sprig, well chosen for form and tastefully lit; and, finally, a charming landscape called, "A Rainy Day," by A. J. Sturgess who errs if at all, upon the side of reticence in effect and elaboration in detail.

In the novices class the awards are two plaques and three certificates. Landscapes of much promise, by A. Challis and W. J. Cornock, and entitled respectively "River Mists" and "A Sussex Landscape," secure the plaques. The first is somewhat too dark key for the amount of definition shown, but it has excellent feeling; the other is creditably ambitious and good, except for a violent gradation in the sky. The certificates go to "Tacking," by T. Denny, a Thames piece, with a capital distance; "A Fair Prospect," by P. W. Gladman, a sunny, mountainous vista; and "Sunshine in the Woods," by W. F. Harrap, the secretary, whose official duties appear to have caused him to leave his bromide print too long in the bath.

The plaque in the lantern slide class fell to J. N. Spare, who showed also some excellent autochromes. There was a cheerful gathering to receive Mr. Blake's address.

### PHOTOGRAPHS BY THE LATE HORSLEY HINTON.

A memorial exhibition of photographs by the late A. Horsley Hinton was opened last Tuesday at the rooms of the Royal Photographic Society. Although only twenty-three pictures are shown, the impression is left upon the visitor that a mind peculiarly sensitive to the demands of landscape art had prompted the touches which lift these works above the level of ordinary photographic prints. It is scarcely one that is not excellently composed, and in one or two cases, where a general rule seems to be broken, there is evidence that a firm conviction and purpose had been responded to. Mr. Hinton had a way of making nature compose for him. In "May Flowers," for example, the blending of the foreground interest in composing lines with the middle-distance trees, argues a fine sense for these matters. "Reed Harvesting" on more ordinary lines is perfect in composition, and positively glazes with sunshine. Mr. Hinton's skies were sunny, and no one knew better than how to handle great masses of cumulus clouds to pictorial advantage. If he had a fault it was a tendency to flatness of effect. It is scarcely to be doubted that the highly romantic composition, called "Silent Glades," would have gained by strength among the pine stems. But he would probably have some good argument to advance in his choice. In "Recessional" there is more of this strength of colour and to our minds this work is, in this respect, one of the finest. "Over the Hills" shows the purest landscape feeling, dealing, as it does, with expansiveness, atmosphere, and light.

It is obvious in seeing these collected works, that the late editor was so successful in his journalistic career simply because he understood thoroughly what the amateur requires to be taught, and that that personal possession of the coveted knowledge which is above mere technicalities. A teacher and guide must be able to go further than the pupil can go himself with formulae and demonstrations to prime him. Those alone will not make pictures, though they may make photographs. Hinton could make pictures.

THE "RAJAR" CAMERA, offered monthly by Messrs. Rajar Limited of Moberley, Cheshire, for the best print on "Rajar" P.O.P., has been awarded to Mr. A. Holmes, 12, Kitchener Road, Selly Oak, Birmingham, this print having been judged the best during March. The paper on which the print was made was purchased from Messrs. Hurman, Limited, Victoria Square, Birmingham.



## Patent News.

*Process patents—applications and specifications—are treated in Photo Mechanical Notes."*

The following applications for patents have been received between March 23 and 28.

**EMATOGRAPHS.**—No. 6,874. Device for the mechanism of cinematograph cameras and projectors and the like, in which the film moves continually. William Thomas Coulson, 181, Maple Road, Henge, London.

**WATCH CAMERAS.**—No. 6,932. Improvements in watch cameras. Samuel Henry Crocker, 37, Chancery Lane, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

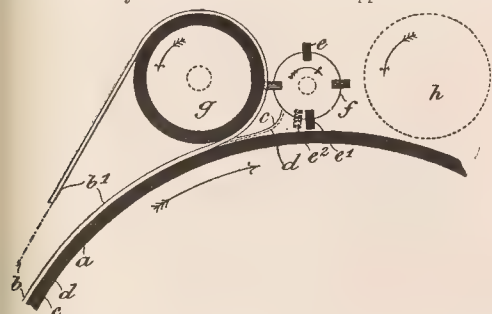
Specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

**VISIBLE PHOTOGRAPHS.**—No. 21,223, 1907. The invention consists of a card or sheet upon which is mounted a bleached photograph. One piece with the sheet is a second sheet charged with the darkening or reproducing compound in such manner that it may be folded over or made to cover that part of the first whereon the picture is formed. To reproduce the photograph all that is necessary is that the charged portion of the sheet shall be damped and folded over so that it is brought into contact with the surface whereon is the bleached photograph; the photograph will then be immediately reproduced. Reginald Williams, 30, Finchley Road, London, N.W.

**ROTARY PRINTERS.**—No. 19,408, 1907. The invention relates to an arrangement in photographic printing apparatus with rotary printing cylinder and apron.

The principal feature of the arrangement consists in placing the angle of delivery—that is to say, in front of the delivery roller or between the latter and the feed roller—a rotary shaft provided with blades which, while rotating, lift the printing material away from the printing cylinder and compel it to proceed along the delivery path.

*a* is the printing cylinder, *b* the apron, *c* the photographic paper, *d* and *d'* the original tracing. The roller or shaft *f* provided with blades *e* is placed in the angle of delivery, i.e., in the space immediately to the right of the delivery roller *g* and a little farther off the left of the feed-roller *h*, marked in dotted line. My means chain or belting or pinion wheel gearing from one of the rollers *g* or *h* or directly from the motor of the apparatus the shaft is



used to revolve relatively swiftly. The means of driving are shown in the drawing. The direction of rotation of the different parts are shown by arrows.

When during the rotation of the cylinder *a* the edge of the printing material is just in front of the roller *g*, the pressure exerted by the apron against the printing material will cease; the printing material will then either rise spontaneously a little from the printing cylinder, or continue adhering to the latter. In the latter case the blades *e* will, however, when in their lowest position, or having passed slightly beyond this—see positions *e*<sup>1</sup> and *e*<sup>2</sup>—meet the edges of the printing material and lift them from the printing cylinder. According to the degree of disinclination of the edges to leave the cylinder, they will be subjected to

one single or several beats in quick succession, whereby they will necessarily be forced away from the printing cylinder and rise. The edges of the printing material will then, in the same manner as when spontaneously leaving the cylinder, be carried into the position shown, in which the blades *e* when nearing their horizontal position will, without any difficulty, push the printing material tangentially on to the delivery roller. The blades *e* may be made of any suitable material, as, for instance, india-rubber, and may individually be composed of a row of separate pieces. In order to obviate the drawback of the pressure of the apron ceasing suddenly along a line of the printing cylinder *a*, the guide-roller may at both ends be provided with a belt *b*<sup>1</sup> that is thicker than the apron, so that this latter just opposite the guide roller will be out of touch with the printing cylinder. Both belts may be carried in the same path as the apron itself, i.e., over the various rollers and around the printing cylinder. Hans Viggo Siim, Blegdams Hospital, Blegdamsvejen, Copenhagen, Denmark.

## New Crude Dames.

**HYPOXON.**—No. 300,560. A chemical substance for use as an eliminator for photographic prints, plates, and like goods. William Bailey Rogers, 6, New Square, Cambridge, liquid cleanser manufacturer, February 18, 1908.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Pictorial Photography and the Reflex Camera.

"My experience has convinced me" (writes Dr. H. D'Arcy Power in "Camera Craft") "that the universal camera of the future will be a reflex. While I think that its greatest triumph will be in extending the field of pictorial work, it can easily be constructed to serve all purposes. For all-round work the Premograph is an excellent little instrument. It is very light, it is simple to use, it makes a lantern plate by direct printing, and gives good enlargements. It takes time-exposures, and the shutter works fast enough for moving objects and detective work. Its chief fault is the limitation of the lens, which is a single fixed-focus achromatic. This means that good light is a necessity. Personally, I had no difficulty in overcoming this defect. I bought a Bausch and Lomb, 6in., Rectographic lens, mounted it in a focussing tube, and thus am able to work at *f*/8, and at any distance. To this I have added a lens-hood with a slot in front, in which I can drop a colour-screen or a plus or minus lens. With the first I can focus objects quite close to the camera, such as flowers or living insects; by adding a one-diopter minus lens I can utilise the draw of the tube and get a little larger distant view on the plate. This little arrangement has usurped the place of my old favourite, and is now always with me. It meets more requirements than any other camera I can obtain, and while thus fulfilling the needs of an advanced worker, it is the simplest thing the beginner can use.

## New Books.

Kelly's Directory of Chemists and Druggists. Eleventh edition. London: Kelly's Directories, Ltd. Price 20s.

This comprehensive directory of the chemical trades makes its appearance in its eleventh edition in a size and fulness which is a remarkable comment upon the largeness of the interests which it embraces. The directory deals not only with chemical manufacturers large and small, but with pharmacists, druggists, and other retailers of chemical products. But its chief interest to our present readers is its inclusion of photographers and photographic dealers. The Royal Photographic Society may perhaps demur to being placed at the head of the list of photographers, as the context gives them almost the appearance of a trading body. The other sub-divisions of the photographic trade are photographic apparatus manufacturers, card and mount manufacturers, photographic dry-plate makers, chemical manufacturers, photographic engravers, enlargers, makers of photo-

graphic films, lens manufacturers, photographic paper makers and importers, and photo-postal wrapper manufacturers, a classification which is certainly capable of improvement, since, to take one example only, it gives two lists which are, or should be, almost identical—namely, those of dry-plate makers and paper makers. If by photographic engravers, process engravers are intended, it is a somewhat curious fact that there should be but one entry—namely, Garrett and Atkinson, Warwick Works, Ealing, while under photographic films we have only the single entry of Houghtons Ltd. Under photographic lens-makers will be found one or two names of firms who can hardly be accused of possessing an optical factory. The provincial list, however, of photographers is a valuable portion of the directory, and from making a few references to it we should judge it to be an accurate and comprehensive compilation. The list of photographic materials dealers is a lengthy and evidently representative one. It is when we come to Kelly's compilation of photographic manufactures that we find cause for criticism. For example, to refer again to the heading "photographic films," we have just cited the solitary firm of Houghtons Ltd. in the London section, and we find in that for England, Scotland and Wales the one entry of Wellington and Ward, Elstree, Herts. The list of photographic enlargers too might be considerably augmented. In the list of photographic lens manufacturers we find no mention of Aldis Bros., Birmingham. We realise, perhaps as well as anybody, the difficulties in the way of making a proper classified directory of the photographic trade, but we think we might expect fewer omissions than those we have discerned at a first glance in the new Kelly list. As regards photographers and photographic dealers, errors may be readily pardoned in view of the large proportion of such firms who are constantly changing their address, but the firms constituting the photographic trade may be said to be pretty well established, and therefore their omission from lists which could have been compiled with more accuracy by consulting any of the directories published in photographic annuals or periodicals can hardly be allowed to pass without some comment.

"Lehrbuch der Projektion." By Dr. R. Neuhauss. 2nd edition. (Halle: W. Knapp. Mk. 4.)

Dr Neuhauss' treatise on lantern projection, it is scarcely necessary to say, is not primarily a handbook on how to make and exhibit lantern-slides. It is a description of the principles of and instruments for the optical projection of transparent and opaque objects, and viewed from this point of view the second edition shows the signs of able revision. Dr. Neuhauss has a way with him in writing on technical subjects, and does not mind letting fall a caustic comment on a method with which he cannot agree. Thus he hopes that the advantage of the rotating-lath projection-screen of Mr. Efic Bruce is better understood in England than it is in Germany, and he recommends the people who cry for a half-coloured screen (in order to have justice done to their slides of eventide) to try the effect of lowering the light in the lantern. The book briefly discusses the optical principles of projection, and describes the essential parts of the apparatus. In the section on slide carriers some elaborate mechanical devices are represented. Most valuable, however, is that portion of the book devoted to three-colour projection by the Ives, Wood, Lippmann, and Joly processes, the projection of opaque objects (aphengoscopes, etc.), panoramic and stereoscopic projection, and microscopic and cinematographic work. The volume is illustrated throughout by a number of drawings, and is, for readers of German, a most useful addition to the handbooks on lantern work.

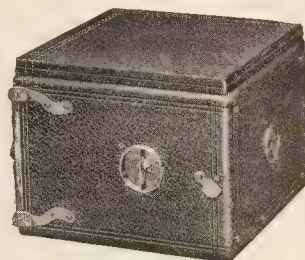
Röntgen-Photographie. By A. Parzer Muhlbacher. Berlin: Gustav Schmidt. Mk. 2.50.

A new edition of this handbook on X-ray photography reaches us from the publishers, and is found to contain, in addition to a brief historical review on the discovery of the X-rays, a fairly complete practical guide on the making of radiographs. The second chapter deals with the general principles of X-ray work, the third concerns itself with the electrical apparatus required, and we thus have the author's recommendations as to the most advisable photographic procedure. Later chapters deal with stereoscopic X-ray photography and with the use of the simplest apparatus for galvanic electrical work. The volume is very fully illustrated with drawings of apparatus and with reproductions of radiographs by the author. For those who read German the volume should be a useful manual.

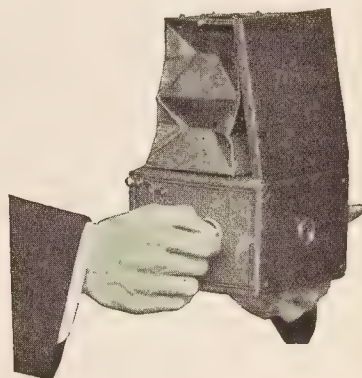
## New Apparatus, &c.

The "Premograph" Reflecting Camera. Made by Kodak, Ltd., 57 to 61, Clerkenwell Road, London, E.C.

That the Kodak Company have not been oblivious to the great and important advantages of the reflex type of camera has been abundantly shown by their active marketing of two instruments of this type, the "Graflex" and the "Premo," both of which were shown at the exhibition of reflex cameras held at "The British Journal of Photography" in June last year. The instrument which has now been submitted to us is not in any sense to be a competitor with the above more elaborate models of reflex, but serves to place in the hands of the amateur worker, and that at a most moderate price, part of the advantages which result from the use of a mirror. In other words, the "Premograph" is a quarter-plate camera in which a mirror is used to give a full-size image, and



although the camera is not provided with any focussing adjustment, the gain in certainty which the full size of image confers can hardly fail to be appreciated by the unskilled worker. The construction of the camera represents a reduction to the most elementary item further than which we can hardly imagine any camera of this type to go. The mirror is hinged at the upper part of the camera, and is set down by a winding key on the right hand of the body, or is allowed to spring up flush with the focussing screen by turning the same winding key in the reverse direction. Similarly, to the bottom of the camera there is hinged a corresponding



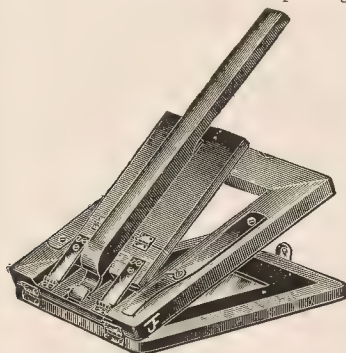
light metal plate provided with a velvet light-trap which forms with the mirror plate a shutter which can be used either for time or instantaneous exposures. For the former it is only necessary to set the small lever shown in the drawing at one end or the other of the metal plate, a turn of the winding key then commences the exposure and pressure upon the small knob concludes it. For instantaneous work the lever is placed centrally on the plate, and a turn of the winding key then gives an exposure which we should judge to be something like one-thirtieth of a second. The camera is provided with a hood of 5½ in. depth, which is self-erecting, and closes into a space of less than ¾ in. It is fitted with means for taking the Premo film-pack without adapter, and thus carries a supply of twelve quarter-plate exposures. At a price of two guineas the "Premograph" should find many adherents amongst amateur workers, who can fit it, if they choose, with a superior



as, or even with a lens in a focussing mount, which will greatly tend the usefulness of the instrument.

the "Rapide" Postcard Printing Frame. Sold by Jonathan Fallowfield, 146, Charing Cross Road, London, W.C.

In this new printing frame provision is made for both P.O.P. and emulsion (or gaslight) work. This is done by adding a detachable handle to the hinged back by which the back can be quickly pressed into contact with the negative. For P.O.P. printing there are the



l springs. The frame itself is made double, with a recessed under-iron, accommodating a half-plate negative and mask. The frame consists of very rapid work, and should prove a most useful help to the postcard printer, amateur or professional. The price is three guineas.

## New Materials, &c.

C.C. Print-out Paper. Made by Ilford, Ltd., Ilford, London, E. The reasons why C.C. paper is so rapidly replacing the various forms of gelatine-chloride are not difficult to find. The emulsion of the new class of papers is not affected to any appreciable extent by variations in the temperature of the wash waters or solutions; no water is therefore necessary in hot weather; there is no chance of the prints sticking to the dish or to one another, and, if necessary, the prints may be dried by heat.

The superiority of the delicate matt surface over the glossy or varnished varieties of gelatine P.O.P., is generally acknowledged, whilst the glossy varieties of C.C. are available for work requiring full brilliancy. The chief advantage of collodion paper lies, however, in the wide range of beautiful tones, which are generally admired by the photographer. The black tones, for instance, obtained with ease and certainty by toning in gold followed by platinum, have a particular quality of their own, unexcelled by any other process.

The increase in the number of fresh makes of C.C. on the market amply indicates the growing use of this class of paper by the professional, and it may therefore be regarded as inevitable that the Ilford Co., in pursuance of its policy to supply the photographer with the best variety of sensitive surface, should include collodion paper in its list of printing materials, and it is evident that the firm's long experience in the manufacture of gelatine P.O.P. has been no obstacle to the production of a first-rate paper of the collodion class. We are of the new product as we have found it, after a fairly extensive trial, and we are bound to say that we have never used a C.C. paper that toned more easily in the baths to a good colour without the need of toning, or one so free from the usual defects of C.C. emulsion in the shape of blisters or minute surface cracks in a horny or uneven surface. And as we write we receive a report from a professional friend whose long experience of C.C. paper suggested to us the sending to him of a portion of our supply of the Ilford material. His verdict might be expressed in the words we have just used, and we are it is scarcely necessary for us to do more than to refer our professional readers to the Ilford Co., who are prepared, we understand, to send samples to bona-fide professional workers.

"Ilford" P.O.P. Postcards. Sold by James Spicer and Sons, 60, Abchurch Lane, London, E.C. 4.

Under this title a new series of sensitised material is placed on the

market by Messrs. Spicer, by whom only wholesale orders are executed. The cards consist of a fine sensitive material, matt or glossy, to which further variety is given by the tinting of the raw stock on which the sensitive preparation is supported. The four stock colours at present obtainable are sea green, sky blue, cerise and canary, all of which are sufficiently vivid to be quite unmistakable. Indeed, it may be questioned whether Messrs. Spicer, with the great resources in paper which they possess, have made the best possible selection among the uncoated materials to which they might apply their sensitive preparation. What we take to be the "cerise" is a nice enough colour, not unduly pronounced, but the other three, in our judgment, are of somewhat too aggressive a colour to permit of full justice to the really excellent qualities of the photographic image. Certainly the effects are striking, but there is the trouble, we think, that subjects for which such strongly coloured grounds are suitable are comparatively rare. However, it will be readily conceded that the products are distinct, and quite possibly occasions may be found to make effective use of them. The cards sell at from 10d. to 1s. per packet, and tone readily in the combined bath.

Challenge Semi-Matt Postcards. Made by the Challenge Works, Macclesfield, Cheshire.

A sample of these postcards, submitted to us by the makers, has given us most satisfactory results, both as regards the brilliance and clearness of the image and the surface of the paper. The makers certainly claim no more than is right in laying stress on the beauty of surface which they offer in the prints. The firm offer to send twelve gaslight postcards post free for 6d., and will send special quotations to large purchasers.

## CATALOGUES AND TRADE NOTICES.

"FALLOWFIELD'S COURIER."—With the April issue of the Fallowfield trade journal a list of reductions and alterations in price is included. There is also a description of the new Rapide postcard printing frame.

"THE RAINES SERVICE."—The pride in all that they do is shown in the new price list of Messrs. Raines and Co., of Ealing, of whose enlarging and printing services we cannot speak too highly. The issue of a beautiful piece of printing such as the list and the folder which more shortly describes Messrs. Raines' offers to professional photographers is proof enough of their refined sense of what is in good taste. A very necessary qualification this for an enlarging and printing firm, but, of course, not the only one by a long way. If such a firm had not also the means of originating and producing attractive photographic work, and that smartly and at a moderate price, they might as well go out of the business, and try and find a market for their fine taste in matters artistic. It is because Messrs. Raines have harnessed their genius in this respect to a very efficient commercial management that their output is unquestionably the hall mark of excellence in trade work for the photographer. We do their enlargements and folder portraits a poor compliment by dismissing them as "trade work," for we have constantly had occasion to be astonished at the extent to which Messrs. Raines have been able to carry out special individual requirements, and to apply their magnificent technical facilities to a customer's peculiar needs. Their new and comprehensive list should, however, be consulted for their standard productions in printing, enlarging, and finishing. It is sent free to bona-fide professionals.

SIR BENJAMIN STONE, M.P., will spend the Easter Vacation at Constantinople, where he proposes to investigate and photograph the ancient tombs from Sidon, which are now in the Sultan's Museum.

THE MARBLE ARCH.—The "Builder" points out that the original scheme for the improvement of the Marble Arch, proposed by Mr. Speaight, "has been distorted so as to lose all architectural symmetry and significance." In place of his semicircle, with the arch on the chord of the semi-circle, "what we now see on the County Council sketch is a lop-sided arrangement, in respect of which the arch has almost ceased to have any significance. . . . The improvement, as now shown, is well meant, and may be useful to facilitate traffic; but as an architectural scheme it is a blunder, and a good idea has been spoiled."

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

FRIDAY, APRIL 10.

Loughborough Photographic Society. "Photographic Chemicals."  
Cardiff Photographic Society. Annual General Meeting.  
Nelson Photographic Society. Rotary Carbograph Paper.

SATURDAY, APRIL 11.

Hackney Photographic Society. "Lord's Bushes." The President.  
Chelsea and District Photographic Society. Excursion to Denham and Neighbour-  
hood.  
Liverpool Amateur Photographic Association. Excursion to Eastham.

MONDAY, APRIL 13.

Cleveland Camera Club. Members' Slides.  
Kidderminster and District Photographic Society. Photographic News Prize  
Slides.  
Gravesend and District Photographic Society. "Ozobrome." A. E. Swift.  
Bradford Photographic Society. "Carbon Process." John Mackenzie.  
Cattord and Forest Hill Photographic Society. "Bromide Printing and Toning."

TUESDAY, APRIL 14.

Royal Photographic Society. Ordinary Meeting. "Art and Photography."  
G. A. Storey.  
Redhill and District Camera Club. 1906 R.P.S. Prize Slides and Members' Slides.  
Wimbledon and District Camera Club. "The Oil Pigment Process."  
Keighley and District Photographic Association. Y.F.U. Invitation Portfolio.  
Southampton Camera Club. Photography Prize Slides.  
Rotherham Photographic Society. "Wonders of the X Rays." J. Leadbeater.  
Sheffield Photographic Society. "A Photographic Holiday in Normandy."  
James W. Wright.  
Hackney Photographic Society. "Pictures in Holland." S. E. Fincham. R.P.S.  
Affiliation Slides. Council Meeting.

WEDNESDAY, APRIL 15.

Woodford Photographic Society. "Theory and Practice of Time Development."  
W. F. Slater, F.R.P.S.  
Leeds Camera Club. "The Use of a Lens." William A. Furze.  
Croydon Camera Club. "Elementary Photographic Chemistry." W. H. Smith.  
Tunbridge Wells Amateur Photographic Association. "A Corner of Dorset."  
H. Wild.  
Bristol Photographic Club. Annual General Meeting.

THURSDAY, APRIL 16:

Handsworth Photographic Society. "Printing and Toning." J. Gough.  
Middletown Photographic Association. Hand Camera Night. By Members.  
Mill Camera Club. Portfolio Night.  
Liverpool Amateur Photographic Association. Excursion to Dovedale.  
Optical Society. "The Structure of the Eye." Microscopic Demonstration. Dr.  
W. Ettles, F.R.C.S., Ed.

### ROYAL PHOTOGRAPHIC SOCIETY.

MEETING held Tuesday, April 7, the president (Mr. J. C. S. Mummery) in the chair.

A short address was given by Mr. Reginald Craigie in introduction to the exhibition of photographs by the late Mr. Horsley Hinton now arranged in the society's rooms and briefly reviewed on another page. Mr. Craigie characterised Mr. Hinton's pictorial photography as embodying its author's keen sense of the grandeur of Nature. He believed that in time to come Hinton's photography would survive that of many of his contemporaries, and he uttered a warm appreciation of the deceased gentleman's personal qualities. Mr. Craigie also referred to the memorial fund, of which particulars are given in this issue, and appealed for contributions, even the smallest.

A demonstration of the gum-bichromate process was then given by Mr. C. Wille, who explained in some detail the methods which he had found best. He made his gum solution strong, 6 oz. in 10 oz. of water. The solution should be made in the cold, and a sample of gum selected which would completely dissolve in the above proportions in at most a couple of days. He found this strong solution to keep better than a weaker one. The bichromate he used in saturated solution, and for pigment preferred the cake colours which he mixed with water to form a thin cream which was afterwards mixed in measured proportions with the gum solution. In commencing work he found it well to start with one part of the pigment cream and add to it seven parts of gum solution, one part at a time, after each addition applying the mixture in a thin band to a piece of the paper to be used. He thus obtained seven strips of gum-pigment, each containing more gum than the preceding one. On allowing the paper to dry in the cold and placing it in cold water, he was able to ascertain the best proportion of gum which would allow of the pigment being completely removed from the paper in cold water. He made it a point to give the paper a slightly tinted substratum by applying a very thin wash of gum, pigment and bichromate, the pigment being usually either red or

yellow. This gave a toned effect to the print. As regards the proportion of bichromate, he adjusted it to requirements; the more bichromate the finer the grain of the print, and vice versa. The thickness of the coating was a very important part of the process, a thick coating giving a very hard soot-and-whitewash effect, whilst for a very flat negative a fairly thick coating was advisable. The pigments varied in the proportion of gum which they required, lamp-black requiring most. The demonstrator's method for exposure of gum prints was as follows:—He provided himself with two scale actinometers, each supplied with P.O.P., and he also exposed at the same time as one of these a piece of the same P.O.P. behind the negative. By exposing to light until a certain part of the negative was properly printed on the P.O.P., he ascertained the highest number of the actinometer made visible during this same exposure. He then placed a piece of gum paper in the same actinometer and exposed it side by side with actinometer No. 2 containing the other piece of P.O.P. Both were exposed until some number appeared on the P.O.P., when the gum print was developed and the highest number visible observed. If the number obtained on the first P.O.P. was 15 and that on the second 18, the simultaneous number obtained on the gum being 12, he subtracted 12 from 18, giving 6, and added this number to that obtained on the first P.O.P., namely 15. The sum of 15 + 6 (= 21) he then adopted as the number to be taken in exposing the gum paper by means of the P.O.P. actinometer. Over-printed copies he found it best to treat by soaking in water for times up to forty-eight hours. Further soaking than this was useless, and it was best not to use hot water for a shorter time as a hard print was the result.

LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.—Meeting held on Thursday, April 2, 1908, Mr. A. E. Smith in the chair. Dr. C. E. Kenneth Mees lectured upon "The Nature of Colour." White light, he said, was composed of various colours, which, when split up by the prism, were found to range from blue-violet to red, and the easiest way to remember its nature was to speak of it as wave lengths, the blue-violet being 4,000 and the red 7,000, the other colours coming in between these. The spectrum was thrown upon the sheet, and Dr. Mees showed how red absorbed all but red, in the same manner, he said, blue absorbed green, and so on. He put forward the theory that there was no such colour as pure yellow either in the spectrum or nature, but said that what was usually called the yellow band was in reality a mixture of red and green. This was illustrated by combining the red and green rays of the spectrum upon the sheet when yellow resulted. Given, he said, a drawing to copy, in magenta and blue green upon a white ground, to be reproduced in two printings, one would require to use a green and a red filter in the making of the negatives; for red and black on white, blue filter would be needed for the red, and a red filter for the black, this would reproduce the original as follows: The red-filtered plate first printed in red and the blue-filtered plate in blue, which, when printed upon the top of the red would give the black. He mentioned a filter which he had made which, when looked through, showed a landscape of nature as having a green sky with scarlet foliage. He then described the filters required for photo-micrography, shown on the screen the colour of the filters and the parts of the spectrum which they cut out. Following this, he gave shortly the basis of three-colour work, and showed that the three colours, blue-green, magenta and yellow, would reproduce all colours. It was, he said, necessary to adapt the filters to the colours that were to be taken. The lecture was very fully illustrated throughout. Dr. Lindsay Johnson passed round a chart of the spectrum which was interesting, inasmuch as it was a double one painted by a lady artist who was colour blind in one eye. In the one chart the colours and lines were shown whilst in the other no colours were given, although the lines were shown; the two paintings had been painted one with each eye. He also showed a pair of glasses which, when looked at by transmitted light, appeared a yellow brown, but which, when superimposed, changed to a bright red. Dr. Mees explained why the change took place. After a slight discussion the Chairman moved, and Dr. Johnson seconded, a vote of thanks to Dr. Mees for his lucid lecture and the Chairman presented to Dr. Mees the "Henderson Award" which he gained last year. Dr. Mees replied, saying that he was proud to be numbered amongst those who had gained this award and should always remember that the late Mr. A. L. Henderson had much for photography.



## Commercial & Legal Intelligence.

**PRO-GALLIC PAPER.**—In the King's Bench Division last week, before Mr. Justice Lawrence and a special jury, was heard an action by Mr. Charles Joseph Parr, a sensitised-paper maker, against Messrs. George Church and Co., paper factors and waxed paper makers, of Trinity Lane, E.C., for damages for wrongful dismissal. The plaintiff's case was that he had studied how to make sensitised paper, and after he had been in business with another firm, acting as the Premier Sensitised Paper Co., a suggestion was made that their business should be amalgamated with the defendants'. The plaintiff was to have £700 in shares in the company, and become manager at a salary of £200 a year. By his agreement he guaranteed to produce sensitised paper of a satisfactory merchantable kind. In the defence it was contended that the dismissal was justified, inasmuch as the plaintiff could not do what he said he could do. On Friday the jury awarded plaintiff £250 damages, and judgment entered accordingly, with costs.

**WINDING-UP.**—The Official Receiver in the Companies' Winding-Up Division of the High Court has now issued particulars under the liquidation of *Re Satino, Ltd.*, of 6, Church Row, Aldgate, E., from which it appears that the statement of affairs as regards creditors' gross liabilities amounting to £1,603 10s. 5d., of which £5 13s. 7d. is expected to rank against the estate for dividend. Assets are estimated to produce £457 16s. 10d., less £36 10s. for claims of preferential creditors payable in full, leaving the net assets at £421 6s. 10d., but as all the assets are covered by debentures, the net assets so far as the unsecured creditors are concerned are nil, and the deficiency £1,145 13s. 7d.

**ALLEGED THEFT BY A CANVASSEER.**—John Watt, described as a photographer's canvasser, of Butler Street, Bradford, was brought up last night at Keighley on a charge of stealing 2s. in money, the property of Mary Sugden, The Strand, Cottingley, from her house on Tuesday. It appears that between one and two o'clock in the afternoon, Mary Sugden, a widow, was in her house when Watt called upon her. He told her that he was canvassing for photographs, antique goods, etc. Sugden had placed a two-shilling piece on a shelf, and immediately he had gone she missed it. She went after him, and by a note got him to return to her house. Here she locked him in and went to the police-constable Curl, who returned immediately and placed Watt under arrest.

### NEW COMPANIES.

**Mawson and Swan, Limited**, has been registered with a capital of £30,000 in £1 shares, to acquire the business carried on at New-on-Tyne and elsewhere, as "Mawson and Swan," to adopt agreements with Sir Joseph W. Swan, J. B. Payne, and A. Payne, to carry on the business of manufacturers of and dealers in photographic dry plates, films, etc. There will be no initial public issue.

## News and Notes.

**CHANGE OF ADDRESS.**—Messrs. Tennant and Ward, publishers of "Photo-Miniature"; "The American Annual of Photography"; have removed from No. 287, Fourth Avenue to new and larger premises at No. 122, East Twenty-fifth Street, New York, to which all communications intended for their publication should in future be sent.

**LECTURES ON PHOTOGRAPHIC CHEMISTRY.**—Among the arrangements for lectures at the Royal Institution after Easter are three lectures on the chemistry of photography by Dr. Alexander Scott.

**THE "ENSIGN" ROLL FILM MONTHLY COMPETITION** for March has been held in the three-guinea camera being sent to Staff-Surgeon H. R.N., who is at present stopping at Sandown, Isle of Wight.

**PROPER PHOTOGRAPHS.**—The Criminal Court in Rome was filled last week with an eager and curious public, anxious to witness the trial of the German, Wilhelm Pluschow, aged twenty-years, and a native of Weimar, who is accused of various grave crimes against public morality. He is, moreover, charged with having sold and offered for sale on several occasions photographs of

a very improper character. Pluschow was arrested on May 11 last, as the result of a denunciation lodged by Signor Alfredo Marinelli. There was found in the studio a perfect host of dubious photos, on examination of which the police arrested Pluschow. As the result of their investigations, the police found that Pluschow very often went to a popular watering-place to obtain subjects for photography. It appears that his studio was frequented by a large number of people, including some high personages and numerous foreigners, the majority of them being Germans. Pluschow was found guilty, and an order given for his deportation from Italy.

**A "FRY" ENLARGEMENT.**—An enlargement now being shown in the window of the Rover Co., New Oxford Street, interests us for the evidence it affords of the excellent use which can be made of a small negative in the hands of a skilled enlarger. The subject, a line of motors outside the Ship Hotel at Brighton, was taken with a quarter-plate N. and G. camera by an amateur worker, Mr. Robert Head. The sepia bromide enlargement measures 60 x 30 inches, and is a tribute to the care and skill shown by the staff of Mr. S. H. Fry, of 5, Highbury Grove, London, N., of whose high average of work in the photographic processes it is a very fair specimen.

**TECHNICAL LIBRARIES.**—It is well known (writes the "Society of Arts Journal") that American employers give much more attention than has been the practice in this country to affording facilities to their managers and workpeople for obtaining technical knowledge. For example, a large organisation of spinners and manufacturers at Atlanta (Georgia) has adopted the following scheme for keeping their employees up to date in commercial and technical knowledge of the textile trade. A librarian is employed to secure all the latest books dealing with spinning, weaving, and textile engineering; all weekly, fortnightly, monthly, and quarterly periodicals bearing on the subjects are purchased, as well as every kind of year book. These publications are obtained from all parts of the world. The librarian prepares brief descriptions of the books, to which any one may refer to get a quick idea of the contents. In some instances the whole periodical is filed, in others special articles are cut out, and sometimes foreign articles are translated and pasted in scrap-books. Everything is carefully indexed, and the library is open to any employee.

**PRESENTATION TO MR. GEORGE DAVISON.**—That Mr. Davison, who is retiring from the managing directorship of Kodak, Ltd., has gained both the respect and esteem of his colleagues and fellow-workers was evidenced by an interesting little ceremony which took place quite recently at the firm's head-office in Clerkenwell Road, when Mr. F. C. Mattison, the secretary and assistant manager, on behalf of the staff, asked Mr. Davison's acceptance of a handsome gold watch. The gathering numbered representatives from the firm's London, provincial, and foreign houses, and Mr. Mattison, in speaking for all, voiced the general feeling of regret at the severance of Mr. Davison's long active connection with them, and also their satisfaction that, though in a less active manner, Mr. Davison would still give them the benefit of his assistance. In reply, Mr. Davison expressed his sincere appreciation of the kindly feeling and goodwill which had led to his fellow-workers putting their good wishes in so welcome a form, which would, he said, be a constant reminder to him of the friendly relationship which had existed between them during the long period—nearly twenty years in all—of his association with the firm.

**DEATH IN A STUDIO.**—The discovery of the dead body of a photographer named Alleyn was made last week at the closed studio belonging to the deceased, at Hastings. Alleyn's body was found with some indiarubber tubing fixed to the mouth, and death had evidently taken place some weeks ago. At the inquest it transpired that the name of the deceased was Henry Benjamin Allen.

**PHOTOGRAPHY, MUSIC, AND POETRY.**—At the Theatre Flamand (known also as the Théâtre Communal) in Brussels on Tuesday, the 31st ult., the members and friends of the Club d'Amateurs Photographes de Belgique held their tenth anniversary. Part 1 consisted of a very fine series of lantern slides of Venice, by M. Gustav Marissiaux. During their exhibition suitable vocal and instrumental music was performed behind the screen, and at intervals Madame Marguerite Radoux (the wife of the composer) declaimed connecting poetry. The effect of the whole was most charming and was greatly enjoyed. The third item in the programme was some Greek figure

studies, and the concluding series (also by M. Marissiaux) was called "La Bretagne." (Many of these Brittany pictures were very fine indeed; but the doleful poetry and music by which they were accompanied, although doubtless quite in keeping with the subject of the views, produced a rather depressing effect. The building in which the exhibition took place is a fully equipped theatre, with four tiers. It was crowded with a most enthusiastic and sympathetic audience, which took every opportunity of expressing its approbation at the excellent entertainment. M. Marissiaux has promised to show the above-mentioned series of "Venice" at one of the evening meetings of the Brussels Convention in July next. The members may therefore look forward with pleasant anticipation.

**MAULL AND FOX.**—The partnership between Herbert Fox and Frederick Glover, photographers, etc., carrying on business at 187A, Piccadilly, as Maull and Fox, has been dissolved, and all debts will be received or paid by Herbert Fox, who will carry on the business under the same style as before.

## Correspondence.

\**We do not undertake responsibility for the opinions expressed by our correspondents.*

\**Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*

### THE PORTRAIT POSTCARD.

To the Editors.

Gentlemen,—Referring to your letters in your last issue under the heading "The Portrait Postcard," I am much struck with the letter signed "Fair Trade and Fair Prices," possibly because it is just such a case as my own that he lays before your readers. I agree with him in everything, but having paid a £10 licence, I do not think I should be debarred from operating outside the district council area that I am situated in, as I have a valuable connection, and frequently have to go a distance of ten miles and perhaps into a town where there is another photographer. Not that my prices are below his, for they are higher, but I do better work.

He says: "Will the P.P.A. move?" Personally I have not yet become a member of that association, as I know of several professionals who do belong, and from what I gather from them they do not seem to think the interests of the country photographers are looked after sufficiently. If they would only put a stop (or endeavour to do so) to some of the travelling firms which are conducted by swindlers, and who employ men of their own stamp, I would gladly become a member, and do all in my power to assist in this direction. If the P.P.A. will not move, surely the country photographers can form an association to look after their own interests? If the profession would only hang together instead of trying to cut one another's throats, I am sure things would be better for all concerned.

I appeal to all country photographers to take some steps before it is too late.

I do sincerely trust you will keep your columns open for some weeks to come so that country photographers may air their views and see if something can be done to remedy those causes which often make the public look upon photography as a dishonourable profession.—Yours faithfully, **GOOD WORK AND FAIR PRICES.**

[Our correspondent speaks without knowledge when he accuses the Professional Photographers' Association of having done nothing towards combating the travelling tout-photographers. We refer him to the Association's annual report on p. 242 of our issue of March 27 last, from which he will see that directly and through the Press a good deal has been done.—Ens. "B.J."]

To the Editors.

Gentlemen,—I have read with interest the articles by "Fair Trade and Fair Prices," and others re "Portrait Postcards," and have come to the conclusion it is high time something was done to bring about a better state of things. It is absolutely ridiculous for any one to do postcards at 1s. 6d. a dozen or 1s. half a dozen. In my own little town I have found we must take them up or starve, but we charge 3s. per dozen, busts 3s. 6d., take only one negative, and submit no proofs, unless charged extra, and by using great economy

have been able to get a little out of it. The only advantage the postcards have, to my thinking, is in the fact I believe we get little in a good deal more often for postcards than we should do for cabinet or even C.D.V. portraits.

I scarcely agree with "Professional" in not turning them out if not good, for if we are going to make good pictures on postcards no wonder our ordinary work suffers. I simply tell our sitters that postcards are a special cheap line, and not near the quality of ordinary work, and give no guarantee whatever. I think, "Fair Trade and Prices," that if we are to see the photographic profession looked upon as an honourable one, and if we are to stand out the "postcard fiend" and "enlargement vampires," we must devise some means of petitioning Parliament to have photography duly licensed, and to be compelled to show same to police, same the motor driver, or be liable to a fine; and, to still further protect the country at large against these "wily serpents," to only give licences to persons on presenting a duly signed application, signed by, say, two Justices of Peace or clergymen. I think any respectable man or woman would be quite sure to find the requisite persons, if this could be established it should be effectual in ridding the country of all these "photographic frauds," and thereby giving once more "fair trade and fair prices." Finally, as a member of the P.P.A. since its formation, it seems a pity more photographers not join hands and unite together to try and elevate the profession once more to an honourable and respectable position.

ANOTHER COUNTRY PHOTOGRAPHER.

To the Editors.

Gentlemen,—I have also read with interest the various letters that have appeared in the "Journal" against the so-called innovation of the postcard. While deploring its existence I have, with many others, sufficient gumption to recognise that the demand has created the supply. As an outdoor photographer of some experience I have learnt, to my sorrow, that postcards "have come, and come to stay"; but, making a virtue of necessity, I work a little hard to reap the normal turnover, and I beg to smile in derision at the "arm-chair" photographers who, standing on their awful dignity, tell their customers "we cannot guarantee postcards." I note with amusement "Fair Trade and Fair Prices's" diatribe on the "postcard fiends," and the condign punishment he would mete out to all sundry who dared to try and live. I can almost hear him roar, "off the earth, ye postcard fiends and enlargement vampires; I do not fit that you should live, while 'I' am in my glass-house. Away ye itinerants!" But I throw not. We, the itinerants or nomads (call us what you will), are as open to as much consideration as more indolent superiors (?). We work for our living, and work pretty hard, and if four dozen exposed plates per day is any guarantee then business should be fairly brisk with our dealers as well as ourselves. That we "batten on the provender which properly belongs to another" I take exception to. One might as well think of putting a notice in the window, "Shop anywhere but here, if you dare." Let "Fair Trade and Fair Price" get out of his "arm-chair" go out and seek those customers which properly belong to him. In his impudence, to think they are going to wait his pleasure or commands.—Yours, etc., **ARCH FRENCH.**

To the Editors.

Gentlemen,—The portraiture postcard trade does not pay. Manufacturers are killing the goose that lays the golden eggs by producing them. It has opened a wide field for a certain section of amateurs and would-be professionals. Elated by their success, they have left other occupations and come forth into the world as full-fledged photographers. They have formed a profit from the ordinary commercial business basis, omitting weather and out-of-season vacancies. They have flooded the market with all sorts of work. So keen have they been to obtain orders that they have actually gone about photographing groups in different streets and sold them (P.O.P. enamelled) at one price each. Can anyone tell me how to do it? They have held photography up to ridicule by their crazy methods. Outdoor portraiture is completely crushed. Now they are making a raid on portraiture. Of course, they murder their subjects to a great extent. They have advertised the evil desire of the public demand for postcards. Wake up, ye sluggards, before it is too late.



sign a great big petition to the manufacturers and ask them to make some reasonable device to protect this wild goose chase of theirs. I should like to hear the opinion of the manufacturers on the subject.—Yours respectfully,  
FAIR PLAY.

To the Editors.

Gentlemen,—I have been much interested in the letters recently appearing in the "B.J." re the "Portrait Postcard," for I, too, have been in this particular direction. I read with particular interest the letter appearing in your issue of April 3 by "Fair Trade and Fair Play."

The idea put forward by him of requiring photographers to take a licence appears to me a step in the right direction, though I think his suggestion of £10 would hit hard in the case of a small dry business. The amount should be based upon average annual earnings. There is one point, however, which I would make a hard-and-fast rule—viz., that no one should be allowed to take out a licence on any account unless he were able to produce his indentures of apprenticeship.

Under the present circumstances, of what use is it for any one to apprentice their boys in the photographic line when any one, Dick, or Harry can buy a camera and pose as a professional photographer?

To point my argument, I may quote a case which has recently arisen in my district. Within half a mile of me there is a man until a short time ago was a bricklayer. Leaving that, he had a local glove factory as a glove-cutter, and opened a general at his house, and his latest departure is a camera, with which he takes photographs at odd times and supplies postcards to all and sundry at 1s. 6d. per dozen. Fancy the incongruity of it all! Such a man, I say, should not be able to pose as a photographer as the public is understood by the public, and if it was required that photographers be licensed, and, further, required to produce their indentures when applying for licence, then this class of man would be barred.

It is a far greater menace to the profession, and drags it to a lower stage, than the itinerant man mentioned by your correspondent, who is usually regarded by the public as largely composed of quacks and in a large percentage of instances is treated accordingly. I am, yours truly,  
INDENTURE.

## Answers to Correspondents.

All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.

Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.

Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., 24, Wellington Street, Strand, London, W.C.

For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 7d. each photograph, to cover cost of registration fee, form, etc. Ten unmounted copies of each photograph must be sent with the application.

PHOTOGRAPHS REGISTERED:—

Money, 35, High Street, Chatham. Photograph of the Wesleyan Central Hall, High Street, Chatham.  
Hanson, 3, St. James Street, Guernsey. Two Photographs of Maj.-Gen. Campbell. Photograph of Maj.-Gen. Campbell and Capt. Campbell.

ING.—In the issue of your journal dated November 8, 1907 (p. 846-7), was described a patented focussing device, No. 22,238, of 1907. Possibly you may know whether this invention has been taken out on the market. If so, perhaps you will be good enough to let me by whom it is being worked.—H. V. R. SCHOFIELD.  
As far as we know it is not on the market. It would probably be expensive to make. Why not inquire of the patentee?

EDS.—The amounts paid are not very great, about a guinea for the sole copyright for postcard purposes, and some firms will

not pay as much as this. Your best plan is to select the leading firms from advertisements in the "Picture Postcard," published monthly, by E. W. Richardson, 42-44, Imperial Buildings, Ludgate Circus, E.C.

W. E. KETLEY.—We cannot explain the discrepancy, except by reminding you that the speed numbers are obtained by tests of plates, and different samples of the latter are liable to vary, also the tests may not be perfectly accurate.

STUDIO.—1. I am building a wooden studio in the country for high-class portraiture, and the architect and builder I am employing, though making no trouble about it, have not built a photographic studio before, so I should be glad if you can give me any useful information or tips, such as best width of glass, etc. 2. I saw in the "B.J." some time back a little joining piece recommended and illustrated which was to make join reliably water-tight, I think. Can you tell me who supplies them? 3. Is there any book published on studio building?—R. P. S.

1. On page 635, August 23, 1907, there is a practical article on studio building. On page 659 of the following week is an article on studio blinds, etc. If you consult those articles you will get all the information you require. 2. We cannot identify the paragraph. If you will write further we will try and find out. 3. Yes, "The Photographic Studio," a guide to its construction, etc., by Thos. Bolas. It is published by Marion and Co., price 2s.

FORM OF AGREEMENT.—I should be glad if you could inform me where I could get a form of agreement for an assistant to agree not to engage, or start in business, within a certain radius, in event of leaving present employment. Or if you could give some fair and reasonable terms for such agreement.—AGREEMENT.

Any solicitor will draw you out a form of agreement if you tell him the restrictions you wish to apply to the employee in the event of his leaving your employment. Possibly you have in mind the printed forms of wills, notices to quit, or the like, as sold by stationers. If so, we do not think they are to be had anywhere with reference to services. You might draw out an agreement yourself, but you had better employ a lawyer to do it, for there is an old proverb that "the man who acts as his own lawyer has a fool for a client."

BROMOIL.—In the bromoil process, though I have carefully adhered to the formulae and instructions, as printed in current number "B.J.," I find the image too fugitive in the bleaching process, and have lost a number of good prints, developed with amidol. Can you explain where I am probably at fault?—G. H. B.

We do not quite understand your difficulty, but assume that you mean the image will not reappear in the pigmenting. You may be using unsuitable paper or solutions that are not quite fresh. Try with some quite fresh ozobrome solution, and give a final soaking in water of about 70 deg. Fahr. Also be careful to fully develop the original bromides.

ANXIOUS.—The card is a poor bromide or gaslight print.

VANDYKE.—We have never been able to find any difference between the two; we believe they are both the pure substance.

S. H. C.—1. If the date of the publication shows that at least twenty-eight years must have elapsed since its appearance there cannot be any copyright subsisting in the engravings. 2. No. 3. It does not matter whether you offer for sale or do not, the copying of a work in which copyright subsists is illegal in either case. 4. This raises a legal point other than copyright, and we cannot answer it with any confidence. Our impression is that action could be taken at the subsequent date. 5. Separate markings on each engraving is not necessary when they appear in a book. 6. We should say that, legally, you cannot, but that actually the damage you will do to the authors of the copyright is so slight that they would not think it worth while to move in the matter.

INTENSIFIER.—I was given the following as a good formula for intensification:—

Anhydrous of soda .....	400 grs.
Dissolved in water.....	10 qzs.
Mercuric iodide .....	40 grs.

added after dissolution of the soda. After allowing this solution to stand for a few seconds it deposits a red precipitate, and, on well shaking, find it useless for intensification. Is it on account of want of knowledge in not first bleaching the negative, or is the composition wrong? Of course, I would naturally be guided by my com-

panion, the "B.J. Almanac," but my reason for asking you to help me in this matter is that I have to test the accuracy of my tutor before incurring further expense. Thanking you in anticipation. —DOUBTFUL.

It is not a very good formula, but it should impart some intensification to the negative. Why not follow the directions on page 799 of the "Almanac"?

**WILKINSON AND Co.**—General Waterhouse's papers were published in the Journal of the Royal Photographic Society (66, Russell Square, W.C.) about the year 1893.

**A DISREPUTABLE METHOD OF BUSINESS.**—A publishing firm in — sent on to me a box of pictorial postcards, accompanied by an account for 10s. As these were not ordered by me I replied to them, stating my disapproval of such business methods, and that if they forwarded sufficient money to cover postage I would return them. However, they advised me to retain them and endeavour to sell them, and sent on another account a month or so later. After tendering another some time further on I replied that the cards lay here at their own risk, and if they were not claimed within a certain period they would be destroyed. They replied that they would not take them back now, and to-day I have received a letter threatening to summons me if not paid by return. I would like, if you would say through your columns, whether they have any case against me in not refusing delivery of the cards in the first instance. The cards still lie here untouched.—A. M.

Decidedly not, as you offered to return them at the time if the people sent stamps to cover the postage. As to threatening a summons, that is all "bluff," and do not be bluffed. If you are summoned (which you will not be) simply state the facts in the Court and hand in the cards.

**SKAIFE'S PISTOLGRAPH.**—I have, in my collection of old photographic cameras, a little instrument, which was put on the market under the name of Pistolgraph, and was manufactured under the Skaife's patent, about 1881. Would you kindly tell me how the instrument was used, the kind of plate which were employed therein, etc.? I think that a notice about it appeared in the "B.J." or the "B.J. Almanac," and I would be very indebted to you for all information that you could give to me about the matter. The instrument produced little positive pictures, something like the ordinary ferrotype, but finer, and they were upon a dark coloured glass.—CHAS. MENDEL.

Skaife's patent is of much earlier date than that mentioned. It was 1856, No. 1,373. It is a small hand camera for taking collodion glass positives, as they required less exposure than negatives, and was furnished with a very quick lens and a very rapid shutter. If we mistake not, it was the first hand camera put on the market. It was very general at that period to take glass positives on dark or black glass, when the best results were desired.

**DAMAGED GLASS POSITIVE.**—I have frequently had glass photographs brought in to me to be copied, and have found that, by scraping the backing off and making a direct print, the final result is much improved. Last week I had one to copy and proceeded in the same way, but thought that I should improve by retouching the original. On my applying the medium most of the picture disappeared, and copying now is quite useless. I immediately removed medium with turpentine and re-backed with black varnish, but all that can now be seen is a very faint outline. I shall be glad to have your advice on the subject, as I am rather chary of tampering. Trusting you can help me out of my dilemma by favouring me with your advice in your next issue.—H. ADDINGTON.

From what you say, we expect the picture is quite ruined, and nothing can now be done with it. Possibly the picture had not been varnished, or, if it were, it was with a dammar varnish, which was the one usually employed for glass positives. Dammar is soluble in turpentine, and there is little doubt that the retouching medium dissolved it off.

**S. A. and Others.**—In our next.

**FERRO-PRUSSATE.**—As the gradation obtained by the action of light on the bichromates is remarkable for its evenness throughout the scale, while that of a ferro-prussiate image is decidedly poor in this respect, it would seem to me that, if one could convert the former image into the latter, it would be a distinct advantage

in cases where an evenly graded scale in ferro-prussiate is desired. Can you tell me how to do this?—THREE-COLOUR.

We cannot, nor do we think it can be successfully done. It requires the even scale yielded by the bichromates we also recommend you to make the prints in blue carbon tissue. It is an article of commerce, and is usually employed for three-colour work by the carbon process.

**MATTING PRINTS.**—I have been endeavouring to obtain matt surface portraits on gelatine paper by squeezeing the prints on to ground in the ordinary way with emery powder. The surface have obtained is not nearly so fine as some I have seen elsewhere. They also stick to the glass rather badly. I have seen somewhere the description of a way to obtain a very finely ground surface, the application to some acid fumes, but cannot now remember the way or where I have seen it. Can you help me in this matter, suggest a way to prepare the ground glass to prevent sticking?—CHAS. HUTCHINGS.

Glass can be matted by exposure to the fumes of hydrofluoric acid, but the latter is a highly corrosive gas, and we advise not to attempt using it. If you cannot get the effect you require with ground glass you will not get it with a finer glass. Should try preparing finest ground glass with beeswax, 20 g. turpentine, 1 oz.; rubbing this on with flannel, and polishing with silk rag.

**REPAIRING ACCESSORIES.**—Can you give me the ingredients used for the cement which covers the wood in the making of stoneware studio accessories? I have used plain Portland cement, but it comes off very easily, and makes a considerable mess on the floor when trodden on.—A.

We are not quite sure, but we believe it is common whiting, mixed into a paste with ordinary size, and laid on warm. For repairs you might try plaster of Paris, after the damaged places have been well wetted with water.

**ALBUMEN PROCESS.**—I shall be extremely grateful if you will give me a little advice. I have been in my present berth six months doing P.O.P., C.C., platinum, and a little carbon. My employer now wants albumen prints on paper sensitised at home. I am quite familiar with the working of the process through several years' work at my last place, though I have never actually worked myself. I can get on all right in sensitising the paper, printing, toning it, with very little waste. My difficulty is with the silver bath. After using it a few times it began to get tinted, eventually tinted the paper so much that it was impossible to get good whites in the prints. Then, unknown to my employer, I made up a fresh silver bath and all went well again, but now one is discolouring like the other. I believe there is some fault in preventing this, or at least of getting rid of the colour. Can you give me any advice?—FEMALE PRINTER.

All silver baths employed for sensitising albumenised paper become discoloured by use. They are decolorised by shaking them up with a little kaolin. The best way in practice is to keep a little kaolin always in the bottle—say, two or three spoonfuls in a Winchester quart bottle—and then return the solution to it after use, and well shake for a minute or two. By the next day the solution will be decolorised, and the bath, after filtration, will be ready for use.

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### SUMMARY.

E. J. Steichen, whose work in Autochrome colour photography has been much talked of for the past few months, has contributed to the "Camera Work" a full description of his methods, the essential ones of which we reprint on page 300.

A report of the L. and P. meeting announced for a demonstration of the "Thames" colour-screen plate appears on page 312.

The reception-room is further treated in the articles by Mr. Butt, who gives two photographs of the beautiful reception-galleries of Messrs. G. & J. P. & Co. reproduced. (P. 304.)

The sale and part-sale of copyright is the subject of this week's "Right Conversation." (P. 307.)

A further batch of correspondence on the portrait postcard will be found on page 314.

Welborne Piper has worked out a rapid and simplified method of determining the real working aperture of a lens by inspection. (P. 309.)

E. W. Foxlee refers, in a practical article, to the precautions to be adopted when working carbon process in the dark. (P. 303.)

The reduction of negatives by bleaching and cautious redevelopment is a recommended method, some practical notes on which are given on page 298.

The holders, a panoramic camera, and cinematograph mechanism are among the patents of the week. (P. 310.)

A paper on exposure in enlarging, Mr. J. Nixon combats some of the generally accepted views as to enlarging methods. (P. 308.)

Eastman Kodak Co., in its report for 1907, announces an increase of nearly £280,000 in its earnings. (P. 309.)

According to reports from Germany, progress would appear to be made in the production of a less dangerous cinematograph film. (P. 298.)

### EX CATHEDRA.

#### A Business End of Electro-photography.

One might look for light and airy persiflage in more likely places than in "The Ironmonger," which has a heavy, sober, Presbyterian sound about it, yet our contemporary cannot plead non-guilty to the charge of occasionally struggling to be gay—that is, if we are to judge from the "Trade Chat" in its current issue, where a writer ponderously frolics over a vexation of the ironmongering trade, of which we seem to have heard something in the photographic business, namely, the non-return of the photographs on which an ironmonger—foolish man—is in the habit of partially relying when he engages an assistant. It appears now that he is sometimes culpably negligent in returning these photographs, wherefore—and now we are coming to our contemporary's little joke—"The Ironmonger" suggested that the telegraphic transmission of photographs, or, better still, a process of telegraphic vision, will put an end to the trouble, and will permit of the negotiations being conducted in this fashion:

Hello! are you there? Is that Samuel Smoothspeech? I'm Obadiah Oldknow, of Oakton. You replied to my advertisement in "The Ironmonger" for an assistant. Your qualifications seem about right, but I want to see your phiz. Just switch on the telephone, please, and look as you usually do when serving a customer. Now let me see how you look when you're angry. Now give me your most seraphic smile. Thank you. That will do nicely. I will write you definitely to-night. Good-day.

#### Ortho-chromatism.

A little while ago the question of using ordinary non-orthochromatic plates with filter screen was again raised, and many strange statements and claims were made. It can easily be realised that a screen adapted to cut down the blue and violet light may be of service with photographic plates of all varieties, but when this simple fact is stretched so far as to make it appear that ordinary plates are as good as, or even more serviceable than, orthochromatic plates, the only result is the dissemination of a number of false notions with regard to orthochromatism in general. For example, we read in a contemporary that, "by suitable screening, any grade or range of orthochromatism may be realised with ordinary plates." Yet it requires no great effort of the reasoning powers to comprehend that if a plate is quite insensitive to, say, red, no amount of screening will cause the red to impress the plate. Some ordinary plates have a greater range of colour-sensitiveness than is generally imagined, but others are insensitive to certain colours, and with such plates the range of approximate orthochromatism possible is very strictly limited. It is interesting to experiment with filter screens and ordinary plates, but the fact that fairly useful results may be obtained with some brands of plates is no reason for either depreciating the use of orthochromatic plates with properly

adjusted screens, or for making all kinds of absurd claims for ordinary plates as a class.

### Reduction by Re-Development.

The method of reduction by re-development is one often advocated, but seldom practised, owing to the fact that faulty instructions have led more often to the spoiling of negatives than to their improvement. It is an old method, and the instructions given in most of the books that describe it usually prescribe the re-development of the bleached negative until the high-lights are not quite blackened through the glass. The plate is then fixed, and the final result too often is that the high-lights are found to be somewhat lighter than the half-tones, and so the negative is spoilt. These instructions describe a method that is capable of giving good results, but one that is very unsafe for the average worker. If they are modified slightly the process can be rendered not only certain, but far safer than any involving the use of solvents such as persulphate or cobaltamine. Any of the well-known bleaching solutions can be used, but perhaps the best is the familiar mixture of ferricyanide and bromide. Bichromate and hydrochloric acid is also very serviceable if plenty of acid is used so as to obviate the powerful intensification that such a mixture generally gives. When bleached and washed the negative should be re-developed with any convenient developer containing plenty of bromide. We generally use amidol with four grains of bromide per ounce of developer. The secret of success is slow development with a developer that acts right through the film, but does not readily give full density. If the development is conducted in a white porcelain dish, watched carefully, and stopped when the plate has apparently just regained its original density, it will be found on removing the plate from the dish and looking through it that it is very much thinner than it was originally, even though the image is blackened right through to the glass. If fixed at this stage the result may be too thin, and it is generally necessary to carry development a little farther. An experiment with a plate one half of which has been bleached will be instructive to anyone trying the process for the first time. If reduction is insufficient it can be repeated, or if carried too far it can be remedied by intensification. No detail is lost in the process, and all gradations are preserved if slow development right through the film is ensured. A hard negative can easily be converted into a beautifully soft one without the slightest risk of damage, and we look upon this method of reduction as one of the greatest possible value.

### Impure Sulphite.

A writer in the "Pharmaceutical Journal," from whom we quoted last week, states that: "Crystalline sodium sulphite, even in commercial quantities, is unlikely to contain any appreciable quantity of sodium sulphate." We frequently see it stated that if a sample of sulphite can be proved to contain a certain percentage of pure sulphite, then the rest of the sample is soda sulphate, and, as a poor quality sulphite is known to be capable of producing undesired effects in photography, all the blame is put upon the sulphate. We believe that up to the present soda sulphate has not been proved to be capable of producing any effect at all in development operations. It appears to be inert for all practical purposes, and, therefore, any ill effects must be charged to the account of some other impurity. We do not agree with the sweeping statement of the writer quoted above, but still it is a fact that in a sample containing, say, 97 per cent. of sulphite there can be no very appreciable quantity of sulphate, for the simple reason that there is little or no room for it. Such a sample must contain  $2\frac{1}{2}$  to 3 per cent. of carbonate, therefore the sulphate can only be present in

negligible quantity. We have never met with a 97 per cent. sample of sulphite, for 96 is the highest quality that has come into our hands. Recrystallised samples fresh from the best makers generally contain from 90 to 93 per cent., which strengths certainly leave room for an appreciable quantity of sulphate, and we have often met with good working samples containing only 84 to 86 per cent. These low value samples a considerable quantity of sulphate is undoubtedly present in addition to the carbonate, the quantity of which never exceeds 5 per cent., but also there are various decomposition products that have not reached the stage of sulphate, while bicarbonate is always to be found in a solution that has been mixed a little time. Some of the troubles caused by impure sulphite are, no doubt, due to the bicarbonate and to the decomposition products of the sulphite, but while we can attribute no definite ill effects to the sulphate, there is no need to ignore its presence. There can be no doubt that it always exists in the quality of sulphite commonly used by photographers, whether crystalline or anhydrous, though it is a very difficult matter to isolate it from other products of decomposition and determine its exact amount.

### FIREPROOF CINEMATOGRAPH FILMS.

UNTIL cinematograph films can be made of some less inflammable material than is used at present there will always exist the possibility of a recurrence of the terrible accidents associated with cinematograph entertainments, some of which have proved fatal. The use of celluloid films has been in many instances the direct cause of most of the fires which resulted in disaster. In order to remove this very serious objection numerous experiments are being made with the object of discovering a film that will be fireproof. Only a few years ago we were informed that preparation had been found that entirely met this demand. This was a combination of cellulose and viscose, composed largely of copper oxide and ammonia, and went by the name of azetylcellose. The quantity of spirit required in its manufacture was considerably reduced. But this material had the objection that it was neither sufficiently transparent, nor tough enough to withstand the wear and tear in the lantern rollers. Still, German chemists were convinced that azetylcellose would ultimately replace celluloid for cinematograph films, and as a proof of their confidence they carried out extensive experiments with it, and took out a number of patents for various modifications in its manufacture and preparation. The chief difficulties were to get transparency, flexibility, and toughness. When these were obtained it was usually at the expense of the main object in view, for these could only be obtained by the liberal addition of camphor and spirit, which meant that the new film had absolutely no advantage over the celluloid one.

Though these difficulties have not yet been entirely overcome, a very considerable advance has been made in the right direction. Dr. A. Eichengrün read a particularly interesting paper on the subject before the Society of German Chemists at the Danzig conference. He had been working on much the same lines as most of his fellow chemists, though he had been able to go a stage further, and had discovered a new azetylcellose preparation, which he calls "Cellit." This "Cellit" has been subjected to several practical tests, and from these would appear to be the most satisfactory substitute that has yet been discovered for celluloid when used for cinematograph films. First, all it is transparent, flexible, and at the same time so tough that it may be rolled or unrolled at a great speed for an almost unlimited number of times, without showing any sign of cracking, splitting, or other defect. On the contrary, it permits of the holes being made in it which are



ary for guiding it over the rollers, or spools, and ordinary care these will last an indefinite period with-  
aring. In short, the new film support may be used  
ctly the same way as celluloid is at present used, but  
this great advantage over celluloid, that it does not  
ily catch fire. Whereas celluloid when it is ignited  
off thick, choking smoke and a hot flame that it is  
impossible to put out, "Cellit," on the contrary,  
practically no smoke when lighted, and the small  
produced is easily blown out, as the fire has prac-

tically no hold on the material. At one of the practical  
tests a celluloid film was placed in position in the cinemato-  
graph lantern so that the direct rays of an arc lamp fell on  
it, and a "Cellit" film placed in the same position and  
under the same conditions. In less than three seconds the  
celluloid film caught fire, whereas absolutely no impression  
whatever was made on the "Cellit" film after ten minutes'  
subjection to the test. The discovery, if it realises all that  
is expected of it, should be welcomed by the cinematograph  
trade.

## THE MEASUREMENT OF THE EFFECTIVE DIAPHRAGM APERTURE.

ow to find the working effective aperture of a lens is a question often put to us by our readers, and is one in reply to  
a we usually recommend the pinhole method generally used for doublet and other non-single lenses. Mr. Welborne  
r now sends us a simplification of the methods which, so far as we know, has not been previously published. It has  
obvious practical advantages of requiring no apparatus other than a graduated scale, and of being performed in a few  
ds.—Eds. "B.J."]

majority of photographers measure the aperture by the  
l advised by the R.P.S., which is described in the  
Almanac for 1907, as follows:—  
e lens shall be focussed for parallel rays; an opaque  
shall be placed in the principal focal plane, the plate  
provided in its centre (in the axis of the lens) with a  
le; an illuminant shall be placed immediately behind  
n-hole, and the diameter of the beam of light emerging  
the front surface of the lens shall be the measure of the  
e aperture."

is an easy, though not the easiest, method of measur-  
ture, but, in spite of the quaint imperitiveness of the  
tions, it is not a strictly accurate one. It is not diffi-  
see that the method is only quite exact when the pin-  
infinitely small, and that if the hole is large enough  
through an appreciable amount of light, then the light  
from the front lens is not a simple parallel pencil,  
diverging bundle of parallel pencils of light.

most accurate method of measuring effective aperture  
means of a travelling vernier telescope, set parallel to  
ncipal axis of the lens, and travelling in a plane that  
through the axis. If this is focussed on the edge of the  
aperture seen through the front lens; a first reading  
n when the web of the eye-piece corresponds with one  
of the aperture, and a second one when the telescope  
versed across to the other side, and similarly adjusted,  
the diameter of the effective aperture of the lens is ob-  
with the greatest possible accuracy. No pin-hole at  
ncipal focus is required, yet, curiously enough, I have  
me across a description of a lens-testing apparatus with  
the telescope and pin-hole are used together.

telescope method is of course out of the question for  
erage worker, but, still, the method can be modified  
e same principle applied in an extremely simple manner.  
at is required is a scale (preferably of millimetres) of  
an inch square section, and so ruled that the division  
un nearly across the full width of the scale. The scale  
with its divided edge across the centre of the lens aper-

ture and pressed against the lens hood. The division lines  
being at right angles with the edge are also at right angles  
with the plane of the front of the lens hood, and therefore at  
right angles with the principal planes of the lens. By shift-  
ing the scale lengthways and sighting along the zero division  
we can easily arrange that line in alignment with one edge  
of the visible aperture. The other opposite edge will then  
be either exactly or very nearly in alignment with some other  
division line. If it exactly agrees, we can read the aperture  
diameter directly from the lines, while if it does not agree  
we can quite easily sight its position between two lines and  
estimate the fraction of a millimetre that agrees with it. In  
making the test it is best to stand so that light falls on the  
scale and makes the divisions easily visible. The lens need  
not be directed towards the light, as the edge of the aperture  
is quite clearly seen if we simply look through the lens at a  
sheet of white paper.

The scale can be made very easily by taking a square section  
piece of wood, three or four inches long, and pasting a strip  
of white paper on one side. When dry the scale is marked  
out, and the divisions ruled across with the aid of a set-square.  
The division lines must be at right angles to the edge, and  
the edge must be straight. The rule itself, however, need not  
be quite truly rectangular, so the most amateurish workman  
can readily make the appliance.

This is, of course, a far quicker method than the usual one  
with a pin-hole, and in principle it is a more correct method.  
The apparatus can be elaborated with a self-centring appli-  
ance that facilitates placing the edge across the centre of the  
aperture; and sliding sights and a vernier can be fitted for  
quite accurate reading. Still, with the simple form of ap-  
paratus described the photographer can measure the aperture  
of a lens with all the accuracy that he requires, and in a small  
fraction of the time required for the very common method  
that involves the use of a pin-hole and the exposure and de-  
velopment of a disc of paper fixed in the lens cap; which,  
by the way, is perhaps the most inaccurate way of applying  
the pin-hole method.

C. WELBORNE PIER.

AINS us to see the regrettable methods of hurried and irre-  
ple journalism penetrating even the arena of photographic  
ions. In the "Bath Herald" we read, in regard to the Bath  
raphic Society's exhibition, that "The judge will be Mr.  
Kimber, F.R.P.S., the well-known expert, and he has to-day  
he awards in anticipation."

BOLT COURT LECTURE.—On Thursday in last week Mr. Sherard  
Cowper-Coles read a paper entitled "Some Notes on Electrotyping"  
at the London County Council School of Photo-Engraving and  
Lithography. The chief features dealt with were the conditions  
necessary for the rapid electro-deposition of copper in the moulds  
and the effects obtained by mechanical and chemical treatment.

# COLOUR PHOTOGRAPHY WITH THE AUTO-CHROME PLATES.

(Part of a Paper in Mr. Alfred Stieglitz's "Camera Work.")

THE extreme thinness of the emulsion calls for general handling of the plate, but except during the memorable frilling period I have not used any precautions that one does not generally give to an ordinary plate. The one thing to avoid is to touch the surface of the film before development. The merest touch means a black fingermark, and probably it will come right across the face in a good portrait. Instead of the black paper supplied with the plates to protect them from abrasion in the holders, several French camera makers have made very useful special plate-holders that have an air-space behind the sensitive surface.

Any one that enjoys working in the dark with a nerve-racking alarm-clock certainly has the option to do so, but I like all the light I can get in the dark-room. The Autochrome emulsion is slower than some well-known orthochromatic plates, which I have developed with a red light, so why not the Autochromes? I first worked with a commercial violet and yellow celluloid safe-light, which gives a deep ruby light, safe for all reasonable use. Later I acquired one of Wratten and Wainwright's green lights, which gives not only more, but also a safer light. The loading and placing of the plate in the developer is done with my back to the light; at the end of thirty seconds the tray is brought close to the light for an instant to see how the plate looks. Then the necessary changing, if any, in the developer is done with my back to the light, and the plate examined every thirty seconds or so by transmitted light—quite close to the light. Giving an unexposed plate twice this amount of exposure during development did not show a trace of fog with the lights mentioned above. A safe light can be made by fixing out two unexposed gelatine dry-plates, thoroughly washing them, then drying. Dye one by immersing it in a strong solution of methyl violet, rinse and dry. Do the same with the other in a solution of tartrazine; subsequently bind the two together. If one is content with the Lumière time development formula the dark-room can be dispensed with entirely. A number of special daylight developing machines for this purpose have been put on the market in Europe. But I think the Premo Daylight Developing machine, which is made for ordinary plates, is really better than any other machine for the Autochromes.

The plate is put into a daylight developing-tray under cover of a changing-bag, the developer poured in, and at the end of two and a half minutes poured off and clean water poured in—or water with a few drops of sulphuric acid. The plate is then taken out of the tray and put in the permanganate bath, and so on.

When it comes to the question of exposure we are really up against the real difficulty. Many are the "systems" that have been worked out, and their efficiency is all of the same order—nil. The mechanical solution of the problem is still to be found. The best system I can recommend is the development of your sixth sense—exposure.

The makers of the plate give one a good guide to start with—one second at F. 8 in full sunlight on a summer noon. This exposure naturally increases with the time of day and year. On a clear, sunny day in the autumn I found two and three seconds the equivalent. The Wynne meter is also very useful as a guide—in the open air. Indoors it is useless. In the summer time the sensitometer number is about F. 11. For twilight exposure I found that the time required to tint the paper was the correct time of exposure. Indoors the question becomes still more complicated. With bright sunlight outside, a portrait near the window, with shadows lighted up by a reflector, is fully exposed in about one and a half minutes at F. 8. The best guide I find

is to give forty times the exposure one would give on, say, film in summer; in the autumn and winter, from sixty to eighty times as much.

The plate gets its maximum advantage of rapidity in brightest light, and its sensitiveness decreases altogether of scale and proportion to the ordinary plate in dull light. The use of stops this becomes very evident, for the ratio of exposure with the diminishing of the aperture is sometimes double the ratio we are accustomed to give with ordinary plates. But even greater importance than this is the influence that the quantity of light has on the colour-rendering.

It is strange how little people seem to realise that colour change, and change drastically, according to the intensity of light. No less an authority than Mr. Braun, the celebrated photographer of paintings, has been quoted as saying that light on the picture that is to be copied has no influence on result. If one has not the powers of observation, a reference to any scientific work on colour would prove the falsity of such statement.

Some colours are actually changed by varying the intensity of light; for instance, bright orange seen in a very weak light assumes a brownish tone, yellow takes on a decided olive green cast, and vermilion loses its orange tone, and looks a purplish red. In fact, the whole tendency is towards blue, which tendency is then further exaggerated on the Autochrome plate. A portrait photographed indoors on a dull, gray day has a cold, bluish predominating; outdoors the result is sometimes so blue that one imagines the plate to have been exposed without a sensitiser. A portrait done with sunlight falling directly on the subject is full of golden amber tones. The tendency of the plate is to exaggerate these effects; and often in landscape the light and blue effect is made more luminous by this exaggeration of the warm and cold tones.

I have tried compensating for this, but have only been so far to change the predominant tone of blue to either a green or yellowish one. But undoubtedly light filters could be used to compensate more accurately. A very excellent scientific explanation of this change of colour sensitiveness was given by Brasseur in No. XX. of "Camera Work," and I was surprised to find the photographic Press take it up. It is one of the most important points in the question of colour photography, and even in painting it has played a rôle, coming in for a good deal of experiment with Monet, and explaining in an admirable manner the blueness of his London series. I think the change of colour of things by moonlight is largely dependent on the same matter of intensity of light, for the violet and blue tones are preponderant then, to almost the exclusion of the other colours.

Although the lens does not play a very important part in the rendering of colour, I have found a difference in the work of a colour-corrected anastigmat like the Goerz Celor, and an ordinary achromatic lens. But it is a difference of hardly any importance to any but the scientific photographer. A lens slightly uncorrected for spherical aberration, but corrected for chromatic aberration, like the Smith lens, gives the most satisfactory results. It masses the colour and the planes of the picture better than an ordinary lens, besides giving that soft envelope of diffusion which makes the plates at times seem bathed with light.

## Developments.

To a timid, unadventurous individual, the formulae accompanying the Autochrome plates, with its numerous finger-staining solutions, must suggest an elaborate



licated process. But in reality, as a process, it is—or can be—simpler than any other photographic process in use, and for facility and speed in the getting of results, it stands on a par with that delightful old process, the tintype. Giving any consideration of the Lumière method for the moment, all demonstrate this claim for simplicity by describing my method of working. The first development is made with sodium in a solution of one part in from six to twelve of water. The development is carried to the required point the plate is removed under the tap and immersed in the acid permanganate for about two minutes for reversal—as soon as it is in this solution the rest of the operation can be conducted in daylight. The plate is then rinsed again and put back in the original developer until blackened; then washed under the tap for about a minute, dried, and varnished. The entire operation of development and even the washing and drying, can be accomplished in less than fifteen minutes. It is very important that the development be done in a bright light, and carried as far as possible. The question of fixing is still an open one. Theoretically, there is nothing “fixable” in the plate, but a number of experts claim that, in spite of this, fixing is necessary. Personally, I have found such joy in a process that can eliminate the hypo bugbear, that I gladly accept the nothing-to-fix theory, and generally do without fixing. In using the silver intensifier, I subsequently fix, for obvious reasons. Plates developed and without fixing, to the light of a window since June last, have not shown a trace of change.

One goes about the first development of the plate like any other, and one controls the image in the same manner, such differences as there are becoming evident with knowledge of the plate's peculiarities, gained by a few trials. Judging the development by reflected light—that is, looking at the film surface of the plate during development—the motion seems like that of a much over-exposed plate.

The transmitted light in the early stages of the development it enables the action of an ordinary plate. Then it gets a gray veiled look, that seems to brighten a little later, which is correct development normally. In cases of under-exposure development can be continued until an apparent reversal is reached—that is, the dark parts seem more transparent than the light parts. I have experimented in no end of ways to carry the first development right over into a direct reversal by overdevelopment or by fogging, but the results are not equal to those obtained by the permanganate reversal.

A plate which is slightly under-exposed and then developed in sodium, 1:6, up to the point of reversal will give a brilliant, high-contrast image, with stronger blacks than an image developed in a normal developer to the same point. A plate a trifle overdeveloped and developed about two minutes in 1:10 solution gives a beautiful soft positive full of modelling and colour, even in the shadows, and devoid of any very strong lights. This method is particularly applicable in developing plates of subjects with a great range of tone and landscapes in crude garish sunlight. Plates of this kind can be made richer in colour, still keeping the beautiful gradation, by intensification—in fact, a thin greyish negative plate can be built up to fiery effects of colour, to the point of exaggeration. With some emulsions I found that the development of under-exposure gave very garish colour contrasts, between warm and cold tones, which can be very useful in certain instances. A figure photographed in the open air towards sunset with half the normal exposure and forced development, 1:6 Rodinal, to the reversal point, gave brilliant orange tones and intense pure blue shadows; the whole as unlike the colour to a plate made at the same time, with normal exposure and development, as a Monet is to a Corot, whereas in the first and strength they were really alike. The same experiment with pyro developer gave still greater contrast. Autochromes intended for lantern slides should be both fully exposed and developed to get a gradation all over. This will give a

clear, thin positive that can stand a great deal of intensification, which is necessary for most projection slides.

Intensification is certainly the step of the Autochrome process least understood, and consequently most misused. Pictorially speaking, it need be used but very little, unless the picture is to be looked at through some dark peephole arrangement, when an unintensified plate will look grey and bleached.

For the way the average Autochrome is shown, if it is properly exposed and developed, intensification is unnecessary. If, however, intensity of colour is wanted, the resources are certainly there. The garish false colour one sees in so many plates is purely due to too much intensification; whatever defect there is in the colour rendering by the plates, whatever incongruous colour arrangement may have been perpetrated, trust the intensification to make it obvious. But the same holds true of a beautiful harmony of colour. The stronger the colours the more beautiful they seem and the more vital becomes the harmony. The simplest manner, of just slightly building up the image, is by immersing it in an Agfa intensifier, 1:15, for about a minute. This solution can also be applied locally with a soft camel's hair brush, to intensify a colour or build up a black, but its capacity is a limited one. Where a rich dark effect is desired the mercuric iodide is capable of very beautiful results. It also slightly changes the general tone, making it warmer and more golden—carried to its extreme limit in portraiture, one can produce the golden luminous glow that varnish gives to an old master.

Another great point for the mercuric iodide is that its darks are never opaque, as with the nitrate of silver or mercury. If the mercuric iodide image is still not intense enough, it can be further built up by a weak solution of bichloride of mercury, followed by a blackening in a developer. In extreme calls for blacks ammonia may be used to re-blacken, with astonishing results—but this makes the emulsion very brittle, and it shows a tendency to crack in a short time. Where a regular building up of the image is desired the Lumière nitrate of silver intensification is the best—and the only one to be recommended for lantern slides.

For reducing a weak solution of the acid permanganate bath is very satisfactory— $\frac{1}{2}$  ounce of acid permanganate in 16 ounces of water. But the hypo-ferricyanide reducer is better when the image is very flat, as it has the tendency to act more strongly on the high-lights. But any reducing other than what might be called a clearing up of the high-lights should be avoided, as the delicate colours are sure to suffer. However, under-exposed plates which would ordinarily be useless can sometimes be saved by clearing and then intensifying. The black spots which occur only too frequently in the plate can best be removed by touching them on the dry plate with a fine brush dipped in a strong hypo-ferricyanide solution. If they are reduced too far, it is easy to build them up again with a little colour. For the retouching of light spots a little lampblack water-colour will nearly always answer the purpose. I prefer to do this spotting before the negative is varnished, as the retouching is fixed in this manner.

It is astonishing how easy it is to do local reducing on the plate, and the professional photographer who is worried about moles and wrinkles can remove them as readily as he can on a black and white negative. This work is all done on a dry positive placed on a suitable retouching desk. The brush, dipped in the reducer, is shaken to remove excess liquid, and then the line or spot is brushed over or stippled. As soon as the reducer has acted sufficiently, blot it off with a good blotter, being careful not to slide or pull this; or the film will be torn at once. This process can be repeated till the desired effect has been obtained; naturally the plate is well washed after this.

The acid permanganate bath is best made up fresh every day or two, or it is apt to spread a disagreeable deposit on the film during the reversal. To facilitate this it is well to make up a very strong stock solution, by dissolving one-half ounce of per-

manganate of potash in sixteen ounces of hot water. For use take two ounces of this stock solution to a quart of water and add a quarter of an ounce of sulphuric acid.

The general colour of a plate can sometimes be helped by dyeing a cover glass to a pale tint of yellow. But this, as well as many of the after treatments I have referred to before, are dangerous tricks in the hands of the tyro. They are only intended for special purposes, or to save a plate that cannot be done again.

The varnishing of the plate is a factor of great importance, for the varnish acts as a protection to the thin, delicate emulsion, and makes the image brighter and more transparent. The gum dammar varnish has many disadvantages. It gets sticky with heat, and never seems to get absolutely dry. A celluloid varnish, Zaponlac, has the advantage of more completely isolating the film and of being insensitive to heat, but I have found this had a tendency to lift off the emulsion on some plates. The chief point in favour of the dammar varnish is the facility with which it can be removed, and its quick surface drying qualities. For lantern slides the celluloid varnish is best.

#### Concerning Artificial Lighting.

One of the most interesting sides of Autochrome photography, and one that does not seem to have been considered at all, is colour photography by artificial light. The use of flashlight makes instantaneous colour photography on Autochrome plates possible. The colour-screen supplied by Lumière gives a brilliant monochrome orange colour image by flashlight, very much the same colouring that some painters employ in lamplight effects. In this way it can be used very advantageously in combination with daylight. Popular and sentimentally realistic twilight effects could no doubt be produced by giving an exposure in full daylight, slightly less than normal, on a figure subject near a fireplace, for instance, and just at the end of exposure setting off a flash that has been arranged in the fireplace. The lens must be covered immediately, because the model is sure to jump and the room to be filled with smoke. I have tried nearly all makes of flashlight powder, and find the Agfa powder most satisfactory, giving least smoke and requiring least powder. The amount required is about ten times that used on an ordinary plate. Aside from the use of the flashlight for "realistic firelight glows," it can be used advantageously in many ways to produce warm reflections on an arrangement, in connection with daylight—this of course depending entirely on the judgment and taste of the photographer. I have made a great many experiments with a view to photographing in natural colours by flashlight and feel confident that much can be done in this way. Naturally, the regular screen is unsuitable for the purpose, as its absorption and compensation is calculated for white light—daylight—which flashlight does not equal. Of several dozen screens, that I have made and tried with all sorts of dyes, those made with Flavine, Chrysophenine, and one with Filter Yellow K, Hoechst, give

the best results. A slow plate is fixed, washed, dried, and then stained in a weak solution of one of the above dyes, by immersion for a few minutes, after which it is rinsed and dried. It is well to make a number of screens, of different intensities, and try them. A very pale screen is sufficient—it is best to make it on two glasses, as that will equalise any unevenness in the dyeing. The Filter Yellow K can be used lighter than the Chrysophenine, and it has the additional advantage of more completely cutting off the ultra-violet rays. I have made portraits in this manner that are remarkably true in colour rendering.

Naturally, these indications are but tentative, and thus of interest to the pictorialist only. The further development of the subject I must leave to abler and more scientific minds. The addition of one of the above mentioned screens to the regular Lumière screen, in daylight photography, gives some extremely interesting effects, with slight increase in exposure. The tendency is to make the colour warmer and richer.

I have often wondered why some one did not market suitably adjusted panchromatic collodion emulsion, with which one could coat spoiled plates, and thus use them again. It seems a pity to waste those beautiful screen plates, of which I have hundreds that have been used merely in endless experiments, which the wonderful fascination of this process has led me to make.

As regards the printing of Autochromes, the three-colour process affords no end of possibilities, such as gum, carbon, and pinatype. But other simple processes are under way, and the practical solutions of the problem are nearer at hand. I shall leave any more definite reference to the printing process for another article, when my own experiments have been more complete. But one thing we must not lose sight of; it is futile even to expect any process on paper, or other substance that presents the picture by reflected light, to give an exact reproduction of a colour transparency, any more than a painting on canvas can represent the effects of a painting on glass. In this way the screen plate will always possess value and beauty that are not to be copied—and colour that can not exist on paper. Furthermore and of particular interest pictorially is this fact: that what may appear very beautiful as a transparency, may when transferred to paper be absolutely horrible, for the richness and purity of the colour produced by transmitted light admits of colour arrangements that would be impossible, if attempted in the dull tones that reflected light would make of them.

There are colour harmonies which can only be indulged in when colours as luminous as in enamel or stained glass are available—such combinations are possible on Autochrome plates. This is one of the direct facts that point to colour harmony as the vital element to strive for in Autochromy. Personally, I have no medium that can give me colour of such wonderful luminosity as the Autochrome plate. One must go to stained glass for such colour resonance, as the palette and canvas are dull and lifeless medium in comparison.

EDUARD J. STEICHEN.

THE GERMAN PHOTOGRAPHERS' UNION will hold its thirty-seventh ambulatory meeting at Posen, from August 24 to 28 this year. There will be, as usual, connected with this meeting, a photographic exhibition, under the patronage of Her Majesty the Empress and Queen Auguste Victoria. The exhibition, to which every one will be admitted, will find, through the courtesy of the Governor of the province, Dr. Von Dziembowski, a suitable accommodation in the Kaiser Friedrich Museum (Professor Dr. Kaemmerer, Director). It will also be open to the general public till September 13. There seems to be every prospect that this new enterprise of the Union, which held its last year's meeting in Bremen, will prove a success. The programme, which will shortly be ready, will be forwarded gratis on application to the President of the German Photographers' Union, Karl Schwier, Weimar.

IMPROPER PHOTOGRAPHS.—At Tower Bridge Police Court last week Percy Thorm, manager at the establishment of Pastimes (Limited), London Road, Southwark, was summoned by Chief Inspector Drew of New Scotland Yard, for exhibiting a number of improper stereographic photographs in automatic cabinet machines. Mr. Charles Chapman said that it was a clear case, but he did not wish to send the manager to prison, because he did not think he was responsible. The maximum penalty of £25 and five guineas costs would be imposed.

LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.—On April 16 a demonstration of polarised light will be given by Mr. J. Briggshaw. This will be a special ladies' night, and visitors are sure to receive a hearty welcome at the meeting rooms, the Old Napier Tavern, 25, High Holborn, W.C.



## CARBON PRINTING IN THE TROPICS.

Those who work the carbon process at ease in this country have little conception of the difficulties that have sometimes to be faced by those who employ it in the tropics. Here all is plain sailing, as our temperature, except perhaps during an exceptionally hot day in the height of the summer, is not likely to bring about serious trouble. The case, however, is very different in many other places where the temperature reaches a very high degree, and at the same time is accompanied by great humidity in the atmosphere, as, for example, during the rainy seasons. At other times, when the air is abnormally moist, the tissue often becomes so brittle that it can scarcely be handled without the film cracking, unless it be specially made for such climates, and contains an extra amount of glycerine, or some such substance, to counteract the brittleness of the sensitive coating. A few hints on the subject of carbon printing in tropical climates may be of service to some of our readers who are workers of this ever-popular process in our countries.

### Instructions for Exporting Tissue.

Some troubles with the tissue itself will be first alluded to. The manufacture of carbon tissue is almost impracticable in tropical countries. As a rule, the tissue is imported from Europe, and mostly from England. On ordering, instructions should be given that tissue be packed in zinc-lined cases, which should be soldered down. Gelatine, as is well known, is an absorbent of moisture, and when at all damp is very prone to become mouldy. I have seen carbon tissue, as well as dry-plates, that have been returned from India entirely useless through mildew, although they were sent out in metal-lined cases. The actual cause of the deterioration was that the gelatine, when the plates were packed, was not thoroughly desiccated, hence, with the aid of the mildew germs that were in it germinated. It was the same with the carbon tissue. In exporting carbon tissue, the cases containing it should be specially labelled that they must be stored aboard in a cool place. When carbon tissue, by improper storage, has become mildewed, the mould can be wiped off and leave no apparent stain behind, yet when prints are made upon it the spots are sure to show. In short, it is useless to attempt to use tissue once it has become mildewed. When the tissue, properly packed, arrives at its tropical destination, its proper storage should at once receive attention. Should it happen during the rainy season the tissue may rapidly deteriorate, if not entirely worthless, through mildew. It should be transferred without delay to metal tubes or cases, and the latter made air-tight by sealing them with paper, or, better still, with an indiarubber surgical plaster, which is impervious to moisture.

Carbon tissue is always exported in the insensitive state, and sensitising of it at tropical temperature is one of the chief difficulties in working the process. It may happen that if a roll of tissue has been kept in an exceptionally hot and dry place it becomes so brittle that it cannot be flattened out without coating cracking. In such a case the best way is not to attempt to flatten it out, but to re-roll off about as much as is desired to sensitise, cut that off, and put it in a damp place where it becomes just sufficiently pliable to be conveniently handled.

### Precautions in Sensitizing.

It usually happens in places where high temperatures prevail that a plentiful supply of ice is procurable. In this case the sensitising-bath can be cooled down to a low temperature for use, either by surrounding the bottle containing it with ice some distance before it is required for use, or by putting ice in the solution. When this plan is adopted the bath should be made suffi-

ciently strong in the first instance to compensate for the dilution when the ice has melted. The temperature of the sensitising solution should be brought down, if possible, to 40 deg. or 45 deg. F., and the fingers put into it as little as possible. An important point to bear in mind is that the solution is absorbed by the gelatine much more rapidly when the temperature is high than when it is low, therefore a shorter immersion must be given to allow for the difference. After the tissue has been sensitised there comes the difficulty of drying it without the coating running off the paper, particularly when the air is nearly saturated with moisture. Gelatine is more soluble in a solution of bichromate of potash than it is in plain water at a similar temperature, a fact which obviously increases the difficulty in sensitising and drying the tissue in very hot weather.

### Spirit Sensitizers.

The difficulties involved in sensitising and drying carbon tissue may, however, be quite overcome by employing a solution that contains a very small proportion of water and a large one of spirit. Such a solution has but slight solvent action on the gelatine, and dries very rapidly. A good sensitiser for the purpose stands as under:—

Bichromate of Ammonia .....	6 grams.
Water .....	60 cc.
Methylated spirit .....	140 cc.

The bichromate is first dissolved in the water, and the spirit afterwards added a little at a time with constant stirring. This will give, roughly, a three per cent. solution of the bichromate of ammonia.

Or the following may be used:—

Bichromate of potash .....	6 grams.
Water .....	90 cc.

When dissolved add liquor ammonia until the solution becomes quite pale in colour; then add gradually 100 cc. of methylated spirit. This gives practically a three per cent. solution of the potassium salt. It should be mentioned that a very good form of spirit sensitiser is supplied by the Autotype Company.

The solution is applied with a "Blanchard Brush," which is simply a plate of glass with a piece of swan's down, or flannelette, doubled over one end and secured with an indiarubber band. A little solution is poured in a small dish, and the brush moistened with it, and then passed over the tissue, first lengthwise and then crosswise, so as to equalise the coating. The tissue may then be hung up, when it, in hot weather, will dry in ten minutes or so, and then will be ready for use. As the spirit has no solvent action on the gelatine, and there is so little water present, there is no risk whatever of the coating running. In this way quite large pieces may be sensitised without fear of brush markings showing, as the small quantity of the spirit sensitiser does not penetrate deeply into the coating, and it is only the mere superficial layer that is necessary to form the picture. I have sensitised pieces of eighteen and twenty inches, using an old half-plate negative to form the brush, with perfect success.

### Transferring.

It is imperative that the water used when transferring the exposed tissue to its support should be at a low temperature. Here ice may become necessary, and it must be kept in mind that gelatine absorbs warm water more quickly than it does cold; therefore only a short immersion should be allowed. Also, when the tissue is put upon the support, it should be well squeezed, so that as much water is removed as possible. When the exposed tissue has been got on its support the chief difficulty in working the carbon process at high temperatures has been overcome, and the remaining operations are quite plain-sailing.

When, however, the double transfer method is employed a later

trouble may possibly crop up in the following way:—Should the picture, on its temporary support, have become abnormally dry, there may be a tendency for it to split off before the transfer paper is applied. This, of course, may be avoided by not letting it get into that state, or, more certainly, by passing it through

water to which a very little glycerine has been added as soon as it has been rinsed after the alum bath. This will effectually prevent the picture reaching the splitting-off stage, and the glycerine will, for the most part, be washed out when the prints are being transferred to their final support.

E. W. FOX

## THE MODERN NOTE IN THE DESIGN AND FITTING OF PHOTOGRAPHIC PREMISES.

### IV.

[Under this title we continue, with the following article, a series of chapters by Mr. Drinkwater Butt, F.R.P.S., on the principles which should guide the photographer in the external design and decoration of his place of business, and in the arrangement and appropriate equipment of its various apartments. Photography, being essentially an "artistic business, taste and style need to be more in evidence than is necessary in businesses which are frankly and wholly commercial in their character. Therefore, while it is not possible to prescribe any plan which can be followed in particular cases, general rules can be laid down in such a way that a photographer can take advantage of them in giving his establishment, both outside and in, an air of distinction, which is bound to carry weight with his townspeople, and must turn out to his commercial advancement. Of course, a fortune may easily be squandered on such adornment of the studio, but in these articles Mr. Butt will confine himself to such schemes as a photographer in a moderate way of business need not consider beyond his means. Moreover, the articles will be of assistance in pointing out how particular materials may be used, even on the smallest scale, in adapting or improving existing premises. The notes will conveniently be divided into four sections:—

Shop-front and Show-case.

The Reception-Room.

The Studio.

Planning complete Premises.

The last chapter will consist of a description of as complete a set of photographic premises as can be imagined—a establishment, in fact, which but few living photographers would feel justified in putting up. Yet the scheme in its various parts can be commended to the study of even the small photographer, on account of its detailing arrangements, which can be abstracted in pieces from their surroundings and utilised with advantage in businesses which are anything but magnificent in size.—EDS. "B. J."]

#### A Suggested Reception Room.

To pass on to the remainder of our illustrations, we may next turn to the line drawing which I have made to embody some of

the principles, which I have endeavoured to also put into words. It is No. 12 of our cuts, and is a suggested arrangement of a reception room which forms part of the complete photograph



Fig. 12.—Arrangement of a Reception-room.



premises, the design of which will be dealt with in the last article of this series. In it I have intended to show how such an apartment might be furnished with a few antiques, such as any amateur might occasionally be able to pick up, as, for instance, the gate-leg table and the seventeenth century arm-chair shown to the left of the drawing, together with other furniture of modern make, such as that shown on the right hand side, some of which has been sketched in the show rooms of Messrs. Liberty and Co.

This room is really lighted from the side which is out of the picture, as well as from the window at the far end. It also



Fig. 13.—The Galleries at Messrs. Speaight, Limited, New Bond Street London, W.

ould receive some light through the opening on to the stair case wall; while it may also be noted that shaded reflectors are provided for throwing the electric illumination on to the work on the walls, in addition to the electrolier over the table in the centre and the shaded lamp on the receptionist's desk. These electric light fittings would be executed in beaten copper or polished bright iron, as best harmonised with the general colour scheme chosen for the whole.

It may also be noted that the walls are not overcrowded with specimens, a single line running round on the sight level, with a few larger ones above. The smaller examples are in frames

on the tables and cabinet, and others might be stored in the cabinet, or kept in specimen books or folios for ready reference.

The general design of the whole, and the few decorative features are of a simple and almost severe character, the relief to which would be principally in the smaller and more portable objects, such as the curtains, draperies, cushions, vases, etc. One would, of course, also introduce, as occasion and the season of the year allowed, some quantity of flowers, flowering plants, and shrubs, but never to the extent, as I have sometimes seen done, of making the place look rather like the show room of a florist than that of a photographer.

As regards general colour, one might suggest cream for the ceiling, with the cornice and frieze of the same slightly relieved with buff and dull yellow; the walls covered with a brown paper, with a dado of stronger brown canvas or matting, the woodwork of a dark warm brown, the floor of two shades of polished oak parquet, and the curtains and carpet in dull blue, ochre, and dull red, as also the furniture fabrics generally. The window would be of white glass to give the maximum amount of light, while the black beech chair to the left and the almost black oak of the gate-leg and small table to the right would give agreeable spots of dark contrasting tint. The appropriate inscription on the frieze might be done in dull red or gold, while the larger coloured specimens would be in gold frames, and the smaller and monochrome ones in brown, black, or white, as best suited the subject and process of each. It will thus be seen that the general effect would be sober and subdued, the few touches of brightness necessary for relief being obtained, as suggested, by the flowers and their vases, the lounge cushions, etc.

As our other illustrations, Figs. 13 and 14, we are very pleased to be able to give, by the special courtesy of Messrs. Speaight, two photographs of their reception galleries at New Bond Street. These galleries, which are certainly the finest in London, if not, indeed, in the world, will well repay study by photographers desirous of improving their own premises, for although all, of course, cannot go to the outlay which has here been made (the site and buildings here being worth at least £100,000), yet the principles of good taste and architectural fitness involved can be applied to work of even the smallest cost.

Study of our illustrations will show that although the decorative architectural features are, as befits a building of this size and importance, of a pronounced character, they are yet somewhat severe and simple in style, the late Renaissance period chosen being used with dignified restraint by the architect, Mr. C. H. B. Quennell, while the fine workmanship of the whole pleases the cultured taste and reflects the greatest credit upon the various firms who were engaged in the construction. The woodwork is of wax-polished oak, with only just sufficient carving in the caps of the pilasters, and on a screen under the roof (not seen in our illustrations), to relieve the general plainness; while the large restful surfaces of the walls and the almost plain vaulting of the ceiling should be especially noted as giving dignity to the general effect. In the whole place there is an absence of the restlessness, glitter, and garishness which characterise so much modern work, and which render it usually so very unfit for the surroundings and setting of works of art. The walls are covered with a paper reproduced from an old Florentine brocade design, admirably suited for the purpose; and the whole of the furniture, including the valuable Persian carpets on the polished oak floors is composed of genuine antique pieces collected by Messrs. Speaight over a considerable period of time. One of the latest additions, seen on a late visit, is a beautiful old harpsichord, which was being renovated and made fit to take its place as almost artistic and charming studio accessory. It should also be noted that the display of specimens is not large, a single row of framed enlargements running round the

walls, and a few smaller examples of work standing on the various antique cabinets placed beneath. The other specimens

present, I have only to add that the next article of this series will deal with the fitting and furnishing of the studio, and b



Fig. 14.—Messrs. Speaight's, Limited, Galleries: The Oak Staircase.

are kept in very neat and pleasing brown leather cases upon tables which do not appear in our illustrations.

Taking leave of these fine premises and of my readers for the

illustrated with reproductions of work designed by and executed for the author.

DRINKWATER BUTT, F.R.P.S.



## CONVERSATIONS ON COPYRIGHT.

**COPYRIGHT.**—The sole and exclusive right of copying, engraving, reproducing, and multiplying any photograph, and the negative of by any means and of any size.—Extract from the Copyright (Works of Art) Act, 1862.

In the two previous articles we have come to an understanding of how copyright is created and how ownership of it is secured, also the rights of such ownership; and, II., the formalities to be observed in registration, i.e., the formalities of proprietorship in copyright, without which the rights conferred by the Copyright Act are not legally obtained. We must now discuss the sale and part-sale of copyright,

and learn what precautions are necessary in granting rights of reproduction and in transferring a copyright from one person to another. The succeeding conversations will deal with the important questions of infringement of copyright, and with the privileges of owners of copyrights as regards foreign countries.

### III.—SALE AND PART SALE OF COPYRIGHT.

As I have gathered from our previous conversations, the right in a photograph is created by certain acts, and is established by certain formalities. I suppose, therefore, the Act suggests that copyright is something which can be bought and sold like other rights or privileges?

Certainly; the Act expressly refers to copyright as "personal or movable estate" assignable at law by licence or other legal document.

Written document? Cannot permission to reproduce be given verbally?

No; under the Act all licence to use or copy a copy-work "shall be made by some note or memorandum." Special clause of the Act (3) lays this down as an invariable

rule. But is a written permission needed on every occasion, for example, the case, say, of a photographer sending photographs to an illustrated paper?

It may not be necessary, if there is a standing agreement between the photographer and the publisher, but as the values of photographs for reproduction are very different, depending on a subject and the number of photographers who have taken it, it is advisable to draw up a licence in every case. A form of licence adopted by the Professional Photographers' Association is as follows:—

MESSRS. PEARSWORTH,

Of Carmietta Street, London, W.C.

In consideration of the sum of 10s. 6d., receipt hereby acknowledged, you are hereby authorised to reproduce by any process, in black and white, my copyright photograph of the *North Pier*, in the "Daily Herald," the reproduction not exceeding 6 x 5 inches, my name as the photographer to be printed under each impression, and a proof copy of the reproduction to be supplied immediately on publication. This licence is only for the purpose specified, for one issue only, and the reproductions may not be sold as independent pictures separate from the publication and its accompanying letterpress. The licence is not transferable, and no block or electro of the subject may be sold or disposed of without my written permission.

Dated this 27th day of March, 1908.

(Signed) F. WERNER,

Jacksonville.

I see here that the licence grants reproduction in one form only, implying, I suppose, that the photographer cannot grant as many separate permissions to reproduce as he

A.: Most decidedly he can. He can sell the sole copyright outright (with or without the negative, though usually the negative is included in such a purchase), or he can split up the copyright in various ways and dispose of the parts—that is to say, make limited assignments of the copyright—in every case in writing.

Q.: Perhaps you can give me an example of this subdivision?

A.: Well, in the case of an attractive portrait subject, a photographer might sell to other persons or firms:—

Right to reproduce in daily papers.

" " in weekly papers.

" " in books.

" " as photographic postcards.

" " as coloured (printed) postcards.

" " as posters or window bills,

which latter, again, might be further distributed among various distinct trades. In these cases, the person to whom permission was granted would have the right only for the specific purpose mentioned in the memorandum to him.

Q.: I see from this that it is necessary to define exactly the right which is being granted?

A.: Exactly; the licence should grant permission for a particular purpose, nothing more. For example, a form of permission such as:—

*Received of Mr. R. Meadows, the sum of 10s. 6d., for the right to reproduce my portrait of Lord Roberts.*

F. MORTON.

gives the purchaser (Meadows) the same rights as those of Morton, the proprietor.

Q.: Referring to the form of licence recommended above, is there any special object in naming the process and size of the reproduction?

A.: The reason is that it is usual to charge a higher fee for reproduction in the case of the more expensive processes, such as photogravure or three-colour. It is fair to assume that a photograph to be reproduced by one or other of such processes is worth more than one to be multiplied in half-tone only.

Q.: Also, the photographer's name is to be mentioned. I should like to ask if there is legal reason for this stipulation?

A.: No; none at all. The mention of the name is usually regarded by the photographer as his due, but he risks nothing by allowing it to be omitted. Many papers give preference to a photograph which they need not acknowledge to a photographer, but can ascribe, say, to their "own photographer."

**MARKS ON BROMIDE PAPERS.**—This is a subject of ever-growing interest to photographers, as the black streaks and markings appear, more particularly on glossy postcards, very much to the detriment of the prints and sometimes quite spoil them. Pressure and with any hard object or substance causes the coated paper to show these markings, as Professor Namias observes in the last issue of Eder's "Jahrbuch der Photographie." According to experience, carried out by the author, the keeping qualities of bromide paper depend to a very large extent upon the nature of the substrate, or under layer, the usual baryta and gelatine coating being of great importance. Glossy bromide paper, which is far more susceptible to

markings than matt, is coated on "baryta paper," and the emulsion is prevented by the heavy substratum from sinking into the pores of the paper, and the finished product seems for this reason to be more sensitive to friction. The usual remedy is, of course, to rub the dry prints with a piece of wadding moistened with Columbian spirit, but it is obviously easier to avoid the markings altogether if possible. Rubbing one piece of glossy paper against another in taking it out of the packet is sufficient to cause an "electric streak," and careful avoidance of friction is to be recommended throughout, in order to prevent what seems to be more or less of an accepted trouble with this class of paper.

## EXPOSURES IN ENLARGING.

(A paper read before the South Suburban Photographic Society by Mr. John Nixon, hon. secretary of the society.)

THERE is a curious consensus of opinion amongst the experts as to two points in connection with enlarging. They insist (i.) that it is impossible to determine the correct exposure in enlarging except by trial and error; and (ii.) that the exposure in enlarging by lantern does not follow the same law (if there is a law) as the exposure in enlarging by daylight. The first of these dogmas I have disproved practically by constructing an exposure meter, which gives the correct exposure with a daylight enlarger and diffused daylight, or with a properly constructed lantern, using a source of light large enough to give an evenly illuminated image of itself at the conjugate focus of the condenser, such image not being less in diameter than the working aperture  $a'$  of the lens. The second dogma I have similarly disproved experimentally in the case of incandescent gas illumination. Possibly it may hold good of certain kinds of lantern, especially where the source of light (a single filament Nernst, or a small arc light, for example), happens to be so small as to give a conjugate image at the lens, which fails to cover the working aperture. Where this happens even illumination of the disc can only be obtained by shifting the source of light so as to throw the actual conjugate image produced by the condenser behind the enlarging lens, the latter being thus taken to a point in the cone of rays near enough to the condenser to fill the working aperture with the blurred out-of-focus image. Naturally, the position of this point varies with the distance the image falls from the condenser, since the farther the image may be from the condenser the more attenu-

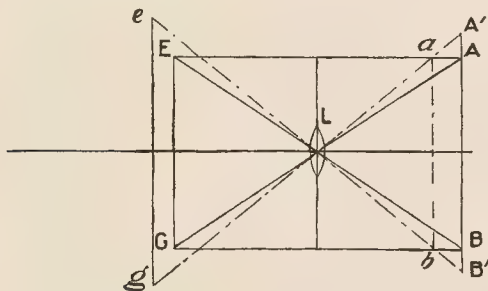


Fig. 1.

ated the cone of rays must be, and the farther along this cone must the lens be moved to find a sufficient body of illumination.

Theoretically, as well as practically, when the lantern is properly constructed and the light fulfils the condition above-mentioned, the exposure in enlarging with a lantern should always vary in accordance with the same general law as the exposure in enlarging by daylight. The latter may be deduced from Figure I.

Here A B represents the negative and E G the enlargement when the latter is of the same size as the negative, L being the enlarging lens; and  $a b$  the negative when the enlargement  $e g$  is to  $t$  diameters. If the amount of light passing through the lens were precisely the same for all sizes of enlargement, that amount of light would in each case be spread over the area of the enlargement, and the intensity of the light falling upon each area would naturally be inversely as the square of its diameter if all were circles, or the square of its side if all were rectangles. The exposure under these conditions for a  $t$  times enlargement would be the exposure for an equal size enlargement  $\times t^2$ . But the amount of light passing through the lens is not precisely the same for any two sizes of enlargement. It is evident that for an equal size enlargement (Fig. I.) the light passing through the lens is roughly that contained within the angle A L B, while the light passing for a  $t$ -times enlargement is that contained within the angle  $a l b$  or  $A_1 L B_1$ . The relative amount of light contained within these angles is roughly in proportion to  $A B^2$  and  $A_1 B_1^2$ , that is, to  $D^2$  and  $d^2$ , where  $d$  and  $D$  are respectively the distances between L and  $a b$  and L and

A B. But  $d$  is  $\frac{(t+1)f}{t}$  where  $f$  is the focal length of the enlarging lens and  $D$  is  $2f$ . Hence the intensity of the light passing through the enlarging lens for a  $t$ -times enlargement would be roughly

$\frac{4t^2}{(t+1)^2}$  times the intensity of the light so passing for an "enlargement" of equal size.

Correcting the result already obtained on the assumption that the light passing through the lens was constant for all sizes of enlargement, it is evident that, for a  $t$ -times enlargement, the true exposure (which varies inversely as the intensity of the light) should be, not  $t^2$ , but  $\frac{(t+1)^2}{4t^2}$ , or  $\frac{(t+1)^2}{4}$  times the exposure for an "enlargement" of equal size.

In enlarging with a lantern the problem of exposure presents different data, but, curiously enough, works out to the same result provided the lantern satisfies certain conditions, usually obtaining when the source of light is sufficiently large to give an evenly illuminated image at the conjugate focus of the condenser (where the enlarging lens is situated) of a diameter not less than that of the working aperture of the lens.

Where the source of light is an incandescent mantle or a three-filament Nernst lamp, with a ground glass globe to suppress the

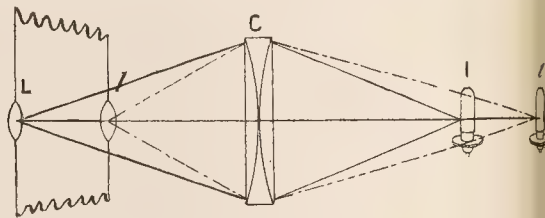


Fig. 2.

separate images of the filaments, the exposure in enlarging follows the same rule as in the case of a daylight enlarger. With such an enlarger, if properly constructed, and if the enlarging lens is suited to the condenser, an image of the light should be thrown upon the enlarging lens by the condenser, when the apparatus is properly adjusted for any size of enlargement. This involves a variation in the position of the source of light, which in turn varies the intensity of the light passing through the enlarging lens. The problem is to calculate the extent of this variation.

Figure II. shows what happens when the adjustment is altered from that for an equal size "enlargement" to that for a  $t$ -times enlargement. For the former, C represents the condenser, L the enlarging lens, and I the light. For the latter, these are respectively C,  $l$ , and  $i$ . The distance between L and C is thus  $2f$ , where  $f$  is the focal length of the enlarging lens; and the distance between

$l$  and C is  $\frac{(t+1)f}{t}$ . It is evident that in moving the source

light from I to  $i$  the intensity of the light falling upon the condenser will vary inversely as the square of the distance between the condenser and the light. Calling the distance between C and I,  $D$ , and that between C and  $i$ ,  $d$ , this proportion may be expressed  $\frac{D^2}{d^2}$  and the intensity of the light passing through the enlarging

lens would vary in that proportion were it not for another factor which modifies the variation. This factor is the variation in the size of the image of the source of light at L and  $l$ , brought about by the adjustment. Assuming the light passing through the condenser to be the same in both cases, the intensity of the light



forming the image at  $L$ , as compared with that forming the image at  $L$ , will vary inversely as the square of the diameter of the image. Now the diameter of the image at  $L$  is practically the diameter

of the source of light  $\times \frac{2f}{D}$ , and the diameter of the image at

is practically the diameter of the source of light  $\times \frac{(t+1)f}{D}$ .

Hence the ratio of intensities due to variation in the size of the

image becomes  $\frac{4f^2 t^2 D^2}{(t+1)^2 f^2 D^2}$ , or  $\frac{4t^2 D^2}{(t+1)^2 D^2}$ . Combining the two factors

thus obtained, viz.,  $\frac{D^2}{d^2}$  and  $\frac{4t^2 D^2}{(t+1)^2 D^2}$ , we find that the intensity of

the light passing through the enlarging lens when the enlarger is adjusted for a  $t$ -times enlargement, is equal to the intensity of the light so passing for an equal size "enlargement," multiplied by

the factor  $\frac{D^2}{d^2} \times \frac{4t^2 D^2}{(t+1)^2 D^2}$  or  $\frac{4t^2}{(t+1)^2}$ . If the light passing through the

enlarging lens were always of the same intensity the exposure for  $t$ -times enlargement would (as with a daylight enlarger in similar circumstances) be  $t^2$  times the exposure for an equal size "enlargement." Since, however, this light, instead of being constant, varies

intensity in the ratio  $\frac{4t^2}{(t+1)^2}$  the exposure must vary inversely in

the ratio, and the factor for exposure, from being  $t^2$ , becomes  $\frac{t^2 t + 1}{4t^2}$

$\frac{t+1}{4}$ , that is to say, the same factor as we obtained in the case

a daylight enlarger. The accuracy of this result for all practical purposes I have tested with a gradometer, and have found it sufficiently correct. Based upon the conclusion I have constructed a meter which, combined with any reliable densitometer, gives a true enlargement from any suitable negative. But the factor and meter both fail to give accurate results directly the image of source of light thrown upon the enlarging lens by the condenser becomes smaller in diameter than the working aperture of the lens.

The exposure meter for enlarging, above referred to, is constructed upon the sliding scale principle, and is based upon a scale of light intensities working, for daylight enlarging, with a test paper of same speed as the Wynne meter. The exposures indicated vary with the speed of the plate or paper, the aperture of the lens, the number of times of enlargement (linear), and the density of the negative. The latter may be measured with a Dawson's densitometer, or, more accurately still, with an ordinary gradometer having numbered tints. Use with a lantern the Wynne meter, or the test paper used, may be dispensed with, and the actinic value of the light ascertained by using backward with the enlarging meter. A negative of known density (according to the densities used) is placed in the carrier, by the usual method of trial and error, the correct exposure obtained for an enlargement of equal size. The density number of negative on the meter is then set to that exposure figure, the aperture (on the meter) to the "Times of Enlargement," "1," the paper speed (known) will then appear opposite the correct value. So long as the same light is used, with ordinary care, to obtain the same efficiency, the figure so obtained may be used as, for practical purposes, the actinic value of the light for enlarging. And it is desired to work with any particular gradometer, say a Wynne-made one, the operator simply uses it in the carrier as a test paper, and gives, say, 12 (or 18) different exposures on so many of, say, Wellington bromide, for equal sized "enlargement," the exposure corresponding with the successive figures in the exposure column of the enlarging meter, as indicated for the twelve densities of Dawson's densitometer (with, say, three extra at each end of the series to make eighteen). He develops these equally, and marks in the column of densitometer numbers, opposite each figure given, the number of the tint which printed out from the exposure. The same exposure may be trusted always to give the correct print from a negative of the density which would print that tint, if tested with P.O.P. as for carbon printing. The figures in the meter are so arranged that, by moving the proper

scale, the exposures for any required size of enlargement are also indicated with equal accuracy. It must be understood, however, that this accuracy can only be assured by using apparatus of the kind indicated, and by making certain, when adjusting the light, that the sharpest possible image of the source of light is thrown upon the enlarging lens. This caution is the more necessary, as it will be found that the light may be moved a considerable distance from the point where that condition is satisfied, without affecting the even illumination of the disc, though probably with some diminution in the intensity of the illumination. The latter, of course, might make a material difference in the time of exposure.

JOHN NIXON.

## EASTMAN KODAK COMPANY, OF NEW JERSEY.

THE report of this company for 1907, and balance sheet as at December 31 last, have just been issued. The results of the year exceed the previous records of the company. The net profits, after making provision for depreciation on buildings, plant, and machinery, and after writing down the investments by \$61,856, as well as setting aside a sum of \$154,639 to augment the special fund for the renewal of plant, amount to \$1,291,839, as against \$1,013,546 for the previous twelve months—an increase of \$278,293.

Dividends of 6 per cent. upon the preferred capital and 25 per cent. upon the common have been distributed, leaving \$206,996 to be added to the undivided Surplus Fund, increasing it thereby to \$1,152,199. In addition to this surplus there are now special reserves amounting to \$500,535, making the surplus profit a total of \$1,652,734.

The earning power of the company shows a steady increase, as will be seen from the following statement of annual earnings:—

Year ending December 31, 1895	\$49,656
" " " " 1896	122,676
" " " " 1897	185,232
" " " " 1898	243,232
" " " " 1899	335,919
" " " " 1900	465,816
" " " " 1901	517,347
" " " " 1902	564,455
" " " " 1903	606,740
" " " " 1904	688,484
" " " " 1905	827,610
" " " " 1906	1,013,546
" " " " 1907	1,291,839

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for Patents have been received between March 30 and April 4:—

- CINEMATOGRAPHS.—No. 6,983. Improvements in optical lanterns for cinematograph displays. George Robson, 21, Rochdale Road, Leyton, Essex.
- PRINTING.—No. 7,001. Improved printing device. Charles Jennings Hillman, 149, Strand, London.
- CAMERAS.—No. 7,061. Improvements in photographic cameras. George Lloyd Moore, 35, Temple Row, Birmingham.
- FILMS.—No. 7,087. Improvements in photographic films. Frank Wordsworth Donisthorpe, 5, Southampton Street, Strand, London.
- PRINTING FRAMES.—No. 7,098. Improved frames for photographic printing. George Donaldson, 37, Chancery Lane, London.
- CINEMATOGRAPHS.—No. 7,134. Improvements in apparatus for displaying cinematograph films. Percy Harold Boggis, 57, Chancery Lane, London.
- CAMERAS.—No. 7,159. Improvements in photographic cameras. Harry Wilson Goulding, 26, Park Road, Moseley, Birmingham.
- MICRO-CINEMATOGRAPHS.—No. 7,306. Micro-cinematographic apparatus. Frederic de Mare, 72, Cannon Street, London.
- DISHES.—No. 7,344. Improvements in trays or dishes for photographic purposes. John Ernest Gray, 17, St. Anne's Square, Manchester.

- CAMERAS.**—No. 7,346. Improvements in cameras. George Dawson, 115, Gorton Road, Reddish, Stockport.
- CINEMATOGRAPHS.**—No. 7,414. Improvements in cinematographs. Claude Marie Guillet, 11, Southampton Buildings, London.
- CAMERAS.**—No. 7,512. Improvements in photographic cameras. Joseph Gaut and Harrington and Co., Ltd., 46, Lincoln's Inn Fields, London.
- COLOUR-CINEMATOGRAPHY.**—No. 7,514. Improvements in apparatus, for living pictures on the multiple-colour method. Christian Peter Christensen, 1, Queen Victoria Street, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

- PLATE-HOLDERS.**—No. 3,179. 1908. The invention relates to photographic plate-holders, more particularly to holders for plates, the sensitive coatings of which have to be exposed through the body of the plate, as is necessary in the case of some processes of colour-photography. The invention consists in arranging in the holder a movable frame, into which the plate is inserted, and a device which tends to thrust this frame against the inwardly projecting flanges fixed to the front part of the holder, so that when the

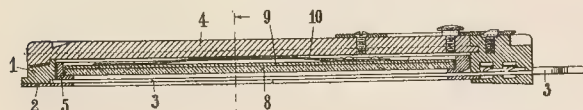


Fig. 1.

shutter inserted between the flanges and frame is withdrawn, the plate and frame are thrust forward, and the sensitive layer is thus brought into the proper position for exposure.

An arrangement is made whereby the plate can be caused to slide from the open holder without allowing the movable frame to slide out as well.

The outer frame of the holder is marked 1, and has flanges 2 forming guides for the shutter 3; 4 is the slidable back of the holder. The plate-frame which forms the essential feature of the invention, is marked 5. It is provided externally with recesses 6, into which extend the points of screws 7. The photographic plate in the frame 5 is designated by the numeral 8; 9 being a spring-plate, which is thrust in the usual manner against the photographic plate by springs 10 fixed to the back of the plate 9.

The holder is used exactly as the ordinary holder. After the opening of the holder by withdrawing the slide 4, the plate is placed in the frame 5, and the holder is re-closed. For exposure, the

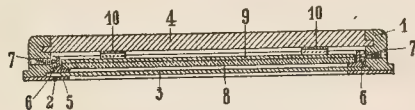


Fig. 2.

shutter 3 is opened, and re-closed after the exposure. The plate inserted into the holder does not, however, remain stationary on the withdrawal of the shutter, as in ordinary plate-holders, but is thrust forward against the flanges 2, together with the frame 5, until the front surface of the latter abuts against the inner surfaces of the flanges 2. When the holder is tilted, or laid down, and opened, so that the plate can slide out, the screws 7 retain the frame 5. Optische Anstalt C. P. Goerz Aktiengesellschaft, 44-46, Rheinstrasse, Berlin-Friedenau.

- PLATE-HOLDERS.**—No. 13,601. 1907. The object of this invention is to dispense with the slide which is placed before the photographic plate in a camera, and which has to be pulled out before the camera can be used, and to provide a frame or envelope for carrying the plate, by which means plates can be placed in the camera in daylight. The back of the dark slide may be hinged in order to allow of the introduction of the envelope. In the dark slide, according to one form of the invention, are two bars, which

are caused to move to and fro in slots in the sides of the slide by means of cords or chains passing over pulleys or sprocket wheels at the top and bottom of the slide, or the bars may be moved by roller-blind mechanism. To these bars is detachably secured a curtain, which forms part of the envelope, one bar being secured to the curtain at the front of the envelope and the other behind so that by turning a shaft the curtain may be withdrawn from before the plate. Colonel Archibald James Erskine, Holly Bank, Mannamoad, Plymouth.

- PANORAMIC CAMERA.**—No. 19,779. 1907. This invention relates to the class of instruments known as panorama cameras, in which the film is arranged in the form of a cylinder, and the lens adapted to rotate about the centre of such film cylinder, so that the whole horizon may be projected on to the film.

In cameras of this type, as hitherto proposed, the film cylinder is arranged with the sensitised side at the outside, and the outer casing of the camera carrying the lens is adapted to rotate about the centre of the film cylinder, with which construction the lens projecting from the side of the outer casing, is liable, when rotating, to contact with the body of the operator, and be stopped and consequently over-expose a portion of the film. The present invention provides a camera in which this disadvantage is overcome. An important feature of the invention consists in arranging and rotating the projecting apparatus within the film cylinder, an arrangement allowing the lens to be arranged wholly within the area of the camera and the outer casing to be kept stationary, which is also an important advantage over other cameras heretofore proposed. A further feature of the invention is the provision of stops, adapted to close the shutter at any desired point of the circular path of the projecting apparatus, whereby a picture of any desired length may be taken.

Other features of the invention are the means for varying the time of exposure to suit prevalent conditions, the means for indicating when an unused portion of the film is placed in position to be exposed, and the shutter operating and locking mechanism. The twenty-three drawings are necessary for the proper explanation of the apparatus. William Arthur Case, 1,145, Hayes Street, San Francisco, Cal., U.S.A.

- CINEMATOGRAPHS.**—No. 14,058. 1907. The invention relates to an improvement of the apparatus described in Moy's patent, No. 25,625, 1897, and consists of a projector or camera in which the feeding mechanism is operated by a cam. The cam shaft is driven by means of an epicyclic train. Ernest Francis Moy and Percy Henry Bastie, Greenland Place, Camden Town, London, N.W.

- MOISTENING CINEMATOGRAPHIC FILMS.**—No. 562. 1908. The invention is an apparatus for preventing the drying and cracking of the cinematographic film during projection. The claims are: (1) Means for moistening cinematographic bands or films, characterised by the application of steam from hot water upon the gelatine of the band or film whilst the latter is being unrolled. (2) Apparatus composed of a boiler, a suitable lamp, surrounded by a protective cover, and a metal or rubber tube, of which the free end is placed under the moving band or film, the distance between the two being lessened as the rapidity of travel of the band increases. Eugène Louis Amédée Lertourné, 2c, Rue Pavée, Rouen.

### New Trade Names.

- WAFER.**—No. 300,023. Photographic cameras included in Class photographic plate-holders or slides and photographic shutters. The Thornton-Pickard Manufacturing Company, Ltd., Camera Works, Broadheath, Altrincham, Cheshire, photographic apparatus manufacturers. January 30, 1908.
- LUXEPIA.**—No. 300,718. Photographic printing papers and sensitized photographic cards. Maurice Sinay Berger, 9, Clevedon Mansions, Lissenden Gardens, Highgate Road, London, N.W., photographic chemist. February 24, 1908.
- PRIMOIL.**—No. 300,964. Photographic papers. John J. Griffin and Sons, Ltd., Kingsway, London, W.C., photographic apparatus and paper manufacturers. March 3, 1908.
- PROFESSIONAL.**—Photographic papers. John J. Griffin and Sons, Ltd., Kingsway, London, W.C., photographic apparatus and paper manufacturers. March 3, 1908.
- AMBROSIO TORINO.**—No. 300,531. Photographic and cinematographic



paratus, included in Class 8, and films bearing taken photographs, for use with cinematograph apparatus. Società Anonima Ambrosio, via S. Teresa O., Torino, Italy, manufacturers. February 17, 1908.

## Analecta.

tracts from our English weekly and monthly contemporaries.

### Notes on Cleaning Old Daguerreotypes.

Little alcohol absolute (writes Mr. C. Welborne Piper in "The Photo Photographer") was first flowed over each slide, about a being sufficient in each case, and the plate was then immersed under a gently flowing tap. In two or three minutes its retained the water when drained, and it was then immersed in a cyanide solution (10 grs. to the pint) for ten minutes. After the hypo bath, the plate was rinsed under the tap for about half a minute, then placed in an empty dish and treated with a cyanide solution (10 grs. to the pint of distilled water) until the stains practically disappeared. The cyanide attacks the copper plate, it was thought best to gently pour the solution on and off the plate, but in obstinate cases the plate was left in the cyanide solution for a few minutes. Its removal from the copper is very slight, and possibly of no consequence to the image; but I thought it advisable to frequently replace the cyanide with fresh solution, and certainly found that this considerably quickened the cleansing process. In some of the worst cases the stains were very obstinate, and I repeated the alternative treatment of hypo and cyanide several times. Finally, however, I came to the conclusion that this repetition had little if any effect, and that even though faint traces of brownish stain could still be detected in the wet cleansed image, such traces almost completely disappeared in the drying process. The wet slide does not in any way look very clean, but drying produces a wonderful change.

## New Books.

tochemie und Photographie." By Dr. Karl Schaum. Part I. A. Barth, Leipzig. 1908. Mk. 10.

This work forms the ninth volume of Professor Bredig's "Handbuch der Angewandten physikalischen Chemie," and as such it is not that of a text-book, but rather to give a critical summary of knowledge in its branch of science. Too frequently in such books "the criticism is wanting, and a mere compilation results, instead of a system in which lessens its value even as a source of information. No such defect is to be urged against Professor Schaum's work, the first part of what promises to be the most complete treatise on the first part of the sciences, photo-chemistry. The portion of the book which deals almost entirely with the physical aspect of the subject and measurement of radiant energy. The conversion of heat into radiant energy and the energetics of radiation, starting from Planck's law, are admirably condensed, and a good description of the practical methods in this region. The evolution of the theory of radiant energy, otherwise one would wish for more attention to the work of Stewart's pioneer work. The questions, to which now a quantitative answer is possible, were, "How does the energy of a heated body depend upon the latter's nature and temperature? And, further, how does the spectral composition of radiation depend upon the same?" One important practical result from this inquiry is the method of optical pyrometry, and it is noted that, by the application of the laws of radiation, it is possible (1) to measure much higher temperature than by gas or thermometers, (2) the temperature of extra-terrestrial and unattainable bodies may be determined.

The whole question of photometry is dealt with in a very complete and systematic fashion, being preceded by an excellent discussion of the sensitivity of the eye, both as regards colour and intensity, and of the laws of colour measurement and mixture. In particular the phenomenon of the eye is fully discussed, and an explanation suggested based on different functioning of the rods and cones. The methods and of "total" photometry include a useful table of definitions. The section on spectrophotometry is rather

brief, considering its importance, both for photochemistry and photography, but much of the matter is dealt with under other heads. The final section of this part deals with the principles and methods of lighting technique, and gives a very adequate survey of the progress made here. It is pointed out that absolute general rules for the valuation of a light source cannot be set up, according to conditions one or another quality may determine its value. But beside the valuable résumé of facts he gives, Professor Schaum has sought to clarify the medley of definitions which are used with respect to the efficiency, economic, and other values of artificial sources, and useful tables exhibiting the comparative costs, efficiency, life, and so forth are included.

The whole work is well illustrated with pertinent curves and diagrams, and though the treatment is throughout from an exact and mathematical standpoint, this is inevitable in a treatment of the subject designed for the specialist.

S. E. SHEPPARD.

"Das Kopieren bei Elektrischem Licht." By Baron von Hübl. (Halle: W. Knapp. Mk. 1.80.)

In this volume Baron von Hübl has collected and condensed the articles on electric illuminants which appeared in a German contemporary last year, and were translated to a large extent in our own columns. The book deals with the areas of equal illumination given by various types of arc and other lamps, and in general gives the results of the author's measurements in respect of such important matters as the value of reflectors, the effect of length of arc, etc. Though hardly a volume from which the printer or portraitist by electric light can derive much assistance, the information in it is of a kind which should be considered by makers of apparatus for these two classes of workers and the collection of the articles in book form is therefore a task for which we may be grateful to author and publisher.

### CATALOGUES AND TRADE NOTICES.

"CAMERA HOUSE JOURNAL" in its current issue gives photographers the benefit of the weather forecast for the coming season, as set forth by Messrs. Butcher's meteorological department, and intimates at the same time, for the guidance of the dealer, the make of camera which will be in demand. But although tropical weather, with a consequent demand for the "Tropical Excelsior," is predicted, the firm provides for possible disappointment by giving particulars of other types of their well-known cameras suited to a more temperate condition of the atmosphere. An interesting feature of this issue is a coloured inset, showing examples of a series of mounts of which Messrs. Butcher make a speciality, particulars of which may be obtained from Camera House, Farringdon Avenue, E.C.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

FRIDAY, APRIL 17.

United Stereoscopic Society. Excursion to Rye and Winchelsea.

MONDAY, APRIL 20.

Harrow District Photographic and Scientific Society. "Gum Bichromate." J. Brown.

Stafford Photographic Society. Annual General Meeting.

TUESDAY, APRIL 21.

Royal Photographic Society. No Meeting.

Epsom and District Literary and Scientific Society. "Carbon Printing." Illingworth & Co.

Hackney Photographic Society. Questions and Answers.

Worthing Camera Club. Annual Meeting.

WEDNESDAY, APRIL 22.

South Suburban Photographic Society. "Portfolio and Print Criticism." Annual General Meeting.

Woodford Photographic Society. "Choice of a Printing Process." J. P. W. Goodwin.

Croydon Camera Club. "Elementary Photographic Chemistry." W. H. Smith.

THURSDAY, APRIL 23.

Handsworth Photographic Society. "The Production of Cloud Negatives." Demonstrated. F. Greenway.

North London Photographic Society. "Pictures in Holland." F. W. Fincham.

Richmond Camera Club. "Enthusiasts." R. & J. Beck, Ltd.

Rodley, Farsley and Calverley District Photographic Society. "Field Work." H. Crossley.  
 London and Provincial Photographic Association. "Polarised Light." J. Brignshaw.  
 Liverpool Amateur Photographic Association. "Afar in the Fatherland." W. L. F. Wastell.

### THE PROFESSIONAL PHOTOGRAPHERS' ASSOCIATION.

The usual monthly meeting of the General Committee was held on Friday, 10th inst. Present: Messrs. H. A. Chapman, J.P., Alfred Ellis, S. H. Fry, L. Langfrier, A. Mackie, D. Prodder, C. H. Skillman, Lang Sims, and R. Fellows Willson. Mr. H. A. Chapman, J.P., president, in the chair.

Mr. Alexander Mackie was re-elected hon. secretary, and Mr. Lang Sims hon. treasurer for the ensuing year.

A letter was read from the manager of "The Exhibition Herald," the organ of a Missionary Exhibition to be held this year in London, in reply to a protest made by the Association against an advertisement of a misleading character of cheap enlargements. It was to the effect that the advertisement complained of had been inserted without reference to the authorities of the exhibition, and would not be allowed to appear again.

The solicitor's account for costs in connection with defending two cases in the Pocklington (Yorks) County Court, brought by a free-press portrait firm, was passed for payment.

The question of the representation of the Association and of the interests of professional photography at the conference to be held at Berlin in October next for the revision of the terms of the Berne Convention with regard to international protection of copyright was discussed, and it was agreed to refer the matter to the Copyright Sub-committee.

The case of a photographer who had made unauthorised use of the name of the association in threatening proceedings was discussed and a certain course decided upon.

THE LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.—Meeting held April 9, 1908, Mr. H. Snowden Ward in the chair. Mr. C. L. Finlay had been announced to give a demonstration of the Thames colour screen plate. Owing to difficulties due, it was stated, to the British workman, the demonstration, so far as it consisted in the exhibition of results, did not take place, but Mr. Finlay said that the plates would be on the market in fourteen days from that evening.

In the new plate, he continued, advantage had been taken of the half-tone screen in the preparation of the coloured ground or screen. The first colour was laid upon the glass at an angle of 45 degrees, the second was laid on the top of this, also at the same angle, whilst the third was so used that it filled in all the spaces. Thus there are no white spots, and no other filling was needed, and no black or other colour entered into the making of the plate beyond that of the screens. At this point the actual colour-coated plates were projected on to the screen, and although the 3-inch square plate was thrown up to some 7 feet, the grain was scarcely perceptible to those within some 5 feet of the sheet, whilst at the end of the room it could not be detected at all. When a double and triple coated plate was projected the colours were easily seen, and, said Mr. Finlay, these were from a screen of 120 lines to the inch. For the scientific worker it was intended to use a much finer screen than this. The ultimate result that was being aimed at was that of being able to print the coloured positive, and the grain would here again be of a much finer nature. The emulsion was one specially adapted to the work, and a special compensating filter would be issued with each box of plates; this would be of a very pale yellow, and in many cases it would not be necessary to use a filter at all.

Mr. O. S. Dawson, on being called upon to say a few words, added that the next stage was that of being able to produce the coloured positives on paper in one printing. He thought that a coloured transparency process was doomed to a short life, but with the plate under notice it would be possible to obtain coloured prints by the aid of Dr. Smith's Uto paper, and he passed round prints upon this paper that gave great promise.

Rev. F. C. Lambert asked if the two colours, red and green, were the circles and the blue the filling colour. The reply to this was that it was so. In reply to a question as to the plates being faster than the Autochrome, Mr. Finlay said that it was to be expected that the speed would be much greater; further, as each box of plates

would have its own filter, any slight variations in the emulsion would be compensated for, the speed of each batch would also be given, and would also the time of development. As to the absorption of the filters, Mr. Finlay said that this was abrupt. Not the least sign of filling had been found, and the colours were put down by a photographic process and held in a colloid; the working of the plates was develop, reverse, and fix. The results would stand great enlargement in the lantern.

Dr. Lindsay Johnson asked if the red, green, and blue dots were the same size. As to the pale yellow screen, the Lumière one was of a warm pink or orange colour. Why could this be done away with? How was the blue held back? Mr. Finlay said that the red and green dots were the same size, and the rest was filled in with blue; the reason a pale filter could be used was because the dyes passed a large amount of light, of their own colour, but cut off the blue and other rays, and the emulsion was so sensitive to the red and green that it thus caught up the blue.

Mr. Lambert asked the relative size of the dots compared with the Autochrome plate, and Mr. Finlay said that they were from a 250-line screen, and would thus be larger.

Mr. W. E. Debenham said that the dot must be large enough to give white light, and Mr. Malby said that his trouble with the Lumière was the rendering of white, and he was anxious to know if one might expect to be able to obtain pure white on the new plate. Mr. Finlay stated that the plate would give as pure a white as could be expected when dealing with colours. What Mr. Malby complained of was, he said, that the whites had the appearance of mother-of-pearl in the plates he had mentioned, and Mr. Finlay said that the more even distribution of colour would remedy this.

Mr. Bayley thought that Mr. Malby was too severe a critic upon his own work, as he had seen it, and thought that the whites were all that could be desired.

Mr. Walker said that the Joly process gave a pure white, and this was undoubtedly due to the straight lines used, and he thought that the new plate would gain in this, owing to the rulings.

Dr. Johnson thought that the degraded whites were due to the light being thrown back from the black cardboard. He now used black velvet, and had no trouble in this respect, as its use gave much more brilliant colours. His trouble was to get a good black.

In reply to a question as to the permanency of the colours, Mr. Finlay said that everything had been done to make them permanent and that they were formed into lakes with this idea.

Mr. Snowden Ward, in proposing a vote of thanks, said he had pleasure in offering the thanks of the meeting to Messrs. Finlay and Dawson. This was carried with acclamation.

The hon. sec., Mr. Ernest Human, here announced that he had made arrangements for another night on this subject, possibly in June, when the whole proceeds of developing, etc., would be done in the room and results shown. The exact date he would announce later in the photographic press, and he asked visitors to carefully watch the press for it.

A series of slides on the Autochrome plate by Mr. Malby were then shown, and when one says that these were up to Mr. Malby's usual standard they have the highest praise that it is possible to give to any slide work.

SOUTH SUBURBAN PHOTOGRAPHIC SOCIETY.—On Wednesday, April 8, an able and interesting lecture on "Recreations with an Enlarger" was given by Mr. J. Nixon, the hon. secretary of the society. With him was associated Mr. J. L. Savage, who proved an able demonstrator. Mr. Nixon stated that his audience would find his lecture most unorthodox. He then set out to prove that the common dictum that correct exposure for enlarging, by day or artificial light, must be found by "trial exposure" is untrue and provocative of waste in time, patience, and materials, though undoubtedly profitable to the "makers"—that is, it was possible to reduce exposure to a system as simple and certain as finding the exposure necessary for a "plate." A meter of his own construction was then passed round, and Mr. Nixon demonstrated, by means of a skeleton enlarger and the blackboard, the method of arriving at the mathematical formula by which it was constructed. Exposures were at this stage made by Welsbach gas mantle, and the results proved the meter a success. A discussion followed, during which it was suggested that the meter should be put on the market. It was stated that with stamper plates this meter would be useless, and also that the meter was



signed for use with oil or gas mantle illumination, and would not be satisfactory with arc, Nernst, or similar illuminants giving an image at the lens smaller than its working aperture. On the motion Mr. Percie Edwards (chairman) a hearty vote of thanks was accorded to Messrs. Nixon and Savage. The full text of the paper given on another page.

**SUTTON PHOTOGRAPHIC CLUB.**—The winter session of this society, which has never been more active and prosperous than it now is, after twenty-five years of photographic propagandism, was brought to a conclusion on April 10 by an ably handled address upon the relationship between "Exposure and Development," by Mr. H. W. Lane, in the course of which he touched upon many points that even seasoned photographers are at times apt to overlook. For instance, he emphasised the difference of time which is called for by exposing to a pictorial aim and that which suffices where the object in view is merely to obtain some kind of a record, such as, for instance, is usually met in the photographs of foot races, etc.; while in the latter instance very presumably little beyond the high lights are registered. In the former it is requisite to impress the plate with a developable image of the details verging on the deepest shadows, which reason the determination of a normal exposure must, in large measure, depend upon whether or not pictorialism is the aim and aim in view. Comparing the respective advantages of anemometer and exposure tables, he said that those who occupied themselves in taking mixed subjects would find that the difference of exposure due to the class of subject was far more variable than changes in the actinic powers of daylight, which, as a rule, would be very closely gauged by aid of tables or an exposure card. Speaking on the errors in exposures due to imperfections and shutters, he stated that, although he usually tested his shutters himself, on one occasion he sent a shutter to a firm to be tested, and received back a certificate showing that all the speeds marked on it were twice as fast as the shutter actually worked. Being doubtful of this report he immediately sent the same shutter to another firm, who sent him back their certificate stating that the speeds marked on the shutter were only half as fast as the actual shutter speeds. As regards development, Mr. Lane considered raising the temperature of the developers to be more efficacious in producing detail than in increasing the amount of accelerator. He approved of "time" development, and showed sets of negatives which had received exposures varying amounts which developed by time for an identical period of time, and produced prints which were nearly identical in their gradation. Subsequently the chairman of the club, Mr. Hector Maclean, showed and described two new patterns of view finders—viz., the "Sellar," which assesses the useful power of showing a brilliant image, which is only right way up, but also right way about, and "Watson's" finder and telemeter, which is so constructed that it can be used as a direct view or as a "reflector" finder, and which is also fitted with an ingenious attachment by means of which it is possible to measure the distance from the benolder of any particular object.

**PROYDON CAMERA CLUB.**—Years ago public lantern shows used to be a feature of the club's syllabus. These consisted of a series of slides of varying degrees of excellence, passed by a Selection Committee, but totally disconnected with each other, and practically devoid of dialogue. Notwithstanding this they were well attended by members and friends, and formed a source of profit, as well as entertainment. Interest, however, gradually waned, and eventually they had to be abandoned for lack of support. The death of the lantern as a means of public attraction was held to be due to the advent of the cinematograph. That the causes operating were more within than without seemed to be proved by a lantern lecture given by Mr. W. L. F. Wastell last week, entitled "Afar in the Fatherland," giving an irresistibly humorous as well as interesting account of a day trip up the Rhine and Moselle. The "Walrus" was gay and lively in rapid succession. In some cases the alterations were perhaps rapid, for now and then a member, possibly of Scotch extraction, caught some of his more subtle jokes rather late, and burst into hearty appreciative laughter, just as the lecturer, with a fine attempt at solemnity, was breaking out into poetry of a pathetic kind. One interesting scientific fact, bearing on evolution, was elicited during the evening. The modern walrus, whilst undoubtedly an authority on the various Rhine wines and lager beers, seems to be losing his aquatic habits; the recollection of an accidental slip from a pre-

historic plank-bridge into what should have been the refreshing water underneath, being spoken of with considerable distaste. The slides illustrating the lecture were really first-class, many of them exceedingly beautiful. They included some fully authenticated and unique photographs of early German dragons, breathing fire and fury, and chivalrous knights of old, heavily goloshed and mackintoshed, with unsheathed umbrellas, ever ready to strike a blow on behalf of right and virtue. In the course of the evening the president (Mr. J. M. Sellors) gave a short exposition of the new Donisthorpe process (fully described in our pages last week), which attracted much attention. A new roll-film is also promised coated on black paper. Mr. E. A. Salt suggested white paper would be more advantageous; it was common knowledge that this as a support, in effect added to the speed of the emulsion, the reflected light coincided with the image, and halation in the ordinary sense was absent.

## Commercial & Legal Intelligence.

**LEGAL NOTICES.**—A first and final dividend of 2s. 1½d. in the £ is to be paid at the Official Receiver's office Liverpool, on April 13, in the bankrupt estate of James Shaw, photographer, residing and carrying on business at 4, Bridge Street, Southport, Lancs.

A meeting is to be held at Luton on May 6, of the creditors of Arthur Joseph Anderson, photographer, of 37, Wellington Road, Luton; 36, High Town Road, Luton; and 7, High Street, Leighton Buzzard, all in Bedfordshire.

## News and Notes.

**DARWEN PHOTOGRAPHIC ASSOCIATION.**—The secretary of the above is now Mr. W. Edge, 33, Radfield Avenue, Darwen (vice F. Dearnley, resigned).

**MESSRS. GRIFFIN** are holding a sale of apparatus, and such materials as mounts, at their premises in Kingsway, London, W.C.

**OLD MASTERS IN GERMANY.**—A correspondent writes:—"The exhibition of old English masters in Berlin, which has lately taken place, was considered on all hands to be a great success. It was held under the auspices of the Berlin Academy, and opened by the Kaiser in person. Apart from the fact that never before had any opportunity of seeing a representative collection of English pictures been afforded to Germans, there was also the international aspect. It was considered as a distinct help towards an improvement in Anglo-German relations. Yet even here the course of international love has not run smooth, and the Berlin Photographic Company seems to have been the offending rock. It appears that this company obtained the permission of Herr Kampf, the president of the Academy, to publish a souvenir catalogue, in addition to the official catalogue, which had been sanctioned by the English lenders. Many of these masterpieces have not been reproduced before, even in England, an omission which should be speedily remedied. But the owners of the pictures resented this free-handed action on the part of foreign borrowers. The reproductions were to be tastefully got up and sold by the Berlin Photographic Company at a high price, while the Academy were to receive forty copies as a free gift in return for the rights of reproduction. It would indeed be an anomalous state of affairs should the company obtain the copyright of English pictures and so be in a position to prevent their reproduction later on in England. One result of this friction has been the withdrawal of many exhibits from the collection previous to the removal to Copenhagen. So the Danes have had to suffer for their neighbour's shortcomings—or rather fargoinings."

[Our correspondent overlooks the fact that the foreign copyist could establish copyright only in his copies of the paintings. He could not restrain the issue of reproductions of the painting in England.—Eds. "B.J."]

**WELLCOME PHOTOGRAPHIC CLUB EXHIBITION.**—On Saturday in last week the seventh annual exhibition of the Wellcome Photographic Club at the Wellcome Club and Institute, Dartford, was opened by Mr. H. Snowden Ward, F.R.P.S. The chairman, Mr. H. C. Sayer,

briefly drew attention to the favourable condition, both financial and otherwise, of the club. He also referred to the indebtedness of the members to their president, Mr. H. S. Wellcome, for the splendidly equipped dark-rooms, and announced that in future the committee intended to do more to encourage technical photography.

Mr. Snowden Ward made a highly interesting and instructive speech. He congratulated the members on the excellence of the exhibits, which he considered highly creditable to a club that relied wholly upon the work of its own members, and which he said would compare favourably with the members' class of any club in England. In referring to the aims of artistic photography, he emphasised the importance of the elimination of the non-essential, and the need for more concentration in photographic work. He then formally declared the exhibition open.

The following awards were made:—Bronze casket, for the best picture in the exhibition, "Melton Meadows," Mr. W. H. Fowkes. In Class A, for members who had previously received an award in an open competition, three pictures received honourable mention: "Tugging," Mr. H. W. Lane; "Sunset," Mr. S. F. Morgan; "On the River," Mr. F. C. Starnes.

In Class B, for members who had not previously received an award, there were two bronze plaques, presented by Mr. G. E. Pearson, general manager, and Dr. Jowett, works manager. First plaque, "On a Kentish Common," Mr. I. J. Gash; second plaque, "Street Scene, Dinan," Mr. E. G. Price. Honourable mention: "An Alpine Scene," Mr. R. E. Jackson; "Fading Tints of Western Skies," Mr. H. Hamlin.

The exhibition included a large and excellent loan collection of colour photographs, including some of the best examples of the work of Messrs. Henry J. Comley, R. Child Bayley, John H. Gear, J. A. Sinclair, and others.

## Correspondence.

\**We do not undertake responsibility for the opinions expressed by our correspondents.*

\**Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*

### THE PORTRAIT POSTCARD.

To the Editors.

Gentlemen,—*"Audi alteram partem"* is oftentimes a saying well worthy of attention, and so I wish to say a few words in reply to "Indenture" and others. I have been employed by a London photographer to retouch his special negatives. I have lectured on printing processes before an advanced London club. I have had my portraiture compared with Baker Street work, to the disadvantage of the latter. And, I confess it boldly, I am merely "something in the City," and practice photography in my spare time. The crux of the whole matter is this: That the ordinary professional is not worthy to have apprentices at all. What does the ordinary youth who has been indentured really know about Art? How often has he been to the National Gallery, the Tate Gallery, or the Wallace Collection to study—lovingly—the portraiture there? Professional photography has been regarded far too long merely as a trade, but the public—at least the educated public—is now beginning to want an artistic picture as well as a photograph. I fancy that Miss Alice Hughes, H. Walter Barnett, J. H. Gear, William Gill, etc., are not complaining much about the present slump in things photographic. As regards postcards, I quite agree with the opinion of the majority of your correspondents. Good work is worth paying for, and the man who does a good business in carbon, plat., or C.C. cabinets, ought, if possible, to resolutely refuse such orders.

BRAINS.

To the Editors.

Gentlemen,—Allow me to say how pleased I am that you have opened your columns to a discussion of the abominable portrait postcard nuisance. Surely something can be done to prevent prices being cut so low. Here there are several doing postcards, taken with a half-plate, for 2s. 6d. a dozen, and I have sitters come and expect two positions, and groups, including dogs, etc., and want proofs for that price. When I point out to them how impossible

it is they reply that So-and-So only charges 2s. 6d. a dozen, and gives re-sittings if necessary. The only remedy I can see is the very sensible one of a £10 licence, suggested by one of your correspondents.

I may say I never show a portrait postcard or quote prices, and when postcards are insisted on I always try and introduce something else. In spite of that, some weeks half my sitters are postcard orders; many those who used to have cabinets.

Another thing here is the competition from gardeners, coachmen, postmen, and hosts of other trades, who have half-plate cameras doing work and charging just a trifle over the cost of material. Their victims have since paid for the work, put up with the quality, and cannot afford to go to a professional man and have it done again. Many times I have had enlargements done by these men, brought to me to try and improve (!), as they were not satisfactory, and the explanation given is that they were done by an amateur.

The other day an amateur, in a gushing moment, told me he had photographed a family group of some friends of his. On showing them the proofs they ordered a dozen, and after sending the prints and hearing nothing about paying he politely suggested that it cost him something for material. They told him "if it was payment he was after they should not think of doing so, as the prints were not worth it, and they quite thought he was giving them as a present." I told him it served him right, and gave him a little homily about sticking to his own business and letting other trades and professions alone. He is a man with a fair salary and has no need to cut other people's work.

Now this kind of thing would be put to an end by a photographer paying a licence. We hear of no one grumbling that an auctioneer should have to have a licence, and why not photographers? Surely the P.P.A. could do something in the matter.—Yours faithfully,

RUSKINS.

To the Editors.

Gentlemen,—In this city (Manchester) almost every studio (except the ultra-fashionable) exhibit postcards in their show-cases usually at 2s. 6d. per dozen, and rarely, if ever, higher than 3s. a dozen. The public have realised that a postcard is scarcely smaller than a cabinet, and is usually quite as good. In the principal residential suburb here, where there are no high-class studios (these are all in the "city," which is quickly reached by car), a stationer and newsagent has a case full of postcards of groups, private houses, wide and without figures, and portraits taken in the garden. These are not retouched, being evidently amateur work, and the figures are kept small, but the work is clean and brilliant. This man offers to attend to take such portraits at 2s. 6d. per dozen. Of course, he does not depend on this for his living, but how can a professional compete with such absurd prices unless he could keep a man's time filled with that work only?

Then there is a man who touts the shop fronts and sells the cards at 2s. per dozen. A customer told me mine were six times as good as the tout's work, but would not pay more than 2s. 6d. for the cards! When a customer wants a reduction for a locked it is invariably a "stamp photo" I am asked for, and the price is expected to be accordingly. This seems the age of the "very dear" or the "very cheap" photography (the latter not always nasty), and it takes a large capital to make money at either kind.—Yours, etc.,

Manchester.

April 13, 1908.

To the Editors.

Gentlemen,—I have followed with interest the numerous letters re postcard photography, and, while deploring the existence of many things connected with the profession, I should like to say a few words in defence of at least one of the so-called "postcard fiends."

Thirty-six years ago I was apprenticed to photography (a date I have no doubt when some of those who are calling out about their rights and wrongs were not born), and for several years I worked as an assistant in some of the best studios. About twenty-one years ago I opened a business for myself in a small country town, about twenty miles from Birmingham, and for several years I did a fairly good trade with views of the town as well as portraiture; but with the advent of the amateur, and later with picture postcards, I found



portion of my income practically disappear. Then came the postcards, which commenced their existence in the larger, and with great facilities offered by the railway companies in the way of half-day trips three or four times a week to these centres I found that my portrait business was going away of the view portion. What then, was my position?

With a large family to provide for it was no use sitting down and crying over my losses; I had to try and with the prices charged in Birmingham and elsewhere, and to put time with the cheap man, who was canvassing for customers at every door. Even then I was unable to get a living, so have I to move to a large town, where I am advertising postcards at a dozen, and, although the work is good, yet even at that I cannot get sufficient customers to keep myself and family stable. Now, I should like to ask those successful ones who so glibly of their dignity, their fair prices, and £10 licences, whether I am not justified in trying to get even a part of a living even to do postcards at 1s. per dozen if by so doing I can show it, or am I to sacrifice myself and family for a principle, or barred from following a profession to which I was apprenticed to which I have worked for thirty-six years, because, through no of mine, I have been unsuccessful, and could not afford to do a year for a licence? I have vainly tried to obtain a situation, though I have undeniable references as to my character, tell me I am too old (48), so that by their way of reasoning it is nothing but the workhouse or some such kindred place that "Play" and others of your correspondents would condemn the successful ones to.—Yours faithfully,  
ONE OF THEM.

To the Editors.

Gentlemen,—Just fancy! A photographic artist, value £10 per an! "Here, Johnnie, run down to the post office and get me a licence for 'Carlo' and one for myself. Here's £10 8s., and the change back." I do not see any remedy for the present of the profession. This is an age of cheapness; the public must be met. There may be a few who cater for the well-to-do and are in a safe position, who can afford to hold aloof from "cheap" work, but they are a very small percentage. What must be the majority do? If they refuse to supply the public it will be better cut to the final than trying to make the best of a bad and doing postcards—good postcards.

My policy of telling your clients "You don't care a hang whether made or not" is all very well if you do not happen to have a who tells him that "They will last for ever and a day," and does equal or better work. Keep up the standard, even if the "fiends and vultures" will not do much harm, but I suppose they must live.

Suppose a man, bricklayer or navvy, loses his employment. He has possibly dabbled a little with a camera as a hobby. Can you advise him for trying to keep body and soul together by using his knowledge and turning it to advantage? There are many who have been forced into it. Do not let us condemn anyone for trying to earn an honest penny by any device in such a comely age. Perhaps there are some photographers who would be against doing a little bricklaying in order to fill their empty pockets; in fact, we all do a little, if only by repairing the studio ories, etc., perhaps doing a bit of plumbing or painting, just to "so much."

Expensive portraits are a luxury that few people can afford. They are difficult to pay from 10s. upwards for something in the nature of photographs. Most wages will not run to that amount, therefore the "Lord High Artist" suffers, and must adapt himself to circumstances or take the only alternative.

My own case is like most others. I have come down to postcards, but they do not pay my rent, etc., so am trying to obtain a licence again; but from replies received the profession seems to be in a very bad state, does not seem able to pay a married man's wages away to a trade firm who do enlargements for a few pence, or print, glaze, and trim postcards at very little per 1,000. There is any remedy the whole competitive system will have readjusted.—Yours, etc.,  
A VICTIM.

## Answers to Correspondents.

\**All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.*

\**Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.*

\**Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., 24, Wellington Street, Strand, London, W.C.*

\**For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.*

### PHOTOGRAPHS REGISTERED:—

E. J. Moorhouse, 102A, King Street, Egremont, Cheshire. *Photograph of the Rev. T. Price Davies of Liscard, Cheshire.*

R. Duncan, Ayr Street, Catrine. *Photograph of Catrine Cotton Works. Twin Iron Wheels.*

F. C. MacMahon, 23, Academy Street, Inverness. *Photograph entitled, "The Last Parade of Volunteer Forces, Inverness, March 31, 1902."*

W. F. Gould, 22, Milsom Street, Bath. *Photograph from a Pencil Sketch of Weston-Super-Mare, A.D. 1826.*

T. M. Barbour, 1, Brierley Street, Bury, Lancashire. *Photograph of the late Thomas Boothman.*

LENS APERTURES.—I would be very much obliged if, through the medium of this column of your valuable paper, of which I am a constant reader, you would inform me on the following point:—Some time ago I purchased a half-plate R.R. lens of ordinary focus, with plate diaphragms. There are four metal plates with the openings of 13-16in., 9-16in.,  $\frac{1}{8}$ in.,  $\frac{1}{16}$ in., but without marks of any kind to tell the apertures. Would you kindly tell me the average openings for a lens of this size, so that I may see what they stand for and get their *f* numbers engraved on them?—T. O. McNEILL.

You first require to know the focal length of your lens, which you can find with sufficient accuracy by focussing as sharply as you can at full aperture a distant object—e.g., a church spire. The distance from the focussing screen to the lens diaphragm will be (near enough) the focal length of the lens. To get the *f* numbers you must divide this number by the diameter of the various apertures. Thus, assuming the lens to be 8in. focal length, the *f* number of the 128 ÷ 13, or practically *f*/10.

RED-TONED BROMIDE.—In your issue of March 13 you gave us a formula for the red toning of sulphide-toned bromides. My employer was much struck by the tone produced; it was, in fact, equal to a red chalk carbon, and we did several large ones for the window. They were only there a few days when the colour began to go, and they seem to be going back, in a patchy manner, to their original sepia colour. Can you explain this? They were done strictly according to the instructions given. Have you yourselves had any experience as to permanency?—S. A.

A possible cause of the fading is stale sulphocyanide. We suggest increasing the proportion of gold to sulphocyanide, so that toning is complete in fifteen minutes at the outside.

FILMS.—I shall feel much obliged if you will kindly examine the enclosed films. I have developed them with pyro-soda developer, Ilford formulae. They took a long time for the image to appear, and I could not get density. I shall esteem it a favour if you will kindly let me know the reason of the failure to get good results.—SIDNEY E. BEGGS.

Your films are all under-exposed and also out of focus. They look as if you had been attempting impossibilities with rapidly moving objects in a bad light. A very short exposure with a lens of large aperture is necessary for such objects as these. You should also hold the camera more steadily.

PRESS PHOTOGRAPHY.—(a) If I take a photograph of public interest and send it to several of the weekly papers, if more than one accept it and pay the usual charge, can they get me into trouble for selling it to the others too? (b) Does the fact that I have sold the picture to one or more of the papers mean that the copyright

belongs in future to them, if they care to register it? (c) If it is not illegal to sell the photograph to several papers, is it considered an unprofessional thing to do, or is it the usual thing? (d) Does the fact that a subject has taken a prize in a competition prevent one using the photograph again for purposes of sale, exhibition, or other competitions?—PRESS.

(a) No, it is understood that you are offering it to others, unless you are being paid for the exclusive use. (b) Certainly not, unless you used your licence to use very loosely. See the article on "Copyright" on another page. (c) It is usual. (d) Not unless the sole copyright is transferred to the organisers as a condition of the competition.

**LENSES.**—(1) Can you give particulars of the cinematograph projection objective and wherein lies the difference in effect from an ordinary lens for camera work? (2) What is a positive lens? (3) Could you kindly inform me how to print P.O.P. by artificial light?—MOUR (Glasgow).

(1) A cinematograph lens is one of short focus, about 3 inches, and large aperture,  $f/3$  or  $f/2$ . Lenses of various types are made by most of the leading opticians specially for cinematograph work. (2) A lens which converges rays of light, that is to say, forms an image of an object.

**TRIPOD STAY.**—(1) Where I can obtain a tripod stay, which I remember seeing in the list years ago. It consisted, I think, of metal strips, to fasten inside the legs of a wooden tripod to prevent slipping. (2) Whether or not it is illegal for any person to copy names and addresses from marriage notices exhibited at a registry office, and whether a clerk in charge may prevent one from doing so (such copying for business purposes, of course)?—MARRIAGE.

(1) The tripod stays are supplied by Marion and Co., Soho Square, and, we imagine, by most similar houses. (2) We cannot say for certain, so you had better put the question to the Registrar-General, Somerset House. We should certainly say that the clerk is quite within his powers in refusing any one permission to make copies for business purposes, if he has reason to think it would cause inconvenience or annoyance to the parties concerned.

**LENS QUERY.**—(1) The extreme length of my studio is 21ft. I wish to take busts, full-length figures, and groups, say of 10 or 12. Allowing 3ft. at each end for camera and figures—6ft., leaves 15ft. between sitters and camera. Which kind of rapid portrait lens would be most suitable for my purpose? I have written several makers. One says that I cannot use a longer focus than 12in., another that I require one about 7in. Kindly give full particulars to guide me. (2) Would you say whether the mercury-vapour lamp is satisfactory for making groups, etc.? I have an idea that it would be easily damaged, which would be very awkward, as it might be difficult to have it repaired here. Please say what you think. Or would you consider the arc type of portrait lamp more satisfactory?—POLLY ANTHUS.

(1) The size of pictures you desire to take is not mentioned, but we will assume it to be the ordinary cabinet. With a lens of 9in. focus a distance of about 13ft. is required for a full-length figure, and one of such focus would do for groups, full-length, of several persons; but it would have to be one of great covering power, in proportion to its focus, such as those of the anastigmat type. If you require a rapid lens the stigmatic portrait would probably suit you, as its aperture is  $f/4$ . For large heads or busts we should advise you to have a longer focus lens. (2) The mercury-vapour lamp answers perfectly for portraiture. Of course, the tubes require handling with ordinary care, as they are glass, but of fair thickness. As good portraits are produced by one light as the other.

**RUSTY GRIFFO.**—We think the stain is exceptional for the developer you are using. It is difficult to remove any stain from the finger nails, but we would recommend you to try a few crystals of ammonium persulphate, rubbed on with a little water.

**FILTER.**—As a general rule, it is difficult to obtain the total of the separate actions of several dyes in one plate. This applies to bathing in a mixture of dyes or in three successive baths. The answer to your last question is, certainly not.

**J. W.**—The only way of remedying the negative is to send it to an expert retoucher for the obliterated figures to be knifed in. Of course, a mirror is the worst possible object to have in the

background when making a flashlight photograph, and the effect you have obtained would have been produced whatever the position of the camera, except perhaps one to the extreme right or left, a position, however, which would have been impossible in taking so large a group. Surely you could have covered the mirror with sheets of brown paper.

**J. A. C. (Bailieboro').**—We cannot undertake to carry out tests such as you mention. The reply given to our previous querist is correct, but if you obtain your supply from a photographic lab you may be certain of the photographic purity of the paper.

**S. E.**—You will not find any lens which will give you the depth you require with such a large aperture. The best suggestion we can make is that you use a lens of the longest focus possible, that is to say, as long a focus as the length of your studio will allow. This you can easily calculate by first finding the degree of reduction you require, and then working from the tables, pages 946, etc., of the "Almanac."

**DAMAGED BACKGROUND.**—I have a background which has been badly damaged by oil of some description (soaked through). Would you kindly inform me the best way to remove same in your next issue.—E. G. HARRIES.

You do not say the kind of background it is. If it is flatted we do not think that anything will remove the oil without at the same time disturbing the groundwork. You might, however, use benzol. If the background is in distemper, sponging with benzol will remove the oil without interfering with the distemper; but in any case we suspect some stain will be left.

**RESTORING POSITIVE.**—I should be greatly obliged if you would advise me if it is possible to restore the enclosed positive, and so the method of doing so. It appears to me that the image is still there but faded, and I am under the impression there is some method of intensifying same.—A. HUBBARD.

The positive is a Daguerreotype, and requires to be treated by the method we have frequently given in our columns. But unless you are accustomed to such work we would strongly caution you against attempting it, as the result will be probably disastrous to the original. You will see a note this week under "Analects on restoring Daguerreotypes."

**END OF REPAIRING LEASE.**—About two and a half years ago I bought the above business. My predecessor held a seven years' lease (which expires in June next), and it was transferred by the landlord to me. A few days ago the landlord called on me and inquired if I intended to renew the lease. I told him that I did not, as I had taken other and more suitable premises. He then told me that he should expect me to leave the place in good repair, as he could see it was not so at present, and it certainly not. Who is responsible for doing the repairs, seeing that I have only been in the place for two and a half years, and my predecessor occupied them for four and a half?—ANXIOUS.

Decidedly, you are responsible for the repairs, as you took over the lease, and, with it, all the responsibilities attached to it. Had the lease not been assigned over to you by the landlord the repairs would have fallen on the original lessee, and the landlord would have had no claim on you. The tail end of a repairing lease frequently entails a deal of trouble and expense.

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## The British Journal of Photography

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## SUMMARY.

Mr. C. Welborne Piper, as the result of experiments on the ferric-bromide bleacher, has found a means of removing from the former reducer its tendency to eat out faint detail. This result is obtained by the addition of bromide to the customary formula. (P. 319.)

Photographers' Premises.—Mr. Butt's article this week deals chiefly with matters of furnishing and decoration of the studio. (P. 320.)

Photographers' Fire Insurance.—Certain of the points to be borne in mind in taking out a fire policy on photographic premises are dealt with on p. 318.

Copyright Infringement.—The acts constituting infringement and the best steps to take in such events are the subjects of this week's "Copyright Conversation." (P. 322.)

Cinematograph portraiture is reported to have been revived by the Lamour company. The method is illustrated on p. 330.

Professor Pigeon, of whose so-called "Dixio" method (of producing stereoscopic photographs which may be of large size we give description) has suggested a new device for taking the pair of stereoscopic negatives in two large cameras, which nevertheless use their lenses at the proper stereoscopic separation. (P. 324.)

Mr. W. Thomas, writing on "Three Good Things," gives his experience of a new developer, finder, and type of printing paper. (P. 327.)

Mr. W. Michell contributes some useful notes on mounting pictures and precautions in making them. (P. 323.)

Captain Owen Wheeler, in a recent article, pronounces in favour of giving considerably less exposure in high-power telephotography than is indicated by calculating from the magnification. (P. 327.)

Exposure in Enlarging.—Commenting on Mr. Nixon's paper of last week we draw attention to the necessity of considering also even illumination of the screen. (P. 318.)

Three-colour screen-plates and developing tanks are among the novelties of the week. (P. 330.)

A further batch of correspondence on the portrait postcard appears on pp. 334 and 335.

A vivid side-light on cheap photography and the practice of portraiture by the semi-amateur is cast by an article in the "Daily Telegraph." (P. 326.)

## EX CATHEDRA.

### School Children and Cinematograph Entertainments.

The recent decision of the German school authorities with regard to school children attending cinematograph entertainments may serve as a timely warning to all those having interests in such performances. For a long time the authorities have been keeping a sharp eye on the cinematograph entertainments which are given in shops and halls in most of the towns and villages throughout the country. Complaints have been made that many of the pictures shown in these places are wholly unfit for children to see, and are likely to suggest evil to the young mind. We have ourselves seen pictures thrown on the screen in more than one German town, which, if not immoral, were certainly vulgar, and far from edifying, and as the greater part of the audience attending such entertainments were children, the action which the authorities have now been forced to take is very wise and necessary. While appreciating the educational value of a good cinematograph entertainment, the authorities at the same time warned those responsible for them that if any indecent pictures were shown they would have to take such steps as would prevent school children from attending these places. For a time there was some improvement, but gradually the proprietors lapsed into their old ways again, and now the order has been issued that school children are forbidden to enter places where cinematograph entertainments are given. Parents are asked to assist the authorities in carrying this out, and already cinematograph proprietors are complaining of the serious losses they are experiencing in consequence.

\* \* \*

### Filter Screens and Focus.

Dr. Lindsay Johnson, in "The Photographic Journal," discusses the variations produced in the position of the image by placing a filter screen in front of or behind the lens, and appears to come to the general conclusion that the differences are very small, owing to the fact that the colour screen is always, in practice, very thin, from  $1\frac{1}{2}$  to  $2\frac{1}{2}$  mm. This is, however, by no means always the case. Some of the finest optically worked screens obtainable are about one-quarter of an inch thick, and such a screen may make a very appreciable alteration in focus. The Lumière screen is about  $3\frac{1}{2}$  mm. thick, thick enough, in fact, to compensate for the reversal of the Autochrome plate when the screen is used behind the lens, and it does this with very close accuracy, although Dr. Johnson states that, "as the thickness of a Lumière plate is usually from 1.8 mm. to 2 mm., placing the colour screen behind the lens will not compensate for the reversal of the plate in the carrier, as it will only neutralise a little over a third of its thickness."

Evidently here he is not allowing for the thickness of the screen. A plate 1.8 mm. thick requires a screen 3.6 mm. thick for correction (allowing an index of 1.5), and this is just the thickness of the Lumière screen we have in use. It is generally understood that the Lumière screen was especially designed to effect this correction and so to meet the convenience of photographers limited to fixed focus cameras. According to our own measurements it can be relied on to effect the necessary correction with a very close approximation to accuracy.

\* \* \*

**Exposure in Enlarging.** Last week we published an important paper, by Mr. John Nixon, in which he described a method of ascertaining the exposure for an enlargement without the trouble of making test exposures. Any such method would be of great practical value, but there are difficulties in the way that do not seem to have occurred to Mr. Nixon. He uses a special meter, and the factors that he employs to determine exposure are: the speed of the bromide paper, the aperture of the lens, the number of times of enlargement, and the density of the negative. By a piece of cleverly applied mathematics he shows that exposure with a lantern follows the same general rules as with a camera, provided the source of light is focussed by the condenser on to the projector, and that the image of the source thus produced is always larger than the projector. This fact appears to be new, but it is quite correct. There are, however, some matters that Mr. Nixon would seem to have overlooked, though they seriously affect the question. It is of the utmost importance to secure even illumination on the screen, and with incandescent gas the conditions for even illumination appear to be much the same as with small sources of light. That is to say, the image of the light formed by the condenser must fall, not on the projector, but some distance in front of it. We tested this many times, and have just repeated the tests so as to be able to give measurements. Using an incandescent gas lantern, with an eight-inch projector and  $5\frac{1}{2}$  inch condenser, to enlarge a quarter-plate to a little over whole-plate, we find that the illumination is impossibly bad when the image of the light is formed on the projector. The back of the projector is about 13 inches from the centre of the condenser, but the image of the light source must be 19 inches away to secure an even disc. In this case, therefore, Mr. Nixon's theory breaks down, for an essential feature of it is the situation of light and projector at conjugate distances from the condenser. Another essential feature is the complete filling of the projector with the light from the condenser. Assuming that an optical system can be found with which the first condition is fulfilled, then this second condition prohibits the use of a projector of very large aperture unless it is also of very great focal length. Suppose the lens to be two inches in diameter, then the condenser must enlarge the image of the mantle by two diameters at least to fill the projector, and if the scale of enlargement is at all considerable only a long focus lens will serve.

\* \* \*

**The Aperture in Enlarging.** It is well known by all practical workers that with small sources of light the stops have not the same effect as in the camera. Indeed, it is often found that the aperture can be very considerably reduced without producing any effect at all on the quantity of light passing through the lens. With a large source of light, such as an incandescent gas mantle, the conditions are somewhat different, but they are not necessarily parallel to those which prevail when the negative is illuminated by diffused light. When using a source of light smaller than the negative and a condenser to cause the light to converge towards the projector,

the concentration of the light within the projector is affected. The ordinary rules assume that the whole area of the stop is uniformly illuminated, and if there is any concentration of light in the centre, as is almost invariably the case with the lantern, the ordinary rules break down as regards the larger stops. With an arc light this concentration is very marked. With the incandescent mantle it is much less so, but in most cases it is probably enough to affect the action of the large stops. The factor of aperture is, therefore, one that it is difficult to apply correctly in the case of the lantern.

#### NOTES ON FIRE INSURANCE.

INSURANCE against fire is one of the business safeguards which, we believe, is taken by photographers in the great majority of cases, for the report of a fire at a studio is almost invariably accompanied by the remark that the loss was covered by an insurance policy. Nevertheless, even supposing that a policy be among a photographer's documents, it by no means follows that he has done all that is necessary for the insurance of his property against fire. For the wording of many policies may considerably reduce the amount which the photographer will recover in the event of a fire, and it will therefore be our object in a few words to draw attention to one or two points which should be noticed in taking out or renewing a fire policy. Moreover, certain acts, of which the photographer may know little or nothing, may easily invalidate a policy on which he is regularly paying the premium.

To take first one example of this latter aspect of the question. In many policies there is a restricting clause as to the use of pipe stoves on the premises to which the policy applies, and not infrequently the length of piping permissible is mentioned. Any extension of this length at a date subsequent to the taking out of the policy renders the latter void, unless the sanction of the company is obtained, and though the cause of a fire may have been in no way caused by the stove, the company are, nevertheless, in a legal position to repudiate claims for damages. Other instances could be quoted in which alterations to the premises have been made in a way to increase the risk of fire. In all these cases the policy should be handed to the agent of the company for endorsement.

Coming now to one or two other points in the taking out of a policy, we may premise our remarks with the statement of the late Lord St. Leonard many years ago, to the effect that "few policies against fire are so framed as to render them legally liable. Generally the property is inaccurately described with reference to the conditions under which you insure. They are framed by the company, who probably are not unwilling to have a legal defence against any claim, as they intend to pay what they deem a just claim without taking advantage of any technical objection, and make use of their defence only against what they may believe to be a fraud, although they may not be able to prove it." Modern experience may be fairly admitted to confirm the late Justice's opinion, for, as a rule, insurance companies deal fairly with fair and honest claims, and yet that is no reason why the photographer should not take the necessary precautions in having his policy drawn up.

In the event, say, of a photographer insuring the contents of his premises for £500, he should understand that, supposing the whole to be totally destroyed, he must first prove the value of the goods which were in the place at the time in order to recover that sum. Usually the total amount assured is divided into sections, say, so much on furniture, so much on fixtures and fittings, so much on apparatus, negatives, etc. Assuming that the insurance for £500 is divided somewhat as follows: furniture £150,



apparatus £150, fixtures £100, and negatives £100, we will propose for the purposes of explanation that, in the event of fire, furniture and fixtures only were damaged to the extent of £150, whereas apparatus and negatives were totally destroyed, say to the value of £200 in the case of apparatus and £150 in the case of negatives, these insured amounts being due to additions to the establishment subsequent to the taking out of the policy. It will be seen that though the damage sustained actually amounts to the full sum assured, yet recovery can only be made for £150 for furniture and fittings, £150 for apparatus, £100 for negatives, that is to say, for £100 less than amount insured for, although the total damage actually really amounted to the full sum. The companies will compensate only according to the limits of the different policies mentioned in the policy, and do not allow one to be set off against another. This, as we have said, is the legal position, although we have come across more than one instance in which the insurance company has departed from the strict letter of the policy, and, being convinced that the insured was a reasonable and honest one, has done as an act of grace what was not legally binding upon it. It should, however, be borne in mind that in the event of a policy being supplemented to a notably increased value necessary additions should be made to the policy. In all policies it is usual to place a limit on the value of certain items insured. For example, in the case of photographic apparatus a limit of £10 is frequently made the value of any individual lens, although many instruments may be worth three or four times that amount.

Some, it is true, may be of much less value than £10, but in the event of loss their small value cannot be averaged with that of the more costly ones, and only their actual value would be paid. The same thing applies to negatives, a limit to the value of which is also put on them individually, sometimes the value only of a shilling or even sixpence, although amongst them may be negatives of very considerable value to the owners. It must further be pointed out that even in the case of the destruction by fire of a number of insured negatives, the holder of the policy would not necessarily obtain from the insurance company the full maximum price of each negative. He would have to satisfy the company that they were of that value, which, of course, a very large proportion are not.

As we have already pointed out, these maximum values may be enlarged at an increased premium, but a better procedure is to take out a separate policy, say, for lenses of greater value than £10, in which the names of the makers of the instruments, their numbers, and their separate values are entered; then, in the case of their destruction, their full value can be recovered. The same course may be applied to valuable negatives, which can be insured to any value, although at an enhanced premium. Another point in regard to lenses should be understood, and that is that although old lenses may be of the greatest value to a firm, the insurance company, which usually takes pretty good steps to inform itself in such matters, will demur to paying even the full list price of the lens at the time of its issue. Many lenses of the old triplet or orthographic class are now worth a fourth or less of their original price.

## SULPHIDE TONING AND A NEW REDUCER.

In connection with sulphide toning it has been suggested recently that weak results may be due to a loss of silver in the fixing bath if the print contains any traces of hypo. This is impossible, as the following experiment shows. A negative partially treated with a hypo fixing bath, and then, after minute's washing under a strong stream of water, it was placed in a mixture of ferricyanide and bromide. In the case of a negative treated with hypo bleaching was very slow, and the final result was a much lighter deposit than in the rest of the plate. In developing the negative it was found that the hypo-treated portion of the plate was very considerably reduced in density, and it was clear that some silver had been lost in the bleaching process. A paper print will, of course, hold a considerable quantity of hypo, and as it is not very easily removed, there is a certain element of risk with prints. It is, therefore, obviously advisable to wash very thoroughly and carefully before applying the sulphide toning process. Unfortunately, the popular ferricyanide and bromide bleaching bath has not the same action on hypo as the bichromate and hydrochloric acid, or the ferri-bleacher. Both these are powerful hypo eliminators, and will speedily destroy any hypo contained in the film, whereas the ferricyanide-bromide bath has no such effect. The latter is, however, undoubtedly the best bleacher of the three, and is one that is generally most serviceable. It is not impossible that many of the troubles met with in sulphide toning are due to the use of imperfectly washed prints that contain hypo.

### A New Reducer.

The fact that silver disappeared when the ferricyanide-bromide bath was used in the presence of hypo, naturally suggested that

it might be worth while trying the effect of the ferricyanide-bromide mixture as a substitute for the simple ferricyanide in Farmer's reducer. Ferricyanide alone attacks silver very slowly, and it occurred to me that this fact might possibly have something to do with the effect that "Farmer" has upon contrast. A mixture of ferricyanide and bromide acts far more rapidly, hence it appeared likely that it, when used in the reducer, would affect contrast in a different fashion. A first trial was so promising that I made a number of tests on various negatives, with the most satisfactory results. Equal parts of ten per cent. solutions of potassium ferricyanide and potassium bromide were mixed, and a few drops of this solution were added to two ounces of ten per cent. hypo. This reducer acted very regularly and steadily, and showed no specially selective action on the shadows, as is the case with the ordinary formula. It reduced the high lights, and brought out all their details without eating away the shadows, though the latter, of course, could be destroyed by applying the solution long enough, just as they could with any other reducer.

Without photometric tests it is impossible to say whether this new reducer has the same effect as persulphate, but it certainly has a very different effect from the ordinary Farmer's formula, and is also more reliable than the persulphate, which at times is very erratic in its behaviour. The first tests were made on waste negatives of no value, but when I found the solution acted so well I had no hesitation in applying it to more valuable negatives that were rather too hard owing to over-development, and in every case the effect was all that could be desired.

C. WELBORNE PIPEE.

**WARNING.**—Photographers in North Surrey and elsewhere who have been visited by a Frenchman of German appearance are warned to guard to him by one of our correspondents, from whom, on

charity being shown him, he absconded, taking with him a half-plate camera fitted with Beck lens, with six double dark slides, the whole packed in grey waterproof case.

## THE MODERN NOTE IN THE DESIGN AND FITTING OF PHOTOGRAPHIC PREMISES.

### V.

[Under this title we continue, with the following article, a series of chapters by Mr. Drinkwater Butt, F.R.P.S., on the principles which should guide the photographer in the external design and decoration of his place of business, and in the arrangement and appropriate equipment of its various apartments. Photography being essentially an "artistic" business, taste and style need to be more in evidence than is necessary in businesses which are frankly and wholly commercial in their character. Therefore, while it is not possible to prescribe any plan which can be followed in particular cases, general rules can be laid down in such a way that a photographer can take advantage of them in giving his establishment, both outside and in, an air of distinction, which is bound to carry weight with his townspeople, and must turn out to his commercial advancement. Of course, a fortune may easily be squandered on such adornment of the studio, but in these articles Mr. Butt will confine himself to such schemes as a photographer in a moderate way of business need not consider beyond his means. Moreover, the articles will be of assistance in pointing out how particular materials may be used, even on the smallest scale, in adapting or improving existing premises. The notes will conveniently be divided into four sections:—

Shop-front and Show-case.

The Reception-Room.

The Studio.

Planning complete Premises.

The last chapter will consist of a description of as complete a set of photographic premises as can be imagined—an establishment, in fact, which but few living photographers would feel justified in putting up. Yet the scheme in its various parts can be commended to the study of even the small photographer, on account of its detailing arrangements, which can be abstracted in pieces from their surroundings and utilised with advantage in businesses which are anything but magnificent in size.—Eps. "B. J."]

WE now proceed to deal with the fitting and furnishing of the studio, an apartment in many respects the most important in premises devoted to photography, and certainly the one which receives most attention, and criticism or appreciation, as the case may be, from the clients of the establishment. This being so, it is very surprising to find that in a very large number of cases it appears to be the place upon which least attention to appearances is bestowed, even by some very good photographers. In studio after studio that one goes into, one finds dirt, dust, and confusion; heterogeneous collections of more or less dilapidated apparatus, mingling with furniture which is old without being antique, and all the débris of a workroom mixing very often with some sort of apology for the proper appointments of a dressing-room. Shabby backgrounds, which even in their palmiest days were miracles of impossible perspective and preposterous decoration, hang on crazy frames behind "rustic" gates and stiles, and alongside "property" boats and ship's masts which no sailor would recognise; while in the midst of a litter of retouching-desks, printing-frames, etc., we find *papier maché* rocks unknown to any geologist, and pedestals, columns, and vases of forms quite undreamt of by the architect, filling up the space which is required for the proper posing of the sitter and the manipulation of the camera.

Into such places it is no wonder that daintily dressed ladies go but once, and send their children and friends not at all; or that no sitter feels at his or her ease, or, as a natural consequence, looks unconstrained or at home in the resulting picture. And yet I have known photographers possessing studios of this kind wonder at the lack of sitters and the slackness of business! As a remedy for this state of things, the first point to be insisted upon is the necessity of abolishing from the studio all kinds of working apparatus save that actually needed for the purposes of portrait-taking, to which the room should be wholly and solely devoted. Printing, retouching, and similar work not only cause dirt and litter, and take up valuable space, but also introduce into the studio the presence of assistants, who distract the attention of the sitter, and often cause the nervousness and self-consciousness which are so inimical to good photographic portraiture. It is a good rule to have no spectators—not even the sitters' friends, when they can be conveniently excluded—in the studio, and much better results are then generally obtained. The next

thing is to see that the actual working apparatus of cameras, reflectors, blinds, backgrounds, etc., is in perfect order and ready for immediate use, so that no defects may interfere with the swift, smooth completion of his arrangements which characterises the good operator.

As regards backgrounds, these are generally too many in number and too poor in quality, and so little conducive to good work though taking up a lot of room. For even a very large business some ten backgrounds at a time should be amply sufficient—such, say, as a light and a dark landscape, a light and dark interior, a couple of cloud effects, vertical and horizontal gradations, and flat light and dark tints of the well-known Empire cloth. A round dozen may be made up if the wall at one end of the studio is covered with a good bit of wood panelling (obtainable at a moderate price from Messrs. Houghtons Limited), and at the other with Lincrusta, Lynecastle, or some other of the relief decoration materials.

### A Suggested Complete Studio.

In the drawing of a studio to be given next week, there is shown at the east end a semi-circular recess, the wall of which would be treated with plain distemper or covered with a plain canvas, and this forms, with the ordinary lighting, a natural gradated background, the effect of which can be modified or altered by raising either or both of the halves of its canvas-covered framed ceiling, which are hinged at the centre, and when opened admit top-light from a skylight above, as will be seen from the plans to appear in a later issue of the "B.J." The front opening of this recess is 8 ft. square, or the size of an ordinary background, and behind the frieze above it would be fixed one or two rollers to carry examples which could be lowered in the ordinary way when required. The other painted grounds would be best mounted on one of the patent portable roller background stands, which can be readily moved into any position desired. One of these is shown in one of the photographs of a "North Country Studio" which forms one of our later illustrations. When any background becomes at all shabby or hackneyed by constant use it should be disposed of, and something fresh obtained in its place, so that the photographer's work may not become monotonous and stereotyped, as it often tends to do when the same backgrounds and accessories are used over and over again.



### Studio Backgrounds.

A great quality to be sought for in the selection and use of backgrounds is simplicity, with as little distracting as possible; and that little, correct as regards form and perspective, it being always to be remembered by the photographer, though it appears to be generally forgotten by the background painter, that it is only a subordinate, and not principal, part of the picture in which it is to appear. I have even known a photographer lament the necessity of placing a picture in front of the elegant background which was really "a picture in itself." I am quite aware that it is very difficult to find painted backgrounds of the simple and broad character which I am advocating, and that it is still more difficult to get them done to order; but still, by constant diligent search through the dealers' specimen books they sometimes to be discovered, and when found should be snapped up, as the chance may not soon occur again. A very decent specimen, obtained in that way, appears in its accompanying foreground in one of the photographs of "North Country Studio" just referred to.

### Have Accessories "Correct."

Which the same principles hold good with regard to accessories, especially those of an architectural nature. Occasionally comes across a decent pedestal or balustrade, but when the maker of accessories soars to columns, piers, and even wrought-iron gates, then his productions become fearful and dreadful indeed. Fortunately, these things are not very often needed for ordinary sitters in modern dress, but any examples which the photographer may find it convenient to have for personal use should at least be chosen for their correctness of form and style, and when not in use may be very conveniently kept in some adjacent store, and not allowed to lumber the studio more than can be helped.

### "Homelikeness" the Aim in Studio Furnishing.

The most general and useful accessories are, however, those which take the form of articles of furniture, and with regard to these it may be at once said that the objects to be most desired are usually those made especially for photographic purposes, not only because they are to be found in so many studios, but also because they are generally heavy, ugly, and quite unlike any furniture which clients would probably have in their own homes, and so feel (and look) most at home amongst. Chief amongst this class of article is the so-called "posing chair," which takes to pieces and fits together again in all sorts of odd and wonderful ways, something like that piece of furniture which, according to the poet, "contrived a double debt by, a bed by night, a chest of drawers by day." In none of its permutations, however, does this article look like any piece of furniture, nor does it feel comfortable to the sitter, or, as far as I can see, facilitate the work of the photographer in posing him. For vignettes a narrow-backed chair revolving on a stand is certainly a convenience, as on it a client can be easily turned a little as the exigencies of lighting and point of view requires, but, apart from this, none of the "bags of tricks" so much affected by some not very successful photographers, who trust rather to mechanical contrivances than their own skill, are worth bothering with. What is wanted in a studio is simply a good variety of furniture which a photographer's clients are likely to have in their own houses, amongst which they will look most at home, and which can always be treated so as not to become obtrusive in the picture or detract from its artistic effect. Longfellow's dictum, "That is best which is nearest; shape from that thy work of art," applies here in other cases. Most of the articles should be those found in ordinary dining and drawing-rooms, or even more preferably,

in the "parlours" of our not too immediate ancestors. The modern revival of interest in furniture and decoration has fortunately swept from our houses the horrors of the "Early Victorian" period, the mahogany and horsehair, the white-and-gold wallpapers, the veneer and sprawly, coarse carving, the beads and Berlin wool work; and it is well that our studios should reflect the better taste now to be found in our houses. Of course, in furnishing a studio no uniformity of style can or should be attempted, as it is necessary to have a good variety of accessories to suit the various classes, ages, sexes, and costumes of sitters; but each piece should be true to its own style and artistic in form, and all should lean rather toward simplicity and severity than to elaboration and gorgeousness if they are to take their proper places as subordinate objects in pictorial schemes of composition, and not assert themselves at the expense of the real subject of the picture. I have known some photographers either very proud of their elaborate furniture, or incapable of posing a human figure by itself, so overload their portraits with accessories of all kinds that the photographs really ought to have been inscribed with the legend, "Puzzle: Find the Sitter!"

Nearly all the so-called antique styles of furniture are useful in a studio, it having been reserved for the mid-nineteenth century to combine both ugliness and bad workmanship; but, of course, nowadays really good examples of the earlier styles are becoming every day higher in price and more difficult to obtain. In default, however, of original pieces by Chippendale, Sheraton, or Hepplewhite, or of the Georgian, Queen Anne, Jacobean, or Tudor periods, there are now exceedingly good reproductions to be obtained correct in form and almost, if not quite, equal in workmanship to the originals themselves, from such firms as Waring and Gillow, Heal and Co., or Liberty's, of Regent Street.

As regards chairs and tables, those mentioned in our last article on the reception room would also be of service as accessories in the studio, the furniture for which should be almost all chosen for its lightness of effect and generally artistic lines, which are the qualities required in place of the heaviness and ugliness of the fittings of so many of the operating rooms of the past.

### Genuine Secondhand Old Furniture in the Studio.

In the large design for a studio interior, the furniture shown is partly modern and partly antique, as also in the photographs of the "North Country Studio," in one of which latter the black seventeenth-century armchair is a specimen of the bargains which may even yet (though with far less frequency than of old) be still obtained by the diligent seeker after the artistic and the antique, it having been picked up at a farmhouse sale for the magnificent sum of half-a-crown. The frame of the mirror hanging over it in the photograph cost only sixpence more at a secondhand shop, while the old earthenware tankard of grey and blue which appears, though somewhat indistinctly, in the centre of the corner cupboard over the staircase in the same picture cost nothing at all, the miscellaneous auction "lot" of glass and china of which it formed part having been at once resold, minus the tankard, for the price originally given for the whole!

### Comfort and Taste in Studio Decoration.

To pass on, however, to the fixed decorations of the studio, it may be laid down that the general scheme, in most cases, should be a light and airy one, not only that the apartment may, by its brightness and cheerfulness, have a good effect upon the spirits and consequently also upon the expressions of the sitters, but also that all the light possible may be obtained when wanted for large groups or other work requiring plenty of illumination. Superabundant light, whether direct or reflected, can be easily shut out or cut off by blinds or screens, while a naturally dark or gloomy interior cannot be lighted at will.

Therefore, speaking generally, ivory or creamy white may be recommended for ceilings and woodwork, and warm soft greys for the walls, any coloured decoration being sparing in quantity and worked out principally in dull pale yellows, buffs, and blues. This scheme was followed in the "North Country Studio," the ceiling being creamy white, the woodwork of the same tint slightly picked out with ochre, the walls covered with an ingrain paper of a warm grey, with a frieze of the same having a simple design in pale ochre, dull blue, and light red. The floor was covered with a plain warm grey cork carpet, with mosaic pattern border, on which the studio camera, background stands, etc.,

moved easily and noiselessly. In a more picturesque studio, a cork carpet might have been replaced by a parquet floor, or the effect of the latter have been obtained in an inlaid linoleum, which is also a capital material for the covering of studio floors, especially in busy establishments where there is much traffic. Large carpets are not generally satisfactory, as they are difficult to keep clean, uneven in wear, and more often than not unpleasantly obtrusive in pattern, to the great detriment of the full-length pictures or groups in which the carpet is included.

DRINKWATER BUTT, F.R.P.

(To be continued.)

## CONVERSATIONS ON COPYRIGHT.

[COPYRIGHT.—The sole and exclusive right of copying, engraving, reproducing, and multiplying any photograph of the negative thereof by any means and of any size. [Extract from the Copyright (Works of Art) Act (1862).] The present (fourth) chapter of this series of notes deals with perhaps the most important part of copyright law, viz., the ways in which a photographer's copyright may be infringed, the ways in which a photographer is liable to infringe the copyright of others, and the rights and penalties which apply in these circumstances. Those who desire to acquaint themselves completely as to copyright dealing (I.) with ownership of copyright, (II.) with registration of copyright, and (III.) with sale and part sale of copyright.

### IV.—INFRINGEMENT OF COPYRIGHT.

Q.: By "infringement" is meant, I presume, the unlawful use of a copyright photograph—that is to say, making copies and enlargements?

A.: The Act distinguishes between two classes of infringer. The first and most common are those who commit, or cause to be committed, the unlawful copying of a photograph in which there is copyright. The second are those who import reproductions of a copyright photograph, which they know to be unlawful, into the United Kingdom.

Q.: In the second case the infringer appears to be held responsible only when he is aware of the unlawful nature of the goods he is selling. But what about the newspaper (or photographer) who copies a photograph not knowing, and not able to find out, whether there is copyright in it?

A.: That is so. The importer is held guilty of infringement only when he is proved to have acted with knowledge of the nature of the goods. But in all other cases, viz., those in which acts of infringement are done, or caused to be done, ignorance is no excuse for infringement.

Q.: What are the acts which constitute infringement?

A.: The Act says that no person, "not being the proprietor for the time being, shall repeat, copy, colourably imitate, or otherwise multiply for sale, hire, exhibition or distribution, or cause or procure to be repeated, copied, colourably imitated, or otherwise multiplied for sale, hire, exhibition, or distribution."

Q.: Repeat or cause to be repeated? Then this means that in the case of my making an enlargement of a photograph I am just as liable for any infringement as the person giving me the order.

A.: You are. In a case of infringement in such circumstances both you and your customer might be proceeded against by the owner of the copyright.

Q.: Equally, in the event of an infringement of a copyright of mine by, say, the issue of a poster, both the firm which ordered the poster and the actual producer are liable to action for infringement?

A.: Certainly; this clause in the Act is a two-edged sword which cuts both ways.

Q.: In quoting just now from the Act, you describe a "colourable imitation" as an infringement. What is a "colourable imitation" of a photograph?

A.: The term should almost explain itself. It means a copy

which is not exact: which differs from the original in certain particulars. Fortunately it is that the clause occurs in the Act, otherwise it would be difficult for a photographer to obtain redress in the event of his photograph being redrawn with slight alterations by artists.

Q.: I take it, then, that a copy is none the less an infringement even if it differs from the original in size or other respects?

A.: Certainly; that is so. An enlargement, a lantern-slide by reduction, a three-colour reproduction, and a wash-draw or engraving, are all equally infringements of a photograph made without the permission of the owner of the copyright.

Q.: Of course, a copy in one process (or colour), say, carbon, is an infringement of a photograph in another, e.g., platinum.

A.: Most certainly. So long as a copy can be proved to be a copy of all or part of the photograph it (the copy) is an infringement.

Q.: The Act, I see, defines other things besides sale in connection with the disposal of copies.

A.: Certainly. It is not necessary to sell copies in order to constitute them infringement. The Act says "for sale, hire, exhibition, or distribution." "Exhibition" clearly includes the case of a photographer who makes (or causes to be made) an enlargement from a negative he has taken for a customer and been paid for in the usual course. As we learn from "Conversation I," the copyright is the customer's, and the photographer has no right to make a copy to be displayed or exhibited (not even in his own shop) without the customer's consent.

Q.: On the other hand, I take it that in the case of a person to whom a sitting has been given, he is guilty of infringement if he gets made an enlargement of the photograph. For example, I recently obtained a sitting from a well-known actress who was performing in my town with an amateur company. I registered the copyright, and every copy was stamped "Copyright." Now an enlargement of the same photograph has been presented to the lady by a member of the company. An infringement of my copyright, is it not? But as I do not know who made the enlargement, I would like to ask if the person who ordered it to be made is equally liable.

A.: Certainly; the person who gave the order is covered by the wording of the Act—"cause or procure to be repeated."

Q.: Another case of a third party I would like to mention. A person (A) purchases a print of mine and sends it to



newspaper, where it is reproduced under his name. Is the infringement the work of the newspaper people or the person who offered the photograph to them?

A.: The person A cannot be said to have caused the reproduction of the photograph in the newspaper. This is the work of the editor or proprietors, and they alone are liable in this instance.

Q.: The person (A) in the case I have just mentioned excused himself by saying that he thought he was entitled to allow a print which he had purchased to be reproduced.

A.: Of course, that is ridiculous. Buying a print has nothing to do with acquiring the right to copy it, unless there is some reason to think it is a photograph in which there is no copyright.

Q.: I suppose it is fair to assume that there are photographs which can be copied with impunity?

A.: It is safer and nearer the truth to assume that there are none. Even if a photograph is not registered, it becomes an offence to sell copies once the copyright has been registered, and therefore it is foolish to trust to the owner of the copyright for finding out.

Q.: What is the best course to take when a photograph of mine has been copied, say, by a newspaper or postcard publisher?

A.: You must first convince yourself that you are the owner of the copyright. This is the case (1) if you took the photograph on your own account without payment, or (2) if the copyright was reserved to you in writing at the time the photograph was taken, or (3) if the copyright was assigned to you by agreement. Also, in order that you should be in a position to take action in respect of the photograph, you should have it registered before the infringement.

Q.: Suppose the copyright is mine, but that I have not registered?

A.: Legally, you have sustained no wrong by the infringement; but if you register at once, you then obtain certain legal powers which may still be considerable. You cannot claim penalties, but you can claim damages, but only those sustained subsequent to the registration.

Q.: One is as good as the other, isn't it?

A.: No. To obtain penalties you have only to prove the infringement; to get damages you have also to prove the damage—very often not an easy matter.

Q.: At any rate, you advise me to register the photograph at once, and then?

A.: You should then write to the infringing parties a letter in which you show that you assume the infringement took place through carelessness or ignorance of your rights—not from a desire to steal something from you. In other words, write a courteous note asking for the adjustment of the matter.

Q.: Should I name an amount for which I would be prepared to settle the matter?

A.: Unless you have fully decided not to take any legal action, you should on no account name any sum, because the demand might prevent your securing damages, and if you were afterwards claiming damages the sum you had named might be held to be the amount at which you estimated the damages.

Q.: But if I was decided on either settling without legal action or letting the matter drop could I not offer to take a sum in settlement?

A.: Some photographers have done well by making it a rule to accept double the usual fee for photographs used without their permission.

Q.: As a matter of fact do I not read in the Act that the penalty for each offence is a sum of money not exceeding £10?

A.: That is so.

Q.: Well, if a newspaper with a large circulation is made to give me the smallest sum for each infringement, viz., one farthing, the total would be a large amount out of its pocket.

A.: You are wrong in assuming that a coin of the realm must be paid as penalty for each infringing copy. Formerly the judgments were on that basis, but since 1901 it has been held that the court may award a lump sum, which, if divided by the number of offences, will give for each offence a fractional sum of money smaller than any coin of the realm.

Q.: There is one last point I would ask your opinion on. How do I stand as regards another photographer who copies my local views by placing his camera in the same position as those originated by me?

A.: Hard as it may appear, you have no remedy whatever. He is not copying your photographs, though virtually he might just as well—the injury to you would not be less. But clause 2 of the Copyright Act is very clear on this point. It upholds “the right of any person to copy or use any work in which there shall be no copyright, and to represent any scene or object, notwithstanding that there may be copyright in some representation of such scene and object.” This applies to particular selections of a landscape, as well as to paintings such as of old masters, the copyright in which has expired.

## NOTES ON MOUNTANTS.

### The Starch-Paste Mountant.

It may seem a little late in the day to say anything about the methods of mounting photographs of the various kinds at present in vogue; yet, judging from the questions that are frequently replied to in the “Answers to Correspondents” columns, it occurs to me that a few notes may not be altogether out of place, while they may be useful to some, especially to recent recruits in the ranks of our art-science. The chief considerations in the selection of a mountant are that it must have no deteriorious action on the picture, that it should be convenient to use, and at the same time thoroughly adhesive. So far as silver prints are concerned, this matter is of serious importance. It is so much so, however, with carbon or other pigment pictures; for with them almost any mounting medium may be employed with impunity. A mountant that might cause a rapid deterioration of a silver print would be quite inert were it used for a carbon print. The same might be said, though perhaps in a less degree, with reference to platinum prints.

Undoubtedly the most generally employed mountant at the present time is starch paste, and as an all-round adhesive for photographic purposes it is hard to beat. Yet it has its inconveniences, like all other cements, though they are but trivial. One is that the paste will not keep. Starch paste when made does not keep more than a day or two, as it has a tendency to become watery, and then loses its adhesive properties; furthermore, if used stale, it is liable to act injuriously on silver prints, particularly if they are on thin paper. Starch paste should be made with the best white starch, and be used the day it is made, then it is in its best condition in every way. If pictures on thick paper, in the dry state, are mounted with starch there is, in inexperienced hands, sometimes a difficulty in getting them to stick firmly at the edges. This difficulty can be got over by making the paste thicker and rubbing it well into the paper, particularly at the edges. If the prints are

mounted wet there is sometimes a distortion produced through the mouter straining the paper in getting it into position on the mount. One sometimes sees prints that look very much as if they had been badly trimmed; this is often not due to bad trimming, but to the paper being stretched in the mounting. Another trouble with starch as a mountant is that if the print is put upon thin cardboard, or thick paper, the margins where dry are cockled. This trouble, however, is inherent, more or less, to all adhesives of an aqueous nature. When large pictures on thick paper have to be mounted the best way is to make the starch thicker than usual, and rub it on with a good size piece of sponge, distributing it evenly all over. The print should then be allowed to rest for a minute or so to allow the paper to expand to its fullest. If, then, the surface shows that any portion appears to have become partially dry by absorption the whole should then be lightly gone over again with the sponge before it is laid on the mount. In this way creases, due to the unequal expansion of the paper, are completely avoided.

#### Gum as a Mountant.

Gum and dextrine are very convenient adhesives, but the latter can at once be put out of consideration from the fact that the commercial varieties are almost invariably acid, and therefore would be likely to have deleterious effect on the prints. Gum, on the other hand, is good, though of late years it has not been held in good repute, probably because it used often to be employed after it had become decomposed, sour, or mouldy. Some little time back an editorial note referred to this subject, and mentioned some silver prints that were mounted with gum fifty years ago, and were in a perfect state. I myself have seen some nearly as old, and they show no signs of fading. If gum be used, however, it should be good Senegal or Turkey gum, and be freshly dissolved, unless when it is dissolved a small quantity of some antiseptic is added, such as a drop or two of carbolic acid or oil of cloves. Then it will keep good for many weeks, and be ready for use at any time. What is sold as "office gum" should be studiously avoided, as one never knows of what it consists; sometimes gum is conspicuous by its absence. I have heard that even bicloride of mercury figures in some of these office gums as a preservative. If such a cement were used for mounting silver photographs, most of us know what would be the ultimate end of the pictures.

#### Gelatine Mounting Mixtures.

Gelatine is a most excellent mountant for photographs of all kinds, and it is less likely to cockle mounts on thin card than

either starch or gum. But the right kind should be selected or it may be found inconvenient in use. What is required for the purpose is a pure gelatine of poor quality—as a gelatine. This description may seem a little paradoxical to some. By low quality is meant one that does not yield so stiff a jelly with a given quantity of water and does not jellyify or set so low a temperature as do the higher grades, such, for example, those of the character employed for emulsion purposes—Nelson's "X opaque," and others. It is from the use of the latter kind that many have not been able to get on satisfactorily with gelatine as a mounting medium, although they imagined they were using the best for the purpose simply because it was the most expensive. The best I know of for our present purpose is either Cox's "soap" gelatine or Nelson's "No. 2 soluble." These are both pure—that is, free from acid and other impurities—inexpensive, very adhesive, and set very slowly. If those of the highest grade just alluded to were employed there would be the difficulty that the solution would become "jellied" before a large surface could be coated, and then there would be little or no adhesion. Many of the fine-looking, colourless foreign gelatines are acid, and, therefore, apart from their quick setting properties, they are unfit for mounting silver prints with. With suitable gelatines, such as we are speaking of, a considerable proportion of alcohol may be introduced into the solution in place of water. With this addition the mountant, when used for prints on thin mounts, causes cockling of the margins scarcely at all. In the "Almanac," page 834, a formula is given for such a mountant. In place of the gelatine mentioned I prefer the Nelson's "No. 2 soluble" or Cox's "soap." With either of these the proportion of water may be decreased and that of the spirit increased beyond those given, so that the risk of cockling is still further reduced. If the formula were followed with a high-grade gelatine the latter would in great part be precipitated on the addition of the spirit. The solution with the alcohol keeps well by reason of the antiseptic properties of the spirit, and it only requires the vessel containing it to be placed in warm water, when it is at once ready for use.

Even such desultory notes of the above cannot be penned without a reference to dry-mounting, that most perfect method of attaching the print to its support. For safety and certainty the process admittedly outdistances other mounting methods, and its adoption inevitably follows the desire to present the finished photograph to the very best advantage. The appliances and materials now procurable for the process may be said to have brought the method within the reach of all.

WM. MICHELL.

## STEREOSCOPIC PHOTOGRAPHY BY THE DIXIO METHOD.

The ingenious system of stereoscopy by which large prints—up to, say, 7in. by 5in.—may be used has been already mentioned in our pages. M. Pigeon, of Dijon, the inventor, now sends us a description of the methods employed in making the negatives and prints for the Dixio stereographs, some extracts from which will be of interest, as the processes employed may be adopted with or without the inventor's specially designed apparatus.

The Dixio system, it should be explained, requires that one of the prints should be reversed as regards right and left, and in order to obtain a pair of negatives—one of which is so reversed—a special camera is made to M. Pigeon's design by M. Gilles, of Paris. This, shown in Fig. 1, consists of a twin-lens instrument, one-half of which is fitted as a reflector camera, the mirror serving not as in an ordinary reflex camera merely for the focussing of the subject, but for the actual taking of the negative on the plate. This special instrument is, however, as we have said, unnecessary for the working of the Dixio system, inasmuch as reversal of the print may be introduced at several subsequent stages.

In the first place, the pair of negatives may be taken upon roll or cut film and one of them printed from the reverse side of the film.

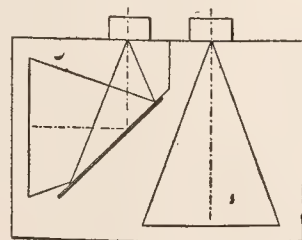


Fig. 1.

Or, again, the print from one of a pair of glass negatives may be taken in single transfer carbon and a reversed print thus obtained.



however, it is desired to prepare two prints by the same process by glass negatives, one or other of the negatives can be removed from its support and laid down again, with the reverse in contact with the new support. For this purpose M. Pigeon suggests to employ a process, in which the dry negative is placed in solution of

Water .....	100 parts
Commercial formaline .....	15 parts
Soda carbonate .....	5 parts

which it is allowed to remain for about ten minutes. It is covered over with a tuft of cotton wool on removal from this bath allowed to dry, without artificial warmth, which it does in from



Fig. 2.

twenty-four to forty-eight hours. When dry a penknife is used to cut the gelatine through to the glass at a distance of about 1-16 in. from the edges of the plate, and the gelatine film can then be removed. It can be printed from either side, and is kept between glass plates under a slight pressure, or it may be cemented to a glass support by means of a 5 per cent. solution of gelatine. As far as we have spoken of contact printing, but it is obvious that simply reversing one of the negatives in the enlarging carrier as used in contact printing may be made as readily as one produced in the ordinary way.

In trimming the prints some little care is necessary. One print is held flat and some prominent object near to the right-hand side is used. By means of a pair of compasses or a strip of paper the

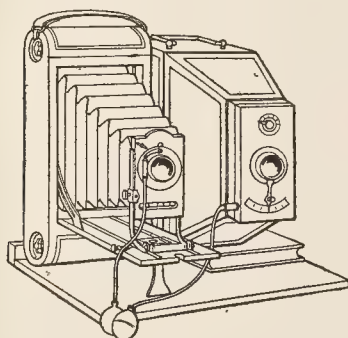


Fig. 3.

distance of this point vertically above the lower edge of the print is measured. Then the same distance of the same object in the second print is marked off on the latter. A similar series of operations being done in the case of a second prominent object in the print, the lower side of print No. 2 is trimmed along a line formed by joining the two points thus obtained. The print is then ready for examination in the special pattern of Dixio stereoscope, for a description of which we would refer our readers to the "Almanac," p. 609, Fig. 27.

advising the use of a camera of the 13cm. by 18cm. size, which is actually the American 7 by 5, but a little larger than the English

half-plate, M. Pigeon suggests the following method of making a pair of negatives suitable for the Dixio stereoscope.

Two lenses are provided of the same focal length, say of 6 in., and are mounted on the front panel of the camera, which is provided with the usual stereoscopic division. A plate bearing two negatives is thus obtained, one of which—that made by the left-hand lens—it is usual to reverse.

In making use of two separate cameras placed side by side on the same support, and provided with lenses of the same focal length, the worker has the advantage of being able to adopt any desired separation of his lenses, and so adjust the degree of separation to that necessary for dealing with objects different distances from the camera (Fig. 3).

Another advantage of the two separate cameras is that both can be laid on their sides and a stereoscopic print thus obtained at a greater separation, but of the landscape form, a latitude which is not permitted by a single camera, in which both pictures must necessarily be of the upright shape.

M. Pigeon suggests a very ingenious device for making large stereoscopic prints with two cameras while still preserving the proper stereoscopic separation of the lenses. He places both cameras on a board, as shown in Fig. 3, but with the axes of the two lenses—the focal length of which is, of course, the same in each case—at right angles. A mirror is placed in front of one of the lenses at an angle of 45 deg. to the axis, and the arrangement,

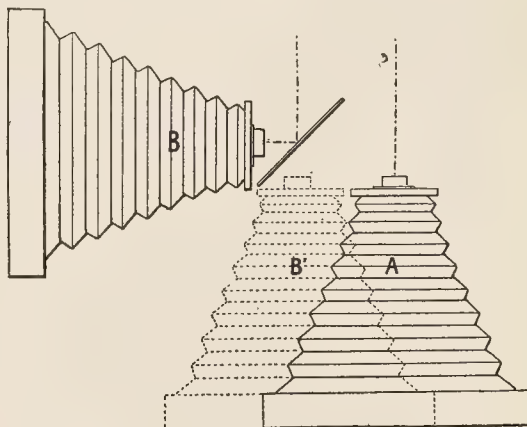


Fig. 4.

as shown in Fig. 4, causes the camera B to act as though it actually were in the position of B<sup>1</sup>.

The advantage of this method is that large prints may be taken with the proper stereoscopic separation.

This plan has the advantage that one of the negatives is obtained reversed, and, as for the mirror, a piece of good mirror glass has been found to give satisfactory results.

M. Pigeon suggests that a convenient way of entering upon his system is for two friends to use their cameras together, each, of course, having a lens of the same focal length. Both could make use of the pair of negatives thus obtained, and the prints would thus be obtained at a reduced expenditure.

M. Pigeon also points out that a single camera, which is given quite a slight displacement, may be used for producing the pair of negatives.

It will thus be seen that the salient feature of the Dixio system are, first, the facility of preparing each print either with one or two cameras, and in such a way that the subject may be taken either in the so-called portrait or landscape way of the plate. Moreover, as M. Pigeon points out, the form taken by the stereoscopic prints gives greater facilities in using photo-mechanical reproductions of such prints in a form in which they can be handled by the publishing trade conveniently. It is not too much to hope that a proper appreciation of these facts will lead to a revival of the stereoscope among the general public.

## EAST-END PHOTOGRAPHY.

(An Impression of Cheapest Photography, from the "Daily Telegraph.")

"LADY, lady, you dunno wot you look like till you've 'ad your photo taken." Touchy people might think that a doubtful compliment. Cautious people would hardly reckon it an inducement to face the camera. But the bland and bearded gentleman with the handbills knew his public. Two gorgeously-attired maidens—Solomon in all his glory was certainly not arrayed like one of these—lingered to listen to the voice of the tempter, and turned to the glass doors which bore the mysterious legend "Weather no object." Within, "twelve beautiful portraits" of their fair faces could be obtained for 3d. As a guarantee of good faith, the window displayed what at a little distance looked like a large draughtsboard, but on nearer examination resolved itself into a kind of crazy quilt composed of the physiognomies, reduced to postage-stamp size, of the fair women and brave men of the locality. Few of us, perhaps, would look our best on a postage stamp. A national portrait-gallery on that scale would turn the most amiable of men into a misanthropist. The process of reduction to the farthing size is one which few of us are designed to face with dignity. But there was no reason why anyone with money in her purse—and the two gorgeous maidens were certainly carrying a good deal on their backs—should limit her ambitions to the farthing order of art. Six of the carte de visite size might be had for sixpence and six cabinets for a shilling. At this rate one might rely on being adorned by the whole dignity of human nature and something more if necessary. The triumphs which decorated the window showed an array of gentlemen, diverse, indeed, of feature, but all alike of an unspeakable majesty of demeanour and amplitude of coat. They were not happy. Uneasy lies the head that fronts a lens. But they were aware of the solemnity of life and their own high part in it. The portraits of the fair ranged among them struck, as is fitting, a lighter note. They were prepared to smile even in the jaws of the camera, and they had done it with an earnestness beyond all praise. There are stories of the martyrs making merry upon the rack. Any who doubt them should examine the penny photograph and be confirmed in faith.

The alluring gentleman in the doorway spoke with tongues. His clients were often more at ease in a language not English. Out of the leisurely throng which spread itself over the broad sunlit street he marked with unerring instinct those who came as ready victims. It was not by any special splendour of attire, for the roadway flamed like a bed of pæonies. Probably he detected a certain bashful air,

something akin to that which betrays to the experienced eye the victims of the honeymoon. At all events, when he plunged with handbills and his voluble polyglot into the midst of the crowd rarely emerged without captives. They were not caught singly. Into the ark so to the photographer's they go in two by two. When they came out there was a certain exhilaration, a certain exultation visible in their gait, as of those who had dared a doughty deed and emerged victorious. As an innocent stimulant there are few to be getting photographed. The place of the usual headache is taken the moment when you have to look at the result. But a sufficient optimism will carry you through even that. Whatever the cause there is no doubt that getting photographed ranks high among the holiday amusements of the East End. Not only within the studio but out in the open gallant parties went under a fire. Turn out on the main roads into those exceedingly quiet, exceedingly respectable streets which surprise those who only know the legendary East End and behold an amateur directing the battery of a cheap camera upon restive friends and relations. It is hard to drive a team of giggling sisters and cousins when the small folks of the neighbourhood are commenting on the probable result. It is hard to impress the licensed jester of the neighbourhood with a sense of his responsibilities to art when he has before him such an alluring prey. With such trials as these, complicated further by the intense interest of all the matrons of the locality which brought sage heads poking out of every window to offer caustic criticism or hardly less appalling advice, it says much for the constancy of human nature that the amateur persevered. After all, it is, perhaps, as well that he should have so many excuses for the result, for the sun was blazing full into his lens. Some there were who tried more elaborate studies. In one secluded square an interesting family mounted in a pony cart were the tremulous victims of a young man with a hysterical manner and a ponderous camera that was probably the oldest member of the party. It was unnecessary and unkind that a ribald person should revive for their benefit the classic melody of "Knocked 'em in the Old Kent Road." Nearer the City there was a glimpse of an operation upon some good people in a motor-car which was long past its first wild youth. They do say that there is a thriving business in hiring motor-cars for aspiring people to be photographed in. But which of us would be happy without a borrowed plume or so?

## EXPOSURE IN TELEPHOTOGRAPHY.

(A Paper in the newly founded "Telephoto Quarterly.")

A SHORT time back a writer in the "British Journal of Photography" expressed a wish that someone would make some definite statements as to correct exposure with the telephoto lens. That is a wish which will be re-echoed by most, if not all, telephotographers, and, at the outset of this short article, I want to disclaim any idea of coming forward with those definite statements so much in demand in this interesting and important connection. All I propose, or am able, to do is to give the result of considerable personal experience and to offer a few remarks which I hope will be, at any rate, suggestive and lead to communications from other workers. Perhaps by careful comparison of notes we may, even in the course of the next few months, arrive at something really definite. Indeed, it is largely in order to assist in the gradual solution of telephotographic problems of this sort that "T.Q." has been instituted, and I earnestly trust that my readers will in this particular instance be more than ordinarily ready to allow their experience to be collated with my own.

Speaking broadly, I do not myself often make mistakes in regard to telephoto exposures, although I am constantly at work making tests with different lenses under very varying conditions. But I frankly own that my calculations are neither very definite nor scientific, and sometimes depend, perhaps more than they should

do, on that illusory condition, the appearance of the image on the focussing screen. Still, there is a sort of method in the process, and, as it seems to work, I had better, perhaps, try simply to describe it.

### Telephoto Exposures by Rule.

In the first place, it is safe to say that there is a normal condition at which one can rely pretty fully on the old rule that exposure in telephotography is the exposure with the positive lens multiplied by the square of the magnifications. Such normal condition may be stated as a clear day, a magnification not exceeding about twelve diameters, an object not more than, say, 500 yards distant, and positive lens not stopped down to a smaller aperture than  $f/11$ . Even in this normal state of affairs there is always the reservation that the exposure for the positive lens only must be calculated with reference not to the general view, but to the object which it is intended to telephotograph. Suppose, for example, we were telephotographing a ship quarter of a mile off at sea, the magnification being such that the vessel nearly filled the plate. Now the right exposure with the positive lens only at that distance might be only a two hundredth of a second, because in any general view of this sort the sea would be a more important feature than the speck of a ship. But if one only multiplied the two hundredth of a second by



the square of the magnifications, the chances are that the telephoto-graph of the ship would be considerably under-exposed. In this case the exposure with the positive lens only must be reckoned on the assumption that the ship and not the sea is the principal object. Very possibly the recalculation would mean multiplying the former result by three or four. This preliminary instance shows how difficult it is to make "definite statements" with reference to telephoto-graphic exposure.

### Exceptions to the Rule.

The first deviation from the normal that needs to be considered is distance, and here the difficulty of being definite becomes very great indeed, for the question of distance in this country is almost always complicated with that of atmosphere, and the latter to the telephotographer is often most perplexing. Speaking generally, I find from my own experience that the appearance of the object on the viewing screen is frequently a safer guide than any system of particular calculation when very distant objects are being photographed. Where the distance produces the same sort of hazy appearance as is produced in an ordinary photograph by a mist or light fog, then the exposure must be considerably reduced, though, as a rule, unless a yellow screen is used, it is not easy, however correct the exposure, to telephotograph a distant view at all satisfactorily except on a very clear day. The reduction, if made, is entirely a matter of judgment, but perhaps experiment in other hands may show that in ordinary cases of distance a modification of Howard Farmer's table can be practically applied. A second modifying factor may be aperture. As long as we do not stop the positive to a smaller aperture than  $f/11$ , or, when working at lower magnifications (*i.e.*, about 9 diameters),  $f/16$ , there does not seem to be any need to depart from the ordinary rule of f/11, with the positive at  $f/11$ , twice the exposure needed if the negative were  $f/8$ . But with very small stops the amount of light needed does not seem to decrease in due proportion. Perhaps this

is due to the fact that the present method of stopping a telephoto lens is a doubtfully scientific one. It may not be feasible in a telephoto system to place the stop at the nodal point, which is a long way in front of the entire lens. But very possibly it would be better to have it—as in the case of the Zeiss telephoto lens—between the positive and negative elements.

### Exposure according to Magnification a Fallacy.

In working at very high powers the rule as to multiplying the ordinary exposure by the square of the magnifications seems to go altogether wrong. Personally I often give only half the calculated exposure, and other advanced workers have told me that they make similar allowances. Of course, there should be a scientific explanation of this, but I cannot give it. There may be some analogy with the case of pinhole exposures in which, beyond a certain point, the rule begins to fail. Anyhow, in practice, when working above about twelve magnifications, it is as well to cut down the exposure, until, at about thirty magnifications, about half the calculated time will generally suffice.

The above may seem painfully indefinite, but there is a good deal of *mutatis mutandis* about telephotography in its present stage of development. The best that one can hope to be in this particular case is, as I said above, suggestive, and to invite other experiences.

I may conclude by saying that the use of an extended hood makes the whole question of exposure in telephotography much less difficult than it used to be. The latitude allowed when a hood of sufficient length is employed to prevent internal reflections altogether is very considerable, as any one may find out for himself by exposing two sets of plates in pairs, giving correct, half, and double exposures to each pair, and exposing one plate of each pair with the hood affixed, and one without.

The question of instantaneous exposures in telephotography demands separate consideration.

CAPTAIN OWEN WHEELER, R.E.

## THREE GOOD THINGS, AND SOMETHING ABOUT THEM.

THREE-FOUR ounces of splendid developer, clean to use, exerting no influence on finger tips, equally effective, whether films, plates, slide paper or lantern slides are being dealt with, always ready hand fresh and reliable, requiring but a moment or two to make just a few ounces of clean, cool water, crushing a couple of pills, and there is a standard solution, ready for use, and all for the proverbial twelve pence. Really it seems about as near perfection as can be imagined for the purpose of amateur photography.

It is, however, no imaginary affair at all, but another of those present-day facts we are getting rather blasé about and apt to look suspiciously at when first announced in advertisement form, with a list of special features set forth in recommendation.

Any of these new introductions pass away into oblivious forgetfulness almost as quickly as introduced, pressed on one side by other petitions for public notice, a process which is repeated time and time again, yet every now and then one stands the test of practical experience and remains, and among modern developers I fancy this introduction, "Rytol," will prove a stayer, for, having used it now for some five or six weeks on all manner of exposures, it seems to answer satisfactorily every claim possible to be made for a developer. It gives clean negatives, free from any tendency to fog, works well, gives delicate gradation and ample density, produces rich blacks when bromide papers are used, causes no trouble to delicate hands, and, withal, possesses the advantage of being one of the cheap developers we have available at the present day.

It seems a real good thing, and ought to find innumerable friends among those who require a reliable developer, put up in convenient form, and intended for universal use.

### "Carbon" Bromide Paper.

Among those who for their picture work employ one or other of the developing bromide papers there is ever the need for preserving that velvety appearance seen in deep shaded parts of the subject fully developed in print form, yet how often—when it is neces-

sary to carry the process sufficiently far to ensure having high-lights with their necessary details—do we find the darker portion bury themselves and dry out dead and disappointing.

It is all very well to preach the doctrine of making perfect negatives for each process, but precept, good as it may be, is at times difficult to carry into practice, and negatives of some subjects have a shocking habit of taking matters in their own hands and coming out not quite what we wish them to be. Anyone having to handle such negatives and make silver bromide prints from them will find the comparatively new paper, called Carbon Bromide, answer capitally, for when dry the image remains on the surface in a very satisfactory fashion, there is not that dried-in, degraded, sunken appearance we all are at times so familiar with when unsuitable hard negatives are used, and development pushed to its full extent.

For press work, when the prints are intended for reproduction, it will be found this carbon surface answers admirably; it is rich, yet with no greasy gloss, and takes pencil or powdered chalk quite kindly.

It stands between the thin film of ordinary matt surfaced papers and those with pulpy, highly glazed surfaces.

It is tough, bears handling capitally, is treated quite in the usual manner of bromide paper during exposure and development, and seems to give rise to far less disappointments after washing and drying than is often the case with other surfaces; at least, that has been my experience of it during the few months it has been used.

### A Novel Form of Finder.

When using one of the ordinary form of camera obscura finders, where you look down and view the reflected image in miniature, there is often some difficulty in seeing it clearly if at the moment you are working outside with a strong flood of bright sunlight beating down and unshaded.

It has always been more or less a trouble, under the above circumstances, to grasp rapidly and with accuracy what is the subject

included on the finder. Various devices have been adopted to try in some measure to overcome this difficulty. One of the latest takes the form of a hollow or curved plate of polished metal, which has a small spot or dot marked at its centre, then there projects above it a tiny rod, with a knob or blunt end.

To use this novel and effective aid to snap photography all that is required being to glance down, and when the rod end covers the marked centre of the polished plate it is certain that, whatever appears within the margin on the finder, will also be found on the developed negative, and relatively occupying a similar position.

It is a fresh departure, and on first handling it I was rather inclined to doubt its being any advance on others already familiar to photographers, but after using it a few times the strangeness disappeared, and it really seems to answer its purpose quite effectively. It certainly does away with any trouble caused by the glare from strong light, and doubtless will prove a welcome assistance to hand-camera workers.

It is, I understand, to be on the market in a few weeks, is cheap, made in three sizes, and may be attached to any form of hand camera already in use.

W. THOMAS.

## COLOUR PSEUDO-STEREOSCOPIC EFFECTS.

[The following curious phenomenon, described in the "Physikalische Zeitschrift," is interesting, not only because it suggests a pretty way of obtaining stereoscopic diagrams, but also because it may explain why the coloured starch grains are sometimes so noticeable when viewing Autochrome pictures in the stereoscope.—Eds. "B.J."]

If an obliterated German 10 pfennig stamp (red) is examined with both eyes through a reading glass of about 4 inches diameter, the obliteration appears to stand 2 to 3 millimetres above the stamp—that is to say, it appears to be raised above the plane of the paper. This effect does not appear with a 5 pfennig (green) stamp, the obliteration here appearing to be in the plane of the paper, or even below it. The effect is due to the colour of the stamp.

The effect does not appear when a black letter is drawn on a piece of red paper and is examined through the reading glass. Only when the paper is drawn in red and white mixed—that is to say, when one draws a fine network of red lines on white paper, and then draws a letter in black—is there any stereoscopic effect. It is especially noticeable with a wide-meshed net in those parts of the letter lying on the red lines, whereas the parts lying in between on the white ground will appear sunken in.

If also a series of concentric circles are drawn alternately with green or blue, black, red, black, etc., ink without white interspaces, when

The relief of the obliteration of the 10 pfennig stamp, mentioned at the beginning of this note, is therefore to be explained, not that the obliteration is actually raised up, but the red background, and with it the optical blanks which form the black obliteration. The relief is formed against the white parts of the paper which show through.

I confess that the explanation does not completely satisfy me. In particular, it does not explain the following phenomenon: If a large number of black, green, and red dots are made on a sheet of white paper in irregular arrangement at about 2 mm. distance from one another, and if the result be examined through a reading glass, the green dots appear in front. Behind them are the black, and still further away the red. On a black background the visual appearance is reversed.

In many three-colour prints, which are made with a coarse screen, the three colours, when examined through a reading glass, appear to be in three planes, the red on top, then the yellow, and, last of all, the blue, each being about 1.2 mm. from the other.

I may mention that the effect can be reversed if, instead of using a reading glass, two separate glasses of about 12 cm. focus are used, one for each eye. Looking through the centre of the lenses there is no stereoscopic effect, but when the outer edges of the lenses are used the effect is the same as with the reading glass; if the inner edges are used the stereoscopic effect is reversed.

With achromatic lenses the effect is not obtained, which therefore proves that the above explanation is correct.

E. GRIMSEHL.

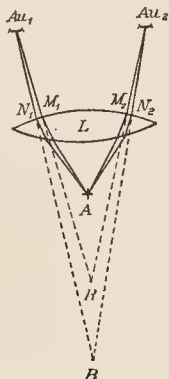
To the above article Dr. M. von Rohr, in a later issue of the "Physikalische Zeitschrift," appends the following notes:—

Herr E. Grimsehl has called attention to a remarkable stereoscopic effect, which appears when coloured designs are examined by the two eyes through a simple reading glass. He has ascribed it to the chromatic aberration of a single lens; at the same time, however, has pointed out for the first time a still unexplained inconsistency which appears in the arrangement of coloured spots on a white ground.

This last observation also appears to be new, whilst the depth arrangement which is in accord with theory when observing coloured designs through a non-achromatised reading-glass had already been published by Sir David Brewster in 1848, and more accurately described and explained in 1851.

According to the observations of Herr Grimsehl, red, green, and blue spots on a white flat ground, when examined with both eyes through a reading-glass at increasing distances from the observer in the order blue, green, and red; and on a black ground in the order red, green, and blue. This phenomenon Herr Grimsehl has observed on a coarse three-colour half-tone.

The sketch above, by Herr Grimsehl, may be employed for the explanation. It will at once be seen that each eye looks through a prism the refractive angle of which is towards the temples. If any dark spot on a white ground is examined with one eye through a prism held in the same way, the image will be seen to be displaced—and surrounded by coloured fringes—as the result of the dispersion of the rays proceeding from the white ground. Actually a blue fringe lies on the inner—the nasal—side, a red fringe on the



viewed with binocular vision through the reading glass, the red circles will appear raised; the green, on the other hand, will be sunken in; the black circles appear also raised where their edges touch the red, and sunken in where they touch the green.

This last phenomenon leads me to suggest that the effect is due to chromatic aberration which the rays experience as they pass through the margins of the reading glass. The following diagram will explain this:  $Au_1$  and  $Au_2$  are the two eyes of the observer,  $L$  is the glass,  $A$  the object, which simultaneously emits red and blue rays, consisting of two closely contiguous blue and red points. The red rays proceeding from  $A$  take the path  $AM_1Au_1$  and  $AM_2Au_2$  into the eyes, the blue rays proceed along  $AN_1Au_1$  and  $AN_2Au_2$ . The observer transfers the point of origin of the rays in the direction of the last rays which reach the eye. The point of intersection of  $Au_1N_1$  and  $Au_2N_2$  when prolonged lies at  $B$ , that of  $Au_1M_1$  and  $Au_2M_2$  in  $H$ . From this it follows that  $B$  appears to be nearer the eye than  $A$ —that is to say, the red circles appear raised, and the green or blue sunken.



outer or temple side of the image of the spot. In the case of a blue spot, it will be enlarged on its inner side (the red fringe will be involuntarily suppressed); in other words, the corresponding image of the spot for each eye experiences a small displacement inwards, which corresponds to the nearer approach of the aerial image in binocular vision. A red spot experiences, in accordance with its spectrum, an increase towards the outer side, and this leads to an increase of the distance of the aerial image in binocular vision. It is quite different, however, with a black ground: in this case there can be no such increase, and only the prismatic, or, according to the older explanation, the lenticular, action comes into play. This latter must be greater for blue than for red, and shifts the image of the spot outwards for each eye. The result of this is that in binocular vision the blue spots are further removed.

If the spots on a dark ground are observed with the naked eye the red will appear more distant than the blue; this is to be ascribed to the non-achromatism of the human eye, a phenomenon which has been observed before, the explanation of which is not difficult, but which is somewhat too long to enter into here.

In connection with the above subject, Herr Grimsehl states that Herr F. Kohlrausch has written to him that he had called attention to a similar stereoscopic phenomenon, produced by dispersion ("Peggendorff's Annuale," 143, 144) in 1871. This was not known to Herr Grimsehl. Herr Kohlrausch used two small direct vision prisms to produce the stereoscopic effect; but he also remarked at the end of his note that the effect was also produced by a large non-achromatised convex lens.

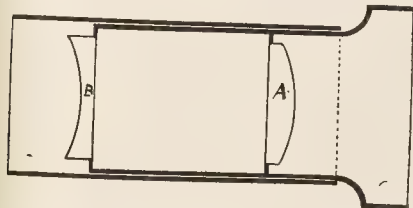
## THE ANACHROMATIC DOUBLET LENS AS A CASKET LENS FOR PORTRAITURE.

[A writer in the current number of the "Bulletin Belge," in referring to the new type of anachromatic lens ("trousse anachromatique") worked out by M. Puyo for portraiture, gives the following formulae for constructing the lens from single anachromatic glasses, as at present obtainable. These are mounted in the barrel of an anachromatic doublet. We translate the latter name of the article, and in regard to the results produced by the semi-corrected lenses—to which MM. Puyo and Pulligny have given the name of "anachromats"—would refer the reader to our issue of March 9, 1906, which dealt with them at considerable length.—"B.J."]

RECEIVED the idea of converting my anachromatic doublet into one of the new Puyo portrait type. To do this it is sufficient to place the two meniscus lenses of which it is composed by two glasses—one positive and one negative, producing a telephoto anachromatic combination. These lenses are placed in the tube, the front lens, A, with its convex surface towards the subject, and the back lens as at B, the two plane surfaces of the lenses facing each other.

The factors which then determine the behaviour of the lens are the following: Extension of the camera (back focus); distance between lenses; maximum magnification (depending on the size of the object from one-third life-size for 7 by 5 inch plate, to one-half life-size for 10 by 7 plate); minimum distance of the subject.

In order to obtain a good correction of disturbing aberrations



magnifying lens, the smallest camera extension must be used. For a full-length figure, the distance from the subject, in the case of a sufficient correction of astigmatism, and of spherical aberration, for flatness of field, the front (positive) lens and negative lens will be plano-convex and plano-concave elements of the crown glass and the same curvature.

The formulae on which the lenses are based are as follows:—

$$x = (n + 1)f + \phi \quad T = (1/n + 1)f - \phi \quad f = \frac{\phi^2}{E}$$

where D = distance of the subject,  $1/n$  = scale of reduction, T = camera extension,  $\phi$  = focus of lenses, E = separation of the lenses.

Thus, in taking, with a tourist camera, on a 7in. by 5in. plate, with a maximum extension of 16in., a subject one-third life-size, at 6ft. (2m.) distance, the separation between the lenses being 110mm.,

$2,060 = 4f + \phi$   $400 = 43f - \phi$   $100f = \phi^2$   
for  $\phi = 225$ . These equations give  $f = 440$  and  $D = 2,065$ mm., or about 2m. (roughly 6ft. 6in.), and  $T = 387$ mm., or about 16in. As to the intensity or working aperture of this telephoto lens, it is

given by the expression  $\frac{F}{D/nd}$  where  $d$  is equal to the effective diameter of the lens.

With lenses of 61mm. diameter, working at full aperture, the intensity will be  $f/11$ . The exposure, calculated from the usual tables for plates of medium speed, should be halved for extra-rapid plates.

An ordinary lens, giving one-third life-size, at 2m. (6ft.) distance, would have to be 24in. focal length—that is to say, beyond the extension of the average outdoor 7 by 5 camera. With an ordinary lens and an extension of 16in., the scale of reduction at 2m. distance is one-ninth.

The calculation of the correction (racking-in of lens), according to the distance of the subject, is very simply made as follows,—

$$x = \frac{1}{e} \left[ 2f(1 + 1/n)^2 - \phi \right] \text{ and } n = \frac{D - (f + \phi)}{f}$$

where  $e = 57$  (for crown glass), and D is the variable.

It will be useful to calculate this correction for different distances—2m., 2½m., 3m., etc.—and to plot the distances thus obtained on a strip of paper attached to the movable tube of the lens. The correction will then be made very simply with the lens rack and pinion, or less conveniently by the camera rack adjustment.

O. LEPERSONNE.

PHOTOGRAPHIC SOCIETY.—The following lectures, which are of special interest, are included in the programme of lectures to be held on Tuesday evenings at the Royal Photographic Society's rooms during the next few weeks: April 28, "The Photo Process," by the Rotary Photographic Company;

May 12, opening of a one-man exhibition, by Furlay Lewis, with an address, to be followed by a demonstration of a new process of printing in monochrome by imbibition, by Frank Donisthorpe; May 26, a new method of securing uniformity in ozobrome printing, by Thomas Manly.

## CINEMATOGRAPH PORTRAIT PRINTS.

Attempts to apply the cinematograph in the professional practice of studio portraiture are very likely fresh in the recollection of some of our readers, who will bear us out in the statement that such attempts have hitherto been attended with commercial failure. However, it is satisfactory that the non-success of others does not deter other experimenters in the same field, and we are interested to

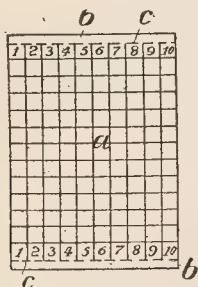


Fig. 1.

read in the current issue of "Der Photograph" that a firm in Hamburg, trading as the Kartaskop Company, proposes to exploit commercially the invention of a Herr H. Voss, of 110, Langerreihe, Hamburg. Herr Voss' invention, as we find it described in our contemporary, consists in a system of making a series of cinematograph records on flexible film, from which eventually a paper print is made. This print is then wrapped round the cylinder of a

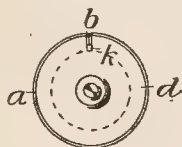


Fig. 2.

viewing instrument, and on the cylinder being rotated each separate picture is brought before a lens, and a cinematographic reproduction of the living portrait obtained. It is stated that both the negatives and the viewing instruments can be produced at very moderate prices; as for the prints, they are just ordinary bromides or P.O.P.s, and can therefore be turned out at a small cost. The aim of the company will be to apply the invention to studio work by means of licences granted to photographers in given districts.

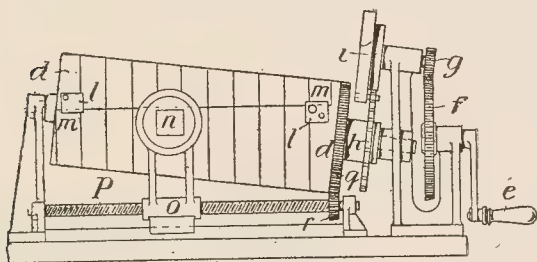


Fig. 3.

The following technical particulars will give some idea of the nature of the invention.

Fig. 1 shows one of the cinematograph portrait prints, bearing a series of exposures. Fig. 2 is an end view of the reproduction cylinder of the Karkaskop, with the print fastened thereto, and Fig. 3 is a drawing of the machine itself. In preparing the print shown in Fig. 1, the film of cinematograph pictures is cut at equal ends, and the elements of the series fastened one after another on a glass plate. This arrangement of negative pictures is then photo-

graphed to a scale corresponding to the size of the print required and any desired number of prints thus obtained. The print is rolled round the cylinder in such a way that the separate strips in rows of 10, spiral-wise around the cylinder, which is set in motion by the gear shown on the right-hand side of the drawing.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for Patents have been received between April 6 and April 11:—

**COLOUR SCREENS.**—No. 7,629. Process for colouring celluloid for use in the production of line and point screens for colour photography. Friedrich Lehner, 4, South Street, Finsbury, London.

**SCREENS.**—No. 7,739. Method of manufacturing line and point screens. Vereinigte Kunstseide-Fabriken A.G., 4, South Street, Finsbury, London.

**COLOUR SCREENS.**—No. 7,742. Improvements in the manufacturing of line and point screens for colour photography. Friedrich Lehner, 4, South Street, Finsbury, London.

**CAMERAS.**—No. 7,862. Improvements in adapters or attachment devices for photographic cameras. George Lloyd Moore, 35, Temple Street, Birmingham.

## COMPLETE SPECIFICATIONS ACCEPTED.

These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

**FOCUSSED MIRROR.**—No. 1,323. 1908. The invention relates to the attachment of a hooded focussing screen and a mirror attachment thereto. Layman Magarry Sternbergh, 15th Avenue and 22nd Street, Peterson, U.S.A.

**PRINTING FRAME.**—No. 1,595. 1908. The invention consists in a printing frame, provided with improved means which enable the entire surface of the sensitive paper to be easily inspected at any time during the process of printing; means are also provided which enable the sensitive paper and also the negative to be easily removed from the frame during printing and replaced in register with each other, also for enabling a mask or masks to be applied in register with the negative and sensitive paper during the process of printing in skies and the like.

Provision is also made for a mask or masks to be placed between the glass sheets in front of the negative for the purpose of viewing. This is done by the use of a frame or carrier, at one end of which is a negative holder with clutches to same, sliding between runners or guides, also by aid of a row of metal sharply pointed perforating register pins on a metal plate or fixed to the carrier separately. John Mills, 162, Waller Road, Queen's Road, Cross, London, S.E.

**THREE-COLOUR SCREEN-PLATES.**—No. 2,213. 1908. The invention which is styled "three-colour reticules for colour photography" relates to the method of making filter screen-plates by cutting a section of a composite block of sheets of coloured celluloid. These latter are, in always the same succession of the three primary colours, placed one upon the other up to the desired height and then by pressure and heat united into a new block which is then cut crossways to the stratification into "reticules," which are then polished.

The "line-reticules" produced in the above manner can be changed into point reticules by placing the line reticules between two with parallel running lines one above the other and uniting them again by pressure and heat into a new block and dividing the same again crossways to the stratification.

On the basis of the above described process "reticules" can also be made with which positives can be produced, to be viewed by reflected light. To this end the transparency of the material from which the monochrome blocks are to be produced



must in so far be reduced that it is transparent only in a thin layer. This reduction of the transparency must, however, be effected in such a manner that the pigments added possess, viewed from above, the required luminosity. But this is only possible if a porcelain-like white substance carries the pigments.

In carrying out the process, in the first place, the transparency of the three parts of raw material for the monochrome blocks is so far reduced, say by the addition of a finely divided white stuff, such as zinc-white, that it is only transparent in a thin layer—for instance, like thin porcelain. The suitable pigments are then added. The three monochrome blocks are next produced and divided into thin layers. These layers are, exactly in the same way as described for the transparent reticule, placed one upon the other in always the same succession of the three primary colours, and then united by pressure and heat into a new block, which is now divided crossways to the stratification. The translucent three-colour reticules thus produced are polished and coated with the panchromatic layer. The negative produced by means of a transparent reticule which, together with its reticule, shows the complementary colours of the object taken when looking through it, is now copied on the above described positive reticule so that the rays pass through the positive reticule upon the panchromatic sensitised layer.

During the development of the positive the colour-elements not required for the production of the picture are covered by reduced silver bromide, and there results a photographic picture in natural colours visible from above.

This translucent positive reticule can, of course, also be transformed into a point-reticule by uniting the lines of the positive reticule exactly in the same manner as described with regard to the negative line reticule by pressure and heat into a new block and cutting the same again crossways to the stratification.

In forming the blocks from which the reticules are to be cut it is best to proceed in a manner that the thin layers are in the first place only made to be a few millimetres high, and are then pressed together into plates. These plates are then put one upon the other until the desired height of the block is reached and united by pressure and heat. By this method there are obtained perfectly straight and parallel lines through the whole block.

Robert Krayn, 2, Krausen Strasse, Berlin.

**TABLE DARK-ROOM.**—No. 10,247, 1907. The invention consists of chamber with hinged sides and provided with sleeve openings and means of admitting and discharging water. Thomas James Griffiths, 366, Monument Road, Birmingham.

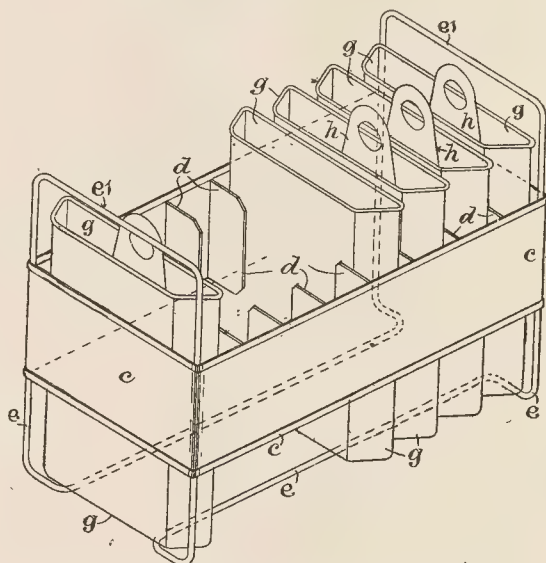
**CINEMATOGRAPHS.**—No. 7,277, 1907. The claim is for cinematographic apparatus having a support provided with teeth, points, or other suitable projections, over which, after each intermittent forward movement of the film, the latter is so placed that its perforations engage with the above-mentioned projections, thus effecting an intermittent fixing of the film on the support for the purpose of preventing the thin band being drawn too far or any subsequent sliding along of the same. Stanislaus Kucharski, 58, Unter den Linden, Berlin, Germany.

**DEVELOPING TANKS.**—No. 13,650, 1907. The apparatus constructed in accordance with this invention, comprises a rectangular box or case provided with a loose cover or lid, having a flange all round. This flange drops into a gutter ledge or recess round the rim of the tank; and both are of such a depth, that when the lid or cover is in position, the box is perfectly light proof. Two opposite sides of the box are furnished with inwardly projecting ribs or flanges, so as to form a series of grooves or guides for the developing troughs (to be immediately referred to) to be placed therein. It is intended to insert at any time a less number of troughs than there are grooves or divisions, so as to be able to alter the arrangement of sequence of the troughs in the box at any momentary inspection, according to the degree of development required. The developing troughs are formed of sections in a rectangular trapezoid, one of the parallel sides of the trapezoid being slightly greater, and the other considerably less than the width of the photographic plates or films to be developed. This device ensures that the plate when inserted in the trough is always nearer the first-mentioned side; so that if the sensitised side of the plate, having the undeveloped image, is placed facing the shorter narrower side, it will have the larger or main portion of the

developing solution opposite, and with direct or unrestricted access to it; and the development proceeds more regularly.

The trapezoidal shape has the further advantage, that it enables the operator by the sense of touch, to know to which side of the trough the sensitised side of the plate should face, and he is therefore not dependent on the feeble non-actinic light when working in the dark room.

Further, this section of trough renders it impossible for the sensitised side of the plate or film to come in contact with the front



side of the trough, and be thereby damaged; and the quantity of solution required for the development is reduced to a minimum; as nearly the whole of the solution is at the sensitised side of the plate or film.

The plates are dropped into and lifted out of the trough by means of long triangular frames, termed lifters, of sheet copper or other suitable material. Frederick Woodward Branson, of the firm of Reynolds and Branson, Ltd., 13, Briggate, and 14, Commercial Street, Leeds.

**COLOUR SCREEN HOLDERS.**—No. 12,459, 1907. The patentee provides the invention of a square frame or support made of such dimensions that it can accommodate a suitable range of sizes of filters, which can be accurately adjusted to the lens or prism of varying size. One side of this frame or support is provided with a pair of vertically guided and adjustable curved clamping jaws, while the other side of the frame is provided with means for supporting and retaining the colour tank or filter. He mounts the clamping jaws on transverse bars, the outer ends of which are provided with tubular bosses that closely encircle screwed guide rods located at the corners of the frame or support. The positions of the bars—and, therefore, those of the jaws—are adjusted by means of milled nuts which engage with the screwed guide rods. The jaws are preferably formed separate from their bars, so as to enable one jaw to be replaced by another of different curvature, and they are attached to the bars by screws and slots or other suitable means. When the holder is to be secured to the mount of a prism the curved clamping jaws are dispensed with.

The filter is constructed, supporting and retaining part of the holder of an upper spring-actuated strip or bar, and a lower adjustable strip or bar. The strips or bars are provided, at their forward portions, with lips which retain the filter in its correct position against the centre of the plate holder and absolutely parallel to the lens or prism, and, at their outer ends, with tubular bosses which closely encircle guide rods located at the corners of the frame or support. Space is left between the guide rods to allow of the

removal of the colour tank or screen. The upper guide rods are plain and are surrounded by light springs which press the upper strip or bar downwards, while the lower guide rods are screwed so as to receive milled nuts and enable the lower bar or strip to be adjusted. Edgar Samuel Hunter, 26-29, Poppin's Court, Fleet Street, London, E.C.

**FILM DEVELOPING MACHINE.**—No. 31, 1908. The claim is for an apparatus for the daylight development of roll films characterised by the provision of a tape supported on spindles, and movable in either direction round a roller, the spindles being suitably suspended in a chamber about a tubular receptacle which forms the developing trough, and the roller likewise suspended near the lower part of the trough. Magnus Niell, Djursholm, Sweden.

## New Trade Dames.

**OPALANTHERENE.**—No. 299,730. Chemical substances used in manufactures, photography, or philosophical research, and anti-corrosives. Society of Chemical Industry in Basle, 151, Klybeckstrasse, Basle, Switzerland, chemical manufacturers. January 18, 1908.

**ECONAMEL.**—No. 301,236. Chemical substances used in manufactures, photography, or philosophical research, and anti-corrosives. Lewis Berger and Sons, Ltd., 201, Morning Lane, Homerton, London, N.E., manufacturers. March 11, 1908.

**VELBRO.**—No. 301,568. Photographic paper. Elliott and Sons, Ltd., Talbot House, Park Road, Barnet, Herts, manufacturers of photographic dry plates, films and papers. March 21, 1908.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Hypo-Alum Toning of P.O.P.

In the course of printing many thousands of postcards (says a writer in "Focus") I have had many dozens of over-printed, and thus wasted, cards. These I generally withdraw from the toning early, and they fix out warm red or orange colour. The other day I had a good few of these cards treated thus, varying in colour from bright orange to deep red.

I had an old hypo-alum toning bath made up many months ago, in which I had toned many bromide and gaslight cards. Into this bath I threw the red P.O.P. cards as an experiment. Imagine my surprise, on looking at them an hour or so later, to find that all the orange colour had gone and they were a fairly good purple tone, varying according to the colour on immersion. Any tone can be obtained according to original colour and time of immersion. I can thus use all printed cards, whether over-printed or not.

### A Dark-room Blind.

The materials necessary (writes Mr. W. Arthur Long in "Photography") are two blind rollers, with fittings and cords complete, to fit the window, but with one roller a trifle (say an inch) longer than the other, one piece of ruby fabric cut to fit the shorter roller and so form a blind, and one piece of canary fabric to fit the longer roller. Both must be made to come well down to the sill of the window, and have well weighted laths sewn or tacked into their lower edges.

The canary roller should be fixed near the top of the window frame, and the ruby roller a little below, so that the canary blind drops outside the ruby and near the window. Two pieces of thin matchboard are taken, each being cut to the length of the window casement and wide enough to overlap the perpendicular edges of both blinds when screwed one on each side of the casement. These should form a trap which will effectually stop any light from entering when the blinds are down, the blinds working, of course, inside these boards. It is well, also, to have an extra piece of board, which may be placed along the sill, but this is not necessary.

It will be obvious, now, that either the ruby or canary blind

may be drawn separately, according to the class of work to be done, or for very fast and orthochromatic plates both may be drawn.

## New Books.

"Deutsche Photographen Kalender. Part II." Edited by K. Schwieler. Weimar: Office of the "Deutsche Photographische Zeitung." Mk. 2.

Year by year we welcome the well-arranged pages of Herr Schwieler's "Kalender," which, as we mentioned some weeks ago when reviewing Part I., is one of the publications indispensable to those who have dealings in photographic matters in Germany. Part II., being the technical portion of the publication, is supplemented by the second portion now before us, which consists of a list of the photographic societies in Germany, in each case with the names and addresses of the members. These societies are arranged under (1) professional, and (2) amateurs, each list being again arranged in alphabetical order of the towns. Herr Schwieler gives a directory also of the leading photographic associations in other countries, including those in Great Britain, which are affiliated to the Royal Photographic Society. If we may judge of the accuracy of his data from the British list, the "Kalender" is remarkably free from errors. The list of photographic schools of instruction in Germany and Austria also given, after which we have particulars of the photographic press of Germany and foreign countries, and finally, and perhaps the most useful portion of the volume, a directory of the photographic trade in German-speaking countries, arranged, first in alphabetical order of the firms, secondly in a subject classification of manufacturing articles, and thirdly in an alphabetical list of towns. In each list we get a rapid review of the distribution of photographic industry in Germany. Berlin comes first with the greatest number of firms, but Dresden, which stands second on the list in point of numbers, no doubt the more important site of the photographic industry, the manufacture of cameras and papers is concentrated in its neighbourhood.

"Photographische Belichtungs Tabelle." By P. Eichmann. Berlin: Gustav Schmidt.

A useful pocket volume of an exposure guide is issued under this title. It is arranged on the basis of the well-known exposure table of Burton, but in such a way that the user is relieved from calculations. The light value for a given month and time of day is selected from a table and the necessary calculations made by a series of concentric discs at the end of the volume. The book also contains a detachable inset serving as a diary for the entry of exposures.

### CATALOGUES AND TRADE NOTICES.

THE WESTMINSTER PHOTOGRAPHIC EXCHANGE, LTD., have issued a revised and up-to-date catalogue of apparatus, accessories, and materials which they are in a position to supply. The list, which is abundantly illustrated, includes practically everything of importance at present on the photographic market, and should prove of interest to both the professional and amateur worker. The same firm has also published a list of second-hand goods, including well-known makes of cameras, lenses, enlargers, etc., which they are offering at considerably reduced prices. Both lists may be obtained from the above firm at 119, Victoria Street, Westminster, London, S.W.

"THE IMPERIAL HANDBOOK," 1908, written specially for the amateur photographer, and obtainable, post free, from the Imperial Dry Plate Company, Cricklewood, London, N.W., contains many particulars on the function of the stop, halation, fog, portraits by gaslight, orthochrome plates, gaslight and bromide printing, stains, spots, and pinholes.

GAUMONT CAMERAS.—A new list of the Gaumont Company's 5 and 6, Sherwood Street, Piccadilly Circus, W., reaches us, giving very full particulars of the excellent "Blocknotes" and "Spidos," which the makers may be justly proud. The list also specifies the firm's enlargers and other accessories for the cameras, and is emphatically a useful book of reference.



# Meetings of Societies.

## MEETINGS OF SOCIETIES FOR NEXT WEEK.

FRIDAY, APRIL 24.

am Photographic Society. "The Wonders of the X Rays." James Lead-

ndon Photographic Society. "Round About Dartmoor." H. Selby.

SATURDAY, APRIL 25.

y Photographic Society. Excursion to Stort Valley.  
and District Photographic Society. Excursion to Woolwich Ferry.

SUNDAY, APRIL 26.

minster and District Photographic Society. Competition:

MONDAY, APRIL 27.

ark and District Photographic Society. "Composition." P. Bale Rider.

Photographic Society. Members' Prints.

and District Photographic Society. "Oil Printing." E. D. Ingall.

and Forest Hill Photographic Society. Affiliated Prize Slides, 1907.

Photographic Society. Y.P.U. Invitation Portfolio.

TUESDAY, APRIL 28.

Photographic Society. "The Carbograph Process." Rotary Photographic

tion Camera Club. "Carbograph." Rotary Photographic Co.

Photographic Society. "A Swiss Holiday." Gilbert Middleton.

Photographic Society. "Afar in the Fatherland." W. L. F. Wastell.

am Photographic Society. "Holland." Illustrated Lecture. Lent by

rs. Staley & Co.

WEDNESDAY, APRIL 29.

Camera Club. "Lens Shutters, their Use and Efficiency." E. A. Salt.

uburban Photographic Society. "Hand Camera Work." W. Thomas.

Camera Club. Annual Meeting.

THURSDAY, APRIL 30.

nd Camera Club. "Various Systems of Development." P. G. Payne.

chool of Photo-Engraving and Lithography. "Large Size Engravings

Illustrations for Publishers." F. C. Batter.

Photographic Society. Excursion to West Drayton.

on Club. "Dew Ponds." George Hubbard.

tion and District Camera Club. Photographic News Prize Slides.

orth Photographic Society. "Oil Printing." Demonstrated. W. J. Foster.

and Provincial Photographic Association. "Printing from Gelatine

aces." J. T. Butterfield.

## ROYAL PHOTOGRAPHIC SOCIETY.

re held Tuesday, April 14. Mr. G. A. Storey, A.R.A., gave  
re on "Art and Photography," in the course of which he  
ed to his audience many valuable hints as to the composition  
neral treatment of a subject when reproduced by means of  
ra from the point of view of an artist.

## Commercial & Legal Intelligence.

**BIOSCOPE TRADING COMPANY.**—The partnership between  
rick Richard Griffiths, George Wm. Brown, and Arthur Charles  
way, carrying on business as exhibitors, manufacturers, and  
ers of cinematograph goods and appliances, at 5, Cecil Court,  
g Cross Road, W.C., under the style of the New Bioscope  
g Company, has been dissolved by mutual consent. All debts  
received or paid by F. R. Griffiths.

**CLAIM FOR PHOTOGRAPHS.**—In the Ilford County Court last week  
John Lyle, photographer, 855, Romford Road, Manor Park,  
Mr. Frank Miles, of 47, Aberdour Road, Goodmayes, for  
in respect to certain photographs taken and supplied. His  
said in this case he had to decide between the evidence of  
endant and that of Mr. Watts. Mr. Watts was a perfectly  
dent witness. He was sorry to have to say so, but he would  
accept the evidence of plaintiff's witness that defendant did  
the dozen photographs, and he would have to pay for the dozen.  
costs, he would pay the ordinary costs in the case, and also  
adjournment.

**EXPORTER'S BANKRUPTCY.**—At the London Bankruptcy Court.  
il 14, the statutory first meeting of creditors of James  
er Bryce, exporter of photographic accessories, 44-46,  
hall Street, E.C., was held. The receiving order was  
on March 31, upon the creditors' petition. It appears

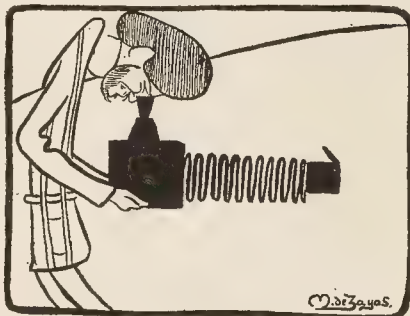
from the debtor's statements that he began business in July,  
1896, at 23, St. Mary Axe, E.C., with a free capital of £50. He  
continued trading at that address until 1904, when he removed  
to other offices in the City. In June, 1906, he took the premises at  
44 and 46, Leadenhall Street. In February 26 last he executed a  
deed of assignment of his property in favour of a trustee, on behalf  
of his creditors generally, and the business then came to an end.  
The debtor attributes his failure to bad trade in the South African  
market, where the bulk of his business was done. No statement  
of affairs was filed, but the unsecured liabilities were estimated at  
£2,900 and the assets at £500. There was no offer of composition  
before the meeting, and, a resolution for bankruptcy having been  
passed, it was decided to leave the estate in the hands of the Official  
Receiver. The public examination is appointed for May 13.

## News and Notes.

"THE PRISM" for March deals chiefly with the subject of  
lantern projection, in regard to which it gives some useful hints,  
with special reference to a new projection lantern which is being  
placed on the market by the Bausch and Lomb Optical Company,  
for whom Messrs. Staley are the London agents. The latter firm  
will be pleased to send a copy of the little booklet to anyone  
forwarding a penny stamp for postage.

**DEMONSTRATIONS AT MESSRS. GRIFFINS.**—Messrs. Griffin, of  
Kingsway, send us particulars of the revised arrangements for  
demonstrations at their "photographic rendezvous." The fixtures  
are as follows: Every Monday at 3.30 p.m.—Velox printing by  
gaslight and modern toning methods; every Tuesday at 3.30 p.m.—  
development of "Watalu" plates; every Wednesday at 3.30 p.m.—  
"Goldona" printing (self-toning paper); every Thursday at 3.30  
p.m.—oil pigment printing (this process enables any amateur  
to produce real oil pigment prints from his own negatives); every  
Friday at 3.30 p.m.—the art of mounting photographs. Messrs.  
Griffin point out that they deal not only with the matters mentioned,  
but are pleased to give information about any photographic topic,  
and inquiries by post receive careful and prompt attention.

**A CARICATURIST OF COBURN.**—There are few worlds left for a  
man to conquer after he has been caricatured, and, indeed, it is  
said that not a few reputations have been made as well as unmade  
by the caricaturist's pencil. In America a new caricaturist has  
arisen in the person of Mr. de Zayas, who has turned his attention  
to Mr. Alvin Langdon Coburn, among others. Mr. de Zayas is a  
Mexican who has lately come to New York, and his work is said to  
be quickly challenging public attention by reason of its unique



simplicity and effectiveness. "De Zayas," we are told, "is not at  
all interested in the facial contour of a head, as the chance passer-  
by sees it, but rather does he express with line that intimate  
character which always escapes a portrait painter. Mr. de Zayas's  
portraits are epochal, in that he has evolved a style—a means of  
expression—entirely his own, and yet diversified to suit the character  
he is depicting." Mr. de Zayas has recently been photographed by

Mr. Coburn, and the caricaturist turned the tables on him in the way that is shown in the accompanying sketch.

COMING EVENTS.—A correspondent, presumably a Conventioneer who will be at Brussels in July, sends us the following:—

A charming young lady of Ghent

Was snapshotted wherever she went;

She heard t' other day

Of the P.C.U.K.,

And has ordered new frocks for th' event.

STOLEN APPARATUS.—A half-plate Sanderson camera, believed to be No. 11,955, was stolen on Saturday last from Mr. E. H. Atkinson, 39, Warwick Road, Ealing. Also taken with it were six double slides, the whole contained in yellow leather, lock case, with shoulder strap. A Staley Planastigmat, 5½ in., No. 30,306, was also taken. Anyone who may come across any of these goods is requested to communicate with the police or with Mr. Atkinson.

A LARGE EXHIBITION of Kodak pictures was given at the Assembly Rooms, Bognor, on Monday, April 13, to Thursday, April 16. The enlargements shown comprised work by many well-known amateurs, including her Majesty the Queen. Mr. J. W. Eadie gave his popular lectures, "Pictures and Picture-making with a Kodak," "The Queen of Hobbies and the Hobby of Queens," and, by special request, "The Kodak in Japan," illustrated by slides coloured by native artists. Professional photography was represented by Mr. Goodyer, of the Goodyer Studio, 33, High Street, Bognor, who showed an artistic screen of portraits, including his recent photographs of Lady Rachael, the daughter of her Grace the Duchess of Norfolk, also the Hon. Mrs. Drummond and children, taken by command of her Grace at Arundel Castle. In conclusion, a word of praise must be given to Mr. E. Lawrence Wood, the local dealer, for the care taken to ensure complete success and pleasure to his visitors.

## Correspondence.

\**We do not undertake responsibility for the opinions expressed by our correspondents.*

\**Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*

### THE DAYLIGHT SAVING BILL.

To the Editors.

Gentlemen,—I see in your influential journal of the 10th you refer to a statement that the Daylight Saving Bill is dead. The statement is wholly erroneous. The Bill was read a second time, amidst cheers and laughter, on March 26, and referred to a Select Committee to consider the practicability of the proposals, and the Committee, nine in number, have been designated, and will meet and take evidence after Easter. The Bill is supported by 180 members of the House and a host of eminent and practical men outside Parliament. Declarations in favour of it daily pour in. You also state that the Bill projects putting all clocks forward in April and backward in September. That will probably be the effect of the law, no doubt, but the Bill itself says nothing about clocks or watches, or candles or daylight. It merely proposes that four Sunday morning hours in April shall be only forty minutes long, and four Sunday morning hours in September shall be eighty minutes long. The people can alter their clocks and watches accordingly if and when they like. Very thankful for your notice, if you will kindly accept this correction.—Yours truly,

House of Commons.

April 16, 1908.

### THE PORTRAIT POSTCARD.

To the Editors.

Gentlemen,—I regret to take up your space again, but I want a word with "Arch Fiend," the solitary champion of the "touters."

His somewhat bullying letter would have been more convincing if he had told us what his price for postcards was. Anyone can expose four dozen plates per day on 1s. 6d. per dozen cards, possibly taken "on spec.," and "show you a proof to-morrow." It may be good for dealers, but Heaven help the rest of us.

He also takes exception to the phrase I used—"battening on the provender provided for others"—and says I might as well say, "Shop anywhere else if you dare." This is quite beside the question. With established competitors, I know they have to pay rent and taxes the same as I do, but "Arch Fiend" wanders up and down the country, injuring all, accepting any price he can get, and any cellar or garret is good enough for him to develop his plates and "gaslights" in.

Now I appeal to self-respecting photographers—men who wish to pay their way squarely, live decently, keep up a respectable shop and studio, educate their children, and perform their duty as citizens—can they do these things if their means of living are debased by unprincipled people whose only care is to live from day to day? The future of professional photography, as it applies to the smaller members of the trade, will be ruinous if something is not done and done quickly.

The idea of "Another Country Pro." of taking character into consideration when granting licences is excellent, and would, I think, be a great protection, especially if a portrait of the licensee were attached to every permit.

There must be, in fact, a photographic "black list," and licensees rigidly refused to those on it. In case of partners and companies, the act of one member should condemn the whole firm until he was expelled.

I have been a member of the Professional Photographers' Association since its commencement, and last year pointed out to the secretary how useless the Association was to countrymembers. His reply, of course, was conciliatory, but not convincing. If the association will take up this question to a successful issue, I will predict a doubling of membership within a year.—Yours faithfully,

FAIR TRADE AND FAIR PRICES.

To the Editors.

Gentlemen,—I have no doubt it pays a photographer to turn out postcards at 2s. 6d. or less per dozen in large towns or holiday resorts where the studio is kept going all day long. But in a country town where sitters are limited it appears to me foolish to enter into competition with a rival who thinks that by cheap work he will capture all the trade. His expenses are probably just as much as your own, and in due course he will feel the effect of reduced prices. I presume that none of us take photographs for the benefit of the public, but so that we may scrape together a living and keep out of the county court and workhouse. We fix our prices accordingly, and any reduction on these prices means a benefit to the public at our expense.

My experience of photography is that customers will come to you if they know you are going to take trouble and do your best to please them, and you cannot do this, neither can they expect it, for 2s. 6d. per dozen.

With reference to the letter from "Brains," if he had to photograph a full-length of a countryman in a ready-made suit, or the average servant girl in her Sunday best, he would find some difficulty in putting into practice his artistic knowledge gained by lovingly studying portraiture at the picture galleries.

ANOTHER COUNTRY PHOTOGRAPHER.

To the Editors.

Gentlemen,—I am an artist (oils), a photographer, and an old member of the London Fabian Society. On page 17 of the Fabian Essays, "Economic Basis of Socialism," G. Bernard Shaw says: "We now see how man's control over the value of commodities consists solely in his power of regulating their supply." He says: "If there is double the quantity of an article over the demand, and the first lot (of umbrellas) is marked 15s. and the second lot, same quality, is 8s. 6d., the public would buy all those at 8s. 6d., and so the first would fall to the same price." A portrait or group postcard is virtually a photograph mounted, and in selling these at a low price in a small quantity the sale of higher-priced work, same size, is in danger. We must regulate the supply and control the price of photographic work by combination in the form of a trade union. No under-cutting, but a minimum price. Can we persuade the Press to consult our union list and to omit to publish amateurs' (not union) names under photographers, and paying them a much smaller fee, and could not our executive act as a press agency, submitting



to all the papers? They might also approach all the trade manufacturers and request that only those on the union list should full trade discount. They might purchase, at wholesale rates, half of members, or help in the purchase of expensive apparatus. Qualification for joining the union would be efficiency, according to work taken up, proved by work submitted, facilities might be offered by leading members, or by the State, in the instruction of members. Amateurs turning professionals—i.e., unionists—, of course, be eligible. The Legislature might favour us, as all other organised labour. The State could be persuaded a great deal by opening out fresh avenues of work with strong inducements in connection with art, technical, trade, and life matters, as well as education in general. I am a member of the Professional Photographers' Association, but the handbook and circular are the only fruits in about six months.—I am, faithfully,  
SIDNEY A. DRIVER.  
Wey, near Colchester.  
April 20, 1908.

I refer this correspondent also to the annual report of the Association, printed in our issue of March 27, for a refutation of his charge of activity against the P.P.A.—Ems. "B.J."]

To the Editors.

Gentlemen,—I wonder if any of your readers have noticed the correspondence between Mr. Butt's excellent articles and the correspondence about postcards in the "B.J." recently. By a strange coincidence we have seen what a photographic business ought to be in and what it actually is to many in practice.

It is very sound odd to your correspondents to hear of one who does postcards occasionally and makes them pay. Details are necessary, except that I get 5s. for a dozen and 3d. each for copies. The fact is in my case they are a means to an end rather than the end itself, and it is because photographers have it that they have become such a nuisance. For the life of a man cannot see how anyone is compelled to do postcards at 2s. 6d. a dozen. There must be something wrong with their methods. I have it in their power to say "No!" but do not, in fact. I believe they ever really look into it further than "that up to date postcards are 2s. 6d.," hence they must do them at that if possible.

After all, there is another aspect which ought to appeal to our patrons benefit? I say most emphatically, No! not present conditions. How can they? But they ought to, and so they would under proper conditions, and so would we photographers too.

My correspondent, "Brains," shows his inability to grasp a elementary fact that postcards are being done from negatives by many leading photographers, and there are many "Old Hands" to be had for the large sum of twopence. The London photographer, who employs him to retouch his special negatives, is so ashamed of himself. But, there, it may be only a bad job. Who knows? When travellers tell us they never have been put on the market, it is evident manufacturers are alarmed, so poor "Brains" had better come to earth on with his "something in the city."

Will we realise it is not so much because postcards are they are so popular, but because they give pleasure?

Thank you, gentlemen, for the kind interest you always take on behalf.—Yours, etc.,  
R. R.

To the Editors.

Gentlemen,—Allow me to congratulate the photographers who have just awakened to the fact that even in photography some protection is needed whereby it is possible the workers may earn a living wage, and the sooner photographers recognize the fact that they are tradesmen and are working for a living rather than for themselves. The miner, the cotton weaver, the carpenter, the bricklayer, the engineer, the mason, the barber who scrapes your chin at a penny a time have means to which they subscribe weekly, enabling them to become capable of looking after their interests. But the photographer poses as an artist, a gentleman of a higher social position, fraternise with a common labourer, a man who works for his living? His stiff neck and high aristocratic bearing

would be disgraced, and yet, forsooth, what is he, and where is his picture capability without his camera? He must carry it with him exactly as the bricklayer carries his trowel or the carpenter his saw, and these men, with the addition of the miner, the cotton operative, the ironworker, and even the poor shop assistant, are the very means whereby he attains his livelihood. These men protect themselves and try as hard as possible, paying as much as 6d. per week out of their hard-earned wages to capable agents, who not only air their grievances on the public platform, but use every means in their power to help the workers to a living wage, exposing blacklegs, and meeting employees in a firm and straightforward manner. Then why cannot photographers do this thing? Surely there are sufficient of us to make some movement to improve the present trade depression brought on, not only by the postcard evil, but also by the injudicious use of the free coupon, enabling a few to rise at the expense and degradation of their fellow-men. I myself am both ready and willing to support any movement within reason, but I think the £10 licence is without the pale of scores of photographers who have followed photography as a means of livelihood, as one of your correspondents says, for over 20 years. Hoping some suitable arrangement may still be arrived at whereby something will be eventually done, I remain, yours truly,

HARRY PARKER

(A hard-working photographer).

89, Smith Road, Orrell Post, near Wigan,

April 21, 1908.

W. WATSON AND SONS, LIMITED.

To the Editors.

Gentlemen,—We should be glad if you would kindly bring to the notice of your readers the fact that the business which has hitherto been carried on at this address, under the style of W. Watson and Sons, has, to facilitate the adjustment of family interests and to enable us, by the extension of our manufacturing facilities, to provide for the growing demand for our goods, been registered as a private limited liability company.

There will be no change in the control or management of the various departments, all of which will be carried on as heretofore. The registered office will be 313, High Holborn, W.C.—Yours faithfully,

W. WATSON AND SONS, LTD.

313, High Holborn, London, W.C.

April 16, 1908.

PHOTOGRAPHIC INSTRUCTION IN MANCHESTER.—Prospectuses from the Municipal School of Technology, Manchester, inform us of the classes just commencing in the "Photography and Printing Crafts" departments, presided over by Mr. Charles W. Gamble. Many readers of these lines who are within easy reach of the northern capital will be glad to note that a course of lectures of a special character has been arranged, which will deal with different subjects of special interest to pictorial workers. The lectures will in all cases be devoted to the practical aspects of the branches dealt with. The course will consist of eight lectures, which will be fully illustrated by examples and other demonstrations. The syllabus is as follows:—May 5, Platinum Printing, Mr. C. F. Inston; May 12, The Hand Camera and its Use, Mr. F. Fielding; May 19-26, Lantern Slides for Pictorial Purposes, Mr. James Shaw; June 2, Carbon Printing, Mr. F. Fielding; June 16, Stereoscopic Photography, Mr. F. Eastwood; June 23, Oil Printing, Mr. C. F. Inston; June 30, The Preparation of the Negative and Control in Printing, Mr. T. Lee Syms. In addition to these arrangements a note should be made of Mr. Gamble's course of eight lecture demonstrations on the preparation of orthochromatic dry plates and the principles underlying their production and use, together with the making of correction filters for the same. The operations will be fully demonstrated, and the use of the special testing apparatus will be shown and explained. The syllabus is: The teaching of the spectrum camera; gelatinobromide of silver and its behaviour towards light of different wavelengths; spectrum colours and pigmentary colours; the sensitising action of colour stuffs; making and testing orthochromatic plates; colour sensitometers; laboratory and studio methods of testing; making and adjusting colour correction filters; the rendering of colour luminosities into monochrome. This course commences on May 7, and the fee for the eight lectures is 5s.

## Answers to Correspondents.

- \**All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.*
- \**Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.*
- \**Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., 24, Wellington Street, Strand, London, W.C.*
- \**For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. The unmounted copies of each photograph must be sent with the fee.*

### PHOTOGRAPHS REGISTERED:—

**J. J. Forsyth**, 57, Cowgate Street, Kirkintilloch. *Photograph of Magic Ruby, Performed by St. Andrews Musical Association, Kirkintilloch, March 16, 1908.*  
**G. Toulmin and Sons**, 127, Fishergate, Preston. *Photograph of St. Andrew's Boys' Football Team, Preston. Photograph of St. Walbuge's Boys' Football Team, Preston.*

**J. A.**—Messrs. Jonathan Fallowfield, 146, Charing Cross Road, London, W.C., make a specialty of these goods.

**J. W. M. MASON**.—For ordinary plates, tartrazine and Rose Bengal. For ortho. plates, these two dyes, with also methyl violet. For panchromatics, acid green, naphthol green, and tartrazine. But you had best get the dark-room safelights obtainable commercially.

**HOOSIER**.—Use thin bluish engineers' tracing cloth, obtainable from firms such as J. Halden and Co., Great Chapel Street, London, S.W.

**Dextrine Paste**.—In making a mountant of white dextrine I find the paste reddens litmus paper, and therefore fear it would be unfit for photographic use. Would neutralising with bicarbonate of soda render its use safe, and what will be the best preservative for the paste?—**E. R. S.**

Dextrine, whether white or yellow, is almost invariably acid, and therefore needs to be neutralised before use. Bicarbonate of soda can be used for the purpose. The best preservative is oil of wintergreen or thymol.

**REFLEX CAMERAS**.—I am desirous of obtaining working drawings, dimensioned sketches or scale drawings, of the shutter and mirror mechanism of a reflex camera, such as is used on most of the modern cameras of that type. Could you tell me, through the columns of your paper, where I could obtain these, or, if not, give me some sketches in your paper?—**T. F.**

None are obtainable, except in the patent specifications relating to reflex cameras. We advise you to consult the official classified abstracts of patents for the last year or two.

**TITLES ON POSTCARDS**.—(1) I should be greatly obliged if you would be kind enough to tell me how postcards are titled, particularly in the plate-sunk ones, black lettering on a pure white ground. (2) Also where could I obtain a die for plate sinking and cost of same.—**PLATE MARK.**

(1) We have repeatedly answered this query, and would refer you to our issue of July 12, 1907, for details. In brief, the method is as follows:—The words forming the title are set up in type and photographed on a process plate. The subject negative having been made with a clear margin round it, a strip of the title negative is laid down on this margin by stripping, and the clear margin then filled up with "photopake" or other blocking-out mixture, except over the strip of title, which is made dense enough in the first instance to print white. (2) Any large photographic house, such as Jonathan Fallowfield, and others.

**GOLD CHLORIDE**.—I should feel obliged if you would kindly let me know how many grains of bi-chloride I should obtain by dissolving half a sovereign in acids.—**J. T.**

There are 56 grains of pure gold in half a sovereign, so that you should obtain a little over 100 grains of gold chloride.

**A. G. C.**—The print is evidently on collodio-chloride paper toned with gold and platinum. Almost any of the many C.C. papers will give you this result.

**T. M.**—One formula which has been recommended is: White pale yellow shellac, 300 parts; gum elemi, 30 parts; Canada balsam, 50 parts; methylated spirit, 1,000 c.c.s.

**INDIA-RUBBER SOLUTION**.—Can you please tell me how to make india-rubber solution? I want it for temporarily attaching masks to negatives. I have tried to dissolve the rubber in benzole, but cannot get it to dissolve; although it has been soaking for fortnight it is still as hard as ever.—**R. SMITHERS.**

You have evidently been trying to use the wrong kind of rubber, viz., vulcanised rubber, which is not soluble in benzole. You require what is known as masticated rubber. Instead of dissolving the rubber yourself we should recommend you to purchase tin of solution at one or other of the shops where india-rubber goods are sold, and thin that down to the consistency you require with benzole. This will be less trouble than dissolving solid rubber. For the purpose you require you would find solution sold in tubes, for the repair of cycle tyres, very convenient. You can squeeze a little out on to the negative where required, and then attach the mask.

**LENS QUERY**.—I have lately been given a half-plate camera. It is a very old one, but very well made. It is fitted with a still lens, bearing the name of "A. Ross." The camera is a landscape one, and I shall only use it for outdoor views. Would there be any very great advantage in replacing the present lens by one of anastigmatic kind? I may say that I know nothing of optics, but am troubling you with this question. Naturally, I do not wish to lay out money, which is none too plentiful with me, unless I could ensure getting better results with it than with the present lens.—**X. Y. (Hants.)**

If you are going to confine your work entirely to landscapes cannot have a better lens for the purpose. The disadvantage of the single landscape lens is that, in photographing buildings, which happen to come near the margin of the field are slightly distorted—i.e., curved inwards. Also the lens is slow, by reason of the comparatively small apertures at which it has to be used. For pure landscape work some of our best men of the past generation used the single lens in preference to all other forms.

**DISSOLVING SHELLAC**.—I shall be thankful if you will kindly enlighten me on the following matter: A year or two ago I made a negative varnish according to one of the formulæ given in "Almanac," and excellent it proved. Last week I attempted to make up some more according to the same formula, but I could not get the lac to dissolve, and it was sent to me as the best varnish. It softened somewhat by long digesting in the methylated spirit, but I could not get it to dissolve at all. What can I do?—**AJAX.**

The fault is in the lac. It has become "perished" by keeping. Bleached lac is very liable to get insoluble in spirit by long keeping, more particularly if it is not kept in a somewhat moist condition. The only thing you can do is to get another sample, get it, if possible, direct from a lac bleacher, so that you can ensure that it is freshly bleached. When the supply is drawn from the shop there is no telling how long it may have been in stock.

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## SUMMARY.

the Oil Process.—Mr. Robert Demachy reviews the exhibition of prints now being held at the Photo-Club de Paris. (P. 340.)  
 an exhibition of bromoil prints opens on Monday next at the house of THE BRITISH JOURNAL OF PHOTOGRAPHY.  
 the amalgamation of "The Amateur Photographer" with "The Photographic News," and of "Photography" with "Focus" has been generally known within the past few days. (P. 337.)  
 the Hinton Memorial Fund has now reached a total of £368. (P. 345.)  
 the Modern Studio.—Mr. Butt's current article continues the series on the furnishing and decoration of the studio. (P. 341.)  
 the chief facts of foreign and international copyright form the subject of this week's (concluding) "copyright conversation." (P. 344.)  
 print trimmer and a self-portrait shutter are among the patents he week. (P. 345.)  
 the portrait postcard and the modified Farmer's reducer of Mr. Welborne Piper figure in our correspondence columns this week. (P. 349.)  
 some editorial notes on the procedure to be adopted by photographic inventors when taking out a patent are given on page 338.  
 fraudulent enlargement canvasser received two months' imprisonment with hard labour at Leicester last week. (P. 348.)  
 consular report states that Mexico offers good prospects for photographic entertainments. (P. 344.)  
 exposure in enlarging. Mr. J. Nixon writes further on his recent article on page 350. Our comments appear on page 338.

## "COLOUR PHOTOGRAPHY" SUPPLEMENT.

Mr. J. C. Warburg contributes a report of a recent Autochrome exhibition by M. Meys, of Paris, of whose methods some details are given. (P. 33.)  
 M. Didier, the inventor of pinatype, has recommended his process as a practical means of preparing paper prints from Autochrome transparencies. (P. 35.)  
 Mr. E. Stenger and Herr F. Leiber contribute some notes on the use of the Leuco-bases in the reproduction of Autochrome pictures. (P. 34.)  
 modified method of assembling the three-colour components in the Rotary carbon process have been published. (P. 37.)  
 the translation of a paper on the chemistry of the bleach-out process is given on page 38.  
 the recent results on the gradation of plates exposed to light of different colours have been published by Dr. Lohmeyer. (P. 40.)

## EX CATHEDRA.

**Bavaria in bromoil.** An exhibition illustrative of the Bromoil process will be opened at "The British Journal of Photography" on Monday next, May 4, and will remain open until Wednesday, May 27. The exhibition consists of bromoil prints from negatives made in Bavaria by George E. Brown. "Straight" enlargements of these, made by Messrs. John J. Griffin and Sons on their matt "Snow-white" bromide paper, have been treated by Mr. Welborne Piper, the inventor of the Bromoil process. The final and vital operation in the production of the exhibited pictures, namely, the pigmenting, has been done by Mr. F. C. Tilney, to whom the lion's share of any pictorial result obtained must therefore be assigned. Each visitor to the exhibition will be presented with a catalogue of the prints and a brief instruction and formula sheet by Mr. Piper for the working of the process. The exhibition, as announced elsewhere in this issue, is open daily from 10.30 to 4.30 (Saturdays 10.30 to 12.30).

**The Colour Exhibition.** We would again draw attention to the forthcoming exhibition of the Society of Colour Photographers, which is to be held during June at the house of the "British Journal." The last day for entries is May 12, and for exhibits, May 15. The entry form should be sent to the Honorary Secretary of the Society of Colour Photographers, Mr. Henry J. Comley, Surrey House, Stroud. The exhibits themselves should be addressed to Mr. Comley at 24, Wellington Street, Strand, London, W.C. It may be intimated that, as at the exhibition of the Society held six months ago, effective provision will be made for the display of Autochrome and other transparencies, of which it is anticipated there will be a particularly fine show.

**Exeunt "Focus" and the "P.N."** Readers of our four weekly contemporaries have no doubt been somewhat astonished to see the announcements of two events, the imminence of which had been known in certain circles for the past week or two. We refer to the amalgamation of (1) "The Amateur Photographer" and "The Photographic News," and (2) "Photography" and "Focus." Messrs. Hazell, Watson, and Viney have purchased the "Photographic News," which from May 12 they will issue as "The Amateur Photographer and Photographic News." In thus acquiring a journal which for a few months short of fifty years has appealed to amateur photographers, they secure the adherence of a large body of readers, and, at the same time, have arranged with Mr. F. J. Mortimer, for the past two years editor of the "News," to edit the joint publication. In the case of the other amalgamation, the five-year-old "Focus" has been purchased by Messrs. Iliffe and Sons, Ltd., who will unite

it with "Photography," under the title "Photography and Focus," commencing also from May 12. Mr. R. Child Bayley will continue in the occupancy of the editorial chair in Tudor Street. These changes appear to have been received with equanimity, not to say satisfaction, by readers, advertisers, and distributors. All, we think, were agreed that there were too many photographic journals. In the new circumstances our elementary friends can take their pick of the two reconstructed journals, while we of the "B.J." shall continue in that policy of dealing fully with technical and commercial matters which has been adhered to in these pages for the past fifty-four years.

### Exposure in Enlarging.

Our note on Mr. Nixon's method of adjusting the enlarging lantern has drawn a reply from that gentleman in which he assumes that the lens to which we referred in our note was a lens of  $f/4$  aperture, and therefore of too large a diameter to render his rule workable. He arrives at this conclusion from what he describes as "internal evidence"; but, whatever this may be, it has misled him, for the lens in question was an 8 in. R.R. working at  $f/8$ . He suggests that stopping down to obtain even illumination would have made his theory work all right; but, as a matter of fact, stopping down makes the illumination even worse. It may be news to Mr. Nixon to learn that with big lights it is generally easier to obtain good illumination with large apertures than with small ones, and that even if his theories with regard to aperture held good they would be impracticable, for a lens of small aperture is next to useless for enlarging purposes. With incandescent gas an  $f/8$  lens such as we used is too slow for anything but a small degree of enlargement from a thin negative. Using an  $f/4$  lens of 6 in. focal length it is possible to get good illumination with the image of the light on the projector, but this is only because there is considerable latitude of adjustment with the big light and a lens of such large aperture. Mr. Nixon's adjustment can therefore be carried out in circumstances in which his rule of exposure cannot apply. Mr. Nixon now goes so far as to say that his rule of exposure will hold good for any light and any lantern if one stops down until the disc is even. We would suggest that he tries this theory in practice with his own lantern. He also comes to the comfortable conclusion that because his rule of exposure has not been worked out before, no scientific man has ever taken the trouble to calculate the relations which ought to obtain between condenser and projector to secure the greatest efficiency in the instrument. This is a very big assumption. Mr. Nixon would be far nearer the truth if he suggested that scientific men long ago found out that theories worked out on paper had an inconvenient habit of breaking down when practically applied to the lantern. He evidently has not had much experience of enlarging, otherwise he would appreciate the value of small powerful sources of light, such as the arc, with projecting lenses of large diameter, with which arrangements his theories fail altogether. The total absurdity of using an arc-light and stopping down the lens to make his theory of exposure workable has evidently not occurred to him.

### The Theory of Vision.

A little time ago we drew attention to the fact that the theories of stereoscopic and binocular vision had been greatly confused by the unwarrantable assumption, by Brewster and others, that young children, and new-born animals generally, can perceive distance as readily as adults. This idea has led many to look upon all our visual powers as automatic or "inborn," and to neglect what is the obvious truth, viz., that we have to learn to see just as we have to learn to speak or walk. Why Brewster should have ever lent his support to such a theory is incomprehensible, for

the fact that very young children have little or no control over their vision was well known in his time and long before. Our attention has been directed to an interesting note on this subject in Pepys' Diary, written on May 2, 1659, while on board the "Charles," from which ship Charles II. landed in England the next day. It appears that Pepys had been entertaining to dinner in his cabin a number of friends, including Dr. Scarborough, physician to the King, and some other doctors. The conversation evidently turned on the selfsame subject that we are often discussing 250 years later, that is, upon vision; for when all the doctors again assembled in the same cabin to supper our good friend Pepys "put Dr. Scarborough in mind of what I heard him say, that children do, in everyday's experience, look several ways with both their eyes till custom teaches them otherwise; and that we do not see but with one eye, our eyes looking in parallel lines. The last part of this sentence suggests a resemblance to the theories of vision of Drs. Wells and Le Conte. Dr. Scarborough is described in a footnote as a learned and incomparable anatomist, and if he ever produced any books upon vision they must be well worth referring to.

### Colour Pseudo-Stereoscopic Effects.

Some curious and interesting effects are produced when colours are observed through single non-achromatic lenses. These were explained by Herr E. Grimsahl in Dr. M. von Rohr's articles that we reproduced in our last issue. Very similar effects (as a correspondent pointed out on another page) are, however, sometimes observable without the aid of a viewing lens, for colour patches projected on to a lantern screen often show a very remarkable amount of relief. In Dr. Mees' lecture on "Screen Plate Photography," given a short time ago at the Royal Society of Arts, a number of colour charts were shown upon the screen, and in these the colours showed a very marked difference in apparent distance. In several cases the red appeared to stand out several feet in front of the screen, and such an effect is at first sight not quite easily explained as the ones that depend on the use of uncorrected single lenses. The fact that the eye is not achromatic is, however, the real cause in this case. If a red patch and a violet patch are on the screen at the same time, then if we accommodate our eyes to focus the violet the focus for the red is behind the retina or just where the focus of a nearer object would be. In changing the accommodation to focus the red the change is just the same as that which would be necessary to focus a nearer object; therefore the sensation of nearness is aroused. The effect is often very obvious in the case of bright red lettering, especially when it is on a very dark or black background.

### SOME HINTS TO PHOTOGRAPHIC PATENTEES

In our issue of September 27 of last year we dealt with some of the more important points of the then new Patent Act, which became law on the first day of the present year. As we then pointed out, the Act was a highly protective measure in disguise, and one of the first salutary results of its becoming law has been the erection of factories in this country by Continental manufacturers, in order to permit of their complying with the clause in the Act which makes it necessary for a patent to be worked in the country in order to assure its maintenance. It is not, however, with this side of patent law that it is our intention to pen a few notes on the present occasion. Our object is to give some few hints for the benefit of those who not infrequently address themselves to us for information on patent matters. Very frequently our advice is bound to be in the nature of discouragement of the would-



patentee, for the reason that, unless an invention has very great commercial application, the cost of upholding it becomes a serious drain on persons of small resources, and, therefore, the policy of patenting should be postponed until the invention is at any rate in such an advanced state that it may be quickly disposed of or commercially applied. Further, the inventor, not to say the photographic inventor, is usually a very enthusiastic person—a glance through the patent specifications which are published shows that he cannot be anything else—therefore, it may be fitting to give one or two hints of the ordinary method of procedure. As is well known, the Patent Office fee for granting a provisional specification is only £1, although, unless the inventor draws up the specification himself, he must, in addition, pay the agent's fee, which may be moderately placed at from two to five times that amount, the sum depending on the amount of work entailed in drawing up the patent. We are sometimes asked whether it is worth employing an agent or not, and our reply usually is that in the case of inventions which promise to be commercially valuable the money spent on having the wording of the claims properly drawn up is certainly well spent. We may, however, draw attention to one or two of the points which must be observed by an inventor making out his own specification. Using the official form, obtainable from Southampton Buildings, he must give a declaration to the effect that he is in possession of a certain invention, the nature of which he must also give, and in regard to which he must claim to be the true and first inventor. This declaration is accompanied by either a provisional or complete specification; a very general course is to apply for the first instance for a provisional protection, the procedure as to which is as follows:—A form A and two forms must be obtained from the Inland Revenue office, the High Courts of Justice, Strand, or from the chief post office in most large towns. One of the B forms must bear a stamp, and may be purchased in this state, or the stamp impressed after the form has been filled up. The form A, when filled up, is a declaration that the applicant is the true and first inventor. The form B must be filled in duplicate, and one of the B forms must bear the stamp; the other need not be stamped and must describe the nature of the invention. Full working details need not be given here, but only a descriptive outline. The forms are placed with the Comptroller, Patent Office, Southampton Buildings, London, W.C.

After the application has been accepted the invention is protected. But within six months of the date of the application the complete specification must be lodged, otherwise the application is deemed to be abandoned. During that period the inventor, as his invention is protected, has the opportunity of improving or perfecting it; during the time he can negotiate for its disposal, or make arrangements for its working, as he may think fit. It will be seen that there is some advantage in lodging a provisional specification prior to the complete one. It is just being mentioned that the complete specification must be left within six months of the application. The Comptroller, however, has the power to grant an extension of the time on payment of a fee, but in no case for more than a month.

For the complete specification two forms C are necessary, and they must be filled up in duplicate, as were the provisional ones. One of these must be stamped with a stamp, but, like the provisional, it may be filled up and stamped afterwards if desired. If the patent is, say, for a piece of apparatus, the specifications should be accompanied by drawings, which must be on white hot-pressed or calendar drawing-paper. The sheets must measure thirteen inches from top to bottom, and be either

eight or sixteen inches wide, and have a border line half an inch from the edge. These dimensions must be adhered to, as the drawings have to be reproduced in the published specifications. The Patent Office will supply, free of charge, a specimen drawing on application to serve as a guide. The complete specification should be drawn out with great care. It must fully describe the nature of the invention and the manner in which it is to be performed. Such details must be given as will enable any ordinary craftsman to work the invention after the patent has expired. This is, practically, one of the conditions upon which the monopoly of a patent is granted. Unless such details are given the patent can be refused by the Comptroller; or it may, in the case of litigation, be set aside on the ground that sufficient information was not afforded to enable an ordinary workman to carry it out from the directions given in the specification. If the forms B and C are not large enough to contain the description of the process or apparatus, they may be continued on ruled foolscap paper with a margin of two inches on the left-hand side. Suitable paper for the purpose may be had at most law stationers under the name of "continuation paper."

The complete specification must end with a distinct and proper statement of the claims. They must form a brief statement of the items which constitute the invention, and care should be taken that these claims contain neither more nor less than it is desired to protect in the patent. Any number of claims may be made, but it is unwise to make more than are actually necessary to protect the patent. It should be mentioned that if, in a case of litigation, one of the claims is proved to be bad, the whole patent becomes null and void. In America the case is different. There, if twenty claims were made and nineteen of them proved bad, the patent for the twentieth would stand. Hence it will be recognised that the fewer claims made, so long as they are sufficient, the better.

After a complete specification is advertised as accepted it is open to inspection by anyone on payment of a small fee. But after two or three weeks it is published, and may be seen in the library at the Patent Office free of charge, or may be purchased for eightpence. Within two months of the specification being advertised as accepted, and its being sealed, anyone may oppose the sealing on any of the following grounds. We here quote from Section 11 of the new Act:—“(a) That the applicant obtained the invention from him or from a person of whom he is the legal representative; or (b) That the invention has been claimed in any complete specification for a British patent which is or will be of prior date to the patent the grant of which is opposed, other than a patent deposited pursuant to an application made more than fifty years before the application for such last-mentioned patent; or (c) That the nature of the invention or the manner in which it is to be performed is not sufficiently or fairly described and ascertained in the complete specification; or (d) That the complete specification describes or claims an invention other than that described in the provisional specification, and that such other invention forms the subject of an application made by the opponent in the interval between the leaving of the provisional specification and the leaving of the complete specification; *but on no other ground*” (the italics are ours). From this it will be seen that prior publication or use is not a ground for opposition, though it would invalidate a patent, even if sealed.

At the sealing of a patent a further fee of £1 has to be paid, as an investigation fee as to whether the invention has formed the subject of a patent during the past fifty years. But, as we said in the previous article, photographic patentees will do well to make independent investigations for themselves; and for this reason. An

invention may have been published and described in the "Journals," but not patented, yet that would be sufficient to upset a patent, if contested, notwithstanding that one has been sealed for it.

It was mentioned above that if any one of the claims

made in a specification was found to be bad the whole patent goes. A patentee can at any time amend his specification by way of disclaiming any portion of it, but at the same time anyone is at liberty to oppose the amendment.

## AN EXHIBITION OF OIL PRINTS AT THE PARIS PHOTO-CLUB.

It is a pity that one-process shows are so rare. There is no better opportunity for judging the merit of a process than when two or three hundred examples of its possibilities are held up to criticism in the same room, without the disturbing neighbourhood of other mediums. For this reason the international exhibition of oil prints now open at the Paris Photo-Club's rooms—44, Rue des Mathurins—will interest, not only the amateur in oils, but all men of pictorial feeling. For the oil process is surely a severe test of the aims and capabilities of the man who handles it. With gum-bichromate, an indifferent photographer, devoid of artistic feeling, might, by the pure chance of a soft coating flowing in the right direction, produce one happy fluke-picture. And this is sufficient sometimes to establish a life-long reputation. He would have no such luck with oils. Engraver's ink does not move by itself.

Thus, after having carefully examined the numerous oil prints on the Photo-Club walls, one recognises three distinct classes of work. That of men who have tried to surprise the public by producing a print in oils that could be mistaken on close inspection for a platinotype, a carbon, or a bromide print; a purely technical success without much interest even from that particular point of view, for the number of such pictures shows that the feat is not a difficult one to achieve.

The second class comprises work similar to that of the first class in regard to the lack of medium quality, but showing on the part of the authors an evident and often successful preoccupation towards correcting false values and improving the general effect of their pictures. This is a step further. The third class, and I must confess that it is very much the smallest, shows *oil quality*. I mean to say that its peculiar charm, or its particular effects, are special to the oil process at its best, and could not be evolved through another medium. The authors of this kind of work have understood the personal advantages of the process, and have used one, several, or all of them, but always to the fullest extent. These pictures are sometimes imperfect from a technical point of view, when compared with the bromide style of oils. They are sometimes a bit risky in values, but, pictorially, they are distinctly pleasing; much more so to my taste than the correct but frigid prints of the preceding classes. Purists will certainly grudge them photographic quality, but we have become accustomed to this periodical grumbling. The same has been said about every new printing process since Daguerreotypes went out of fashion.

The English collection is composed of fifty pictures; three by Mr. Arbuthnot, one by Mr. Cocks, three by Dr. Evershed, six by Mr. Gear, five by Mr. Huson, two by Mr. Dudley Johnston, eight by Mr. Rawlins, one by Mr. Schilling, two by Mr. Basil Schön, three by Mr. Staddon, three by Miss Stevenson, two by Mr. Wickison, two by Miss Warburg, one by Mr. Warburg, and eight by Mr. Warner. I am told that it may be considered as representative of the élite of the British school. All these pictures are hung on one large panel, except those—in colour—by Mr. Warner, who has one smaller panel all to himself. The English monochrome work "*se tient bien*" (*holds itself well*), as we say in French. The general tone is subdued, and the technique (especially in Mr.

Gear's pictures) is very good; too good in some cases, for some authors show that perfection of technique has been their principal aim. One of Mr. Staddon's pictures, for example, absolutely perfect as to technique, and pleasing as a whole, does not appear to owe any of its qualities to the particular process that has been employed. It might be taken for an excellent and beautiful carbon print. The father of oils, Mr. Rawlins, shows eight interesting pictures treated in quite a different style from that which the French school has, more or less, adopted. The difference in tools and paper may account for this, independently of the personal factor. Mr. Dudley Johnston's large pictures, full of mystery and suggestion, count among the very best of the collection; but why has Mr. Johnston surrounded these delicate schemes in grey with heavy borders of dull black? Close framing, I believe, is only effective when the picture itself is stronger in tone and contrast than its surroundings, which is not the case with these delicate works. Mr. Gear seeks for effect, and gets it, though I cannot help quarrelling with the massiveness of some of his shadows (Burgos and Codova), and with the value of the background of "A Spanish Village." But the quality of his pictures is fine, and his sunlight effects sparkling. Other examples of strong, oily black and harmonious scales of values, will be found in "Marylebone Road" by Mr. Wickison, and the "Stadhuit Tower" by Mr. Lincoln Cocks. Mr. Arbuthnot's pictures are all of them very successful, the "Donkey Engine" especially, and Miss Stevenson has sent an excellent portrait of a gentleman. There is also a delicate Japanese effect by Miss Warburg; a portrait of a lady, who strongly resembles Queen Victoria, by Mr. Warburg; and some good work by Messrs. Basil Schön, Evershed, and Schilling.

Mr. Warner has courageously attacked the most difficult of the oil process, and his courage has been well rewarded. His eight prints in colour have attracted general attention. The tones chosen by Mr. Warner are subdued, and he has prevented any useless discussion about truth in colouring by frankly adopting a conventional rendering in two, and sometimes three colours without any attempt at oil painting by photograph. But I believe his pictures would be still more effective if the prints were well stretched and framed in the style of colour engravings.

Amongst the Belgian collection Dr. Cardyn stands pre-eminent with a very fine head of a man—one of the very best things in the room. He is undoubtedly a clever draughtsman, and perhaps because of this, he has not been able to withstand temptation to add here and there to his picture certain lines of pencil that do not add to the beauty of his work. Photograph prints, however altered by local development, will never show a black outline to a light tone against another light tone—it is distinctive of pencil or charcoal drawing—no manipulation inking an oil print will produce anything like it. But the study of a head is, nevertheless, quite remarkable. The rest of Dr. Cardyn's exhibit, though less striking, is far above average.

The French section counts such well known oil workers as Major Puyo, Mlle. Laguarde, M. Michan, Comte de Montge-



t, Viscomte de Singly, Messrs. Bidault, Billioque, Valke, ard, de Santeuil, etc. Mr. Potonnié is a new adept in the process, and his pictures claim attention at the outset. They are broad and daring in treatment, simple in subject and position, and they possess a quality which places them very high above the usual level.

This one process exhibition has had excellent results. It has proved that oil printing is not a fad of the moment, for when a process as young as this one is can produce five hundred

examples at a few weeks' notice, its vitality is made evident. Also as a lesson it has been more useful than the ordinary salons, because of the uniformity of the printing medium, which made conditions more equal for all exhibitors and allowed of a sounder criticism on the part of the public. It is to be hoped that the Royal Photographic Society will follow our lead, and devote its influence—and its spacious rooms—to bringing together the best examples of oil printing from England and the Continent.

ROBERT DEMACHY.

## THE MODERN NOTE IN THE DESIGN AND FITTING OF PHOTOGRAPHIC PREMISES.

### VI.

Under this title we continue, with the following article, a series of chapters by Mr. Drinkwater Butt, F.R.P.S., on the principles which should guide the photographer in the external design and decoration of his place of business, and in the arrangement and appropriate equipment of its various apartments. Photography being essentially an "artistic" business, taste and style need to be more in evidence than is necessary in businesses which are frankly and wholly commercial in their character. Therefore, while it is not possible to prescribe any plan which can be followed in particular cases, general rules can be laid down in such a way that a photographer can take advantage of them in giving his establishment, both outside and in, an air of distinction, which is bound to carry weight with his townspeople, and must turn out to his commercial advancement. Of course, a fortune may easily be squandered on such adornment of the studio, but in these articles Mr. Butt will confine himself to such schemes as a photographer in a moderate way of business need not consider beyond his means. Moreover, the articles will be of assistance in pointing out how particular materials may be used, even on the smallest scale, in improving or improving existing premises. The notes will conveniently be divided into four sections:—

Shop-front and Show-case.

The Reception-Room.

The Studio.

Planning complete Premises.

The last chapter will consist of a description of as complete a set of photographic premises as can be imagined—an establishment, in fact, which but few living photographers would feel justified in putting up. Yet the scheme in its various parts can be commended to the study of even the small photographer, on account of its detailing arrangements, which can be abstracted in pieces from their surroundings and utilised with advantage in businesses which are anything but magnificent in size.—EDS. "B. J."]

### Floor Coverings.

Floors of various sizes, and varying in effect from dark to light, however, very useful indeed, and may be seen included in all studio interior illustrations. Of the Oriental varieties the Persians are generally the best, as being small and broken in pattern and not sufficiently contrasty in colour to become inartistic in a photograph. Occasionally Japanese ones of similar character may be come across, and are, of course, very much cheaper, costing shillings as against the pounds it is necessary to pay to obtain really good Persian examples. The writer recently bought a quite nice Jap rug, to use in a painting studio, for less than half a sovereign. Some quiet, soft, and photographically good patterns are also produced in Wilton and Axminster, Messrs. Liberty recently supplying me with the former for the photographic studio of an earnest amateur worker in London, while I will probably shortly use more for a large business studio in Dublin. Large staring designs, such as are often met with in Brussels, must, of course, be avoided, as also a large quantity of red in the pattern of any make, as that colour will come startlingly black in the photograph, even if its reflection does not actually add to the necessary exposure of the

In this connection I recently came across a case in which I did not understand why a professional photographic pupil giving the very long exposures he reported and yet getting splendidly under-exposed negatives, until I visited his studio. I found a dull red paper on the walls and a brilliant red carpet on the floor, which together filled the place with red light, that was, of course, fatal to rapid work. On the carpet being taken up, the necessary exposure was reduced nearly fifty-five per cent., and later, with the paper removed, and

the whole place re-decorated in a lighter key, fifty per cent. less exposure yielded satisfactory negatives.

### How Four Walls were Made into a Studio.

To revert, however, to our illustrations, the two photographs of the "North Country Studio," Figs. 15 and 16, represent a place which the writer found as a mere barn, and converted, at but small expense, into the modest but not displeasing interior shown. As no structural alterations could be made, the very much too flat roof, and the insufficient windows for side light, had to remain as they were, and he made the best of in use, but the ugly iron girder which served as a purlin to the rafters was cased in, and a cornice formed round the room of similar wood moulding, while ornamental pilasters where required were formed partly from woodwork already in the possession of the proprietor. The "cosy corner" was constructed much in the same way, the frieze over the opening being part of an Adams mantel, and the "bulls'-eyes" in the glass doors of the corner cupboards being taken from an old house just then being pulled down in Hampshire. The studio was, as will be seen, quite a small one, but was liked by both operator and sitters as a useful and pleasant apartment to work in and visit.

As a further illustration to our subject we are also able, by the kind permission of Messrs. Speaight, to give a photograph of their studio in New Bond Street, in which their well-known and artistic child photographs are produced. As will be seen, this also is not a particularly large apartment, but it is furnished with all the knowledge and good taste which we have noted in a previous article as characterising their premises throughout. The pieces of furniture shown are all genuine antiques, and the scheme of decoration is noticeable for its quiet simplicity and restful effect. The studio is constructed for both day and



Fig. 15.—"A North Country Studio."



Fig. 16.—"A North Country Studio."

electric light use, the installation of the latter illuminant consisting of eight large arc lamps of ten thousand candle power each, the light from which, though used by reflection only, is quite sufficient for the very short exposures naturally required by the exigencies of their special and difficult business. The

backgrounds used are all on stretching frames, which slide one behind the other in a set of grooves at the end of the studio so that any one required may be easily brought into position behind the space reserved for the child sitters, with whom Messrs. Speaight are so very successful.



### A Design for a Complete Studio.

Our final illustration is a sketch by the author, for the arrangement and furnishing of the studio which forms part of the complete photographic premises, the general planning of which will be discussed in the next and final article of this series. It

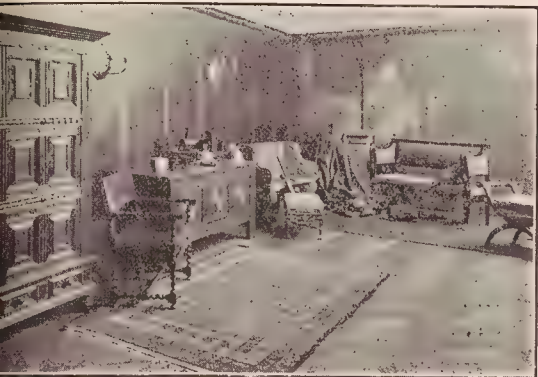


Fig. 17.—A Studio at Messrs. Spaight's, Limited.

rather exceptionally large apartment, being somewhat over twenty feet in size, with a total height of about four feet. It is designed, as will be seen, on the single slant principle, which, where sufficient height can be obtained, is certainly the best form for the glazing of a photographic studio, as a weather-

light tee iron, and so obstruct the illumination far less than the necessarily stout wall plate of the ordinary span or lean-to construction. In the latter, indeed, the plate has often to be made so heavy that it cuts the light into two, and consequently gives double high-lights in the eyes of the sitter, which spoil the expression if left, or cause much unnecessary work for the retouchers and spotters if taken out on the negative or prints. The pitch of the roof is sixty degrees, so that there are actually only one or two days at midsummer, when the sun at its highest noon altitude can look over the ridge into the northward facing apartment.

The roof, apart from the glazing, is of slate at the sides, with a zinc flat at the top, and is carried on the two steel principals shown, the tie rods of which, it may be noted, are kept at nine feet from the floor level, to allow of ordinary sized backgrounds on stretchers or stands being moved easily beneath them.

The glazing is carried to within four feet of each end of the studio, but in the drawing the blinds are shown partly covering it at different heights to make their positions and use more clearly intelligible. They are, of course, fixed upon spring rollers at top and bottom. For artificial lighting eight large electric arc lamps are shown suspended from the roof, the light from which could be used by reflection in the same manner as in the studio of Messrs. Speaight already referred to.

The semi-circular recess at the east end of the studio has also already been described. The window at the same end, which opens on to a well top-lighted landing, can, of course, be curtained off, or used to modify the lighting, or as a background or accessory in itself, which latter use might also at times be

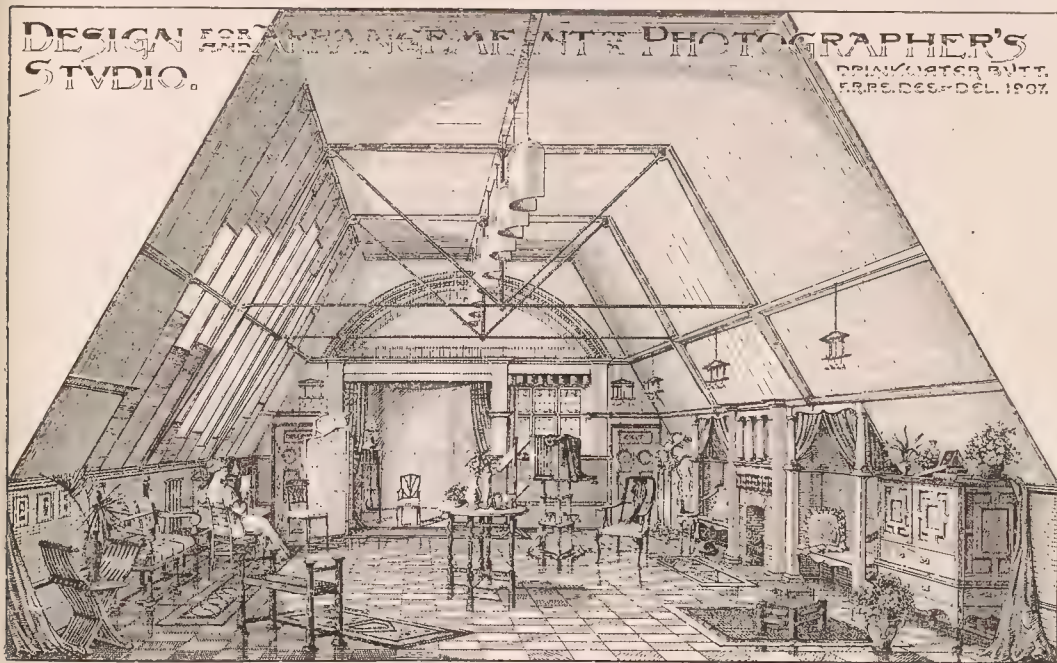


Fig. 18.

roof is thus most easily and surely obtained by the use of Simplex, or other patent system of glazing without putty; it is also easily cleaned, does not retain fallen snow upon it, and is a simple form for which to arrange the blinds, one set pulling down, and the other up to the purlin, which, owing to the steep pitch of the sash bars, can be made of

made of the mantel and its adjoining seats. The doors to left and right lead respectively to the dark room and to the stairs and lift.

The general scheme of decoration would be cream or ivory white for the ceilings and woodwork, with a warm gray ingrain paper for the walls; the floor being of parquet in two tints, or

of inlaid linoleum of similar pattern. The furniture shown embraces both antique and modern examples, as already referred to, and includes a cabinet which would be found very useful for containing toys, etc., which might repose unseen therein until wanted at the critical moment for the wonder and delight of child sitters. A good movable multiple background stand

and perhaps one or two well-designed architectural accessories are about all that is required to complete the furnishing, and these may be imagined as being at the end of the room not shown in the drawing.

DRINKWATER BUTT, F.R.P.S.  
(To be continued.)

## CONVERSATIONS ON COPYRIGHT.

[COPYRIGHT.—The sole and exclusive right of copying, engraving, reproducing, and multiplying any photograph and the negative thereof by any means and of any size [Extract from the Copyright (Works of Art) Act (1862)]. The following article concludes the series of chapters on the law of copyright, in which our aim has been to place the chief points in copyright law in a way in which they can be grasped more easily than in a set treatise. The subject has been divided into five sections, viz.:—I. Ownership of copyright. II. Registration of copyright. III. Sale or part sale of copyright. IV. Infringement of Copyright. V. The present and last conversation—foreign and international copyright.]

### V.—FOREIGN AND INTERNATIONAL COPYRIGHT.

Q.: I take it from our subject this week that copyright is obtainable in other countries as it is in England?

A.: Certainly it can be obtained; but the conditions are different in almost every country. Different formalities are necessary, and the degree of protection is different.

Q.: Just so; but this is a matter which interests only those in these countries. The point on which I should like some information is how the Englishman secures rights abroad in photographic works which he makes at home, or when travelling—at any rate, which he registers in London.

A.: That can be easily explained. The only countries in which copyright can be sustained are those forming what is known as the "Copyright Union." All these subscribe to the "Berne Convention," under which a mutual exchange of copyright protection takes place.

Q.: Great Britain is a member of the Union, I suppose?

A.: Certainly; and so are the chief civilised countries, the chief exception being the United States of America.

Q.: Can you say on what terms this mutual copyright protection is arranged?

A.: The general arrangement is as follows:—A photographer here who complies with the usual formalities, i.e., registers the copyright, obtains in the other countries of the Union the degree of protection which is granted to each on compliance with the respective formalities of each country. In other words, you do what is necessary here and you get in Germany the same degree of protection which a German secures by complying with the formalities of his own country.

Q.: And *vice versa*, I suppose, a German by complying with the formalities in his country thereby obtains protection in England to the same degree that we do here.

A.: That is so; the Convention works equally all the way round.

Q.: Thus, I as a photographer do not require to know the

formalities required in the foreign countries, but only those in my own. But I do require to know something of the protection granted under Copyright Law by the various countries.

A.: Yes, that is the point. But the chief difference is in the duration of the copyright.

Q.: This varies in the different countries?

A.: Yes; in Germany it lasts for five years from the time of the first publication of the prints or from the making of the negatives; in Belgium and Denmark it lasts for five years after the death of the author; in Spain for eight years after the death of the author; and in Sweden for five years after publication.

Q.: I am told that the conditions in France are somewhat peculiar.

A.: They are. It seems that in France copyright protection is obtained only by photographs which are judged to have artistic merit. The judges decide whether a photograph is a work of art or not. I should also tell you that in France, by an Act of 1902, copyright can be obtained in designs of buildings, and an architect can prevent a photograph being taken of a private building for purposes of profit.

Q.: These differences may be taken, perhaps, as the chief one in connection with foreign copyright.

A.: At any rate, they state the general principle of foreign copyright; but the subject abounds in intricacies, and, so far as has not been cleared to any extent by cases in the courts in which photographs were concerned.

Q.: As regards the Colonies, are the conditions the same as in England?

A.: They are supposed to be; but the administration of the Copyright Act appears to be very lax, and where time permits it is better in many cases to send the prints to London for registration.

(Conclusion.)

MEXICAN OPENINGS FOR CINEMATOGRAPHS.—In an American Consular report which has just reached London, the question of openings for cinematographs in Mexico is touched upon. The Consul states that he is frequently addressed for information concerning cinematograph shows in Mexico city, and the prospects open to Americans in that line. The invariable answer is that Mexico City is no exception in regard to the general favour which such exhibitions enjoy in the Spanish-American capitals. There are three or four well-known shows of this kind which are patronised by the best of Mexican society. The charge is 25 centavos (approximately 6d.) for admittance, including a seat, without distinction of location. Some private families, on such occasions as birthdays and other family celebrations, will hire the cinematograph and have it brought to their homes for an afternoon or evening performance. Apart from the well-

patronised cinematograph establishments, there are other small ones dotted about the city. One or two cinematographs are maintained for advertising purposes upon the public streets, and the alternate interesting views with paid advertisements. One large cigarette-making establishment in the city has a well-conducted cinematograph theatre, to which admission is obtained only by the presentation of a given number of coupons which accompany their cigarettes. All these cinematographs are of foreign make. The views used are almost exclusively of French make, and they depict scenes in Continental European life, which are apparently the only ones which appeal to the public. In conclusion, the Consul says: "I do not think there is any field for an American cinematograph in the city, nor would American views touch a responsive chord in the average Mexico City audience."



## THE HINTON MEMORIAL FUND.

On the announcement of this fund, in our issue of April 10, a large number of donations, we are glad to say, have reached the Treasurer of the Fund, Mr. Reginald Craigie, 52, Long Acre, London, W.C. The "Amateur Photographer" has acknowledged their receipt in its last numbers, but we may now publish a complete list of the donors up to Tuesday last, April 28.

	£	s.	d.
Hazell, Watson, and Viney, Ltd.	210	0	0
Rev. A. Corbet	1	1	0
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S. M. Ward	1	1	0
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F. P. Smith	1	0	0
Mrs. Chance	1	1	0
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Harold Burton	2	2	0
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Hubert Waters	1	1	0
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F. Humpherson	2	2	0
A. R. F. Evershed	0	10	6
Miss Warburg	5	5	0
Bromley Camera Club	2	2	0
Maidstone and Institute C.C.	0	10	0
Richmond C.C.	1	1	0
Oscar Hardee	1	1	0
Alfred Leader	0	5	0
South Essex C.C.	1	2	0
Robert Rigby	1	1	0
Alec. C. Leslie	0	10	0
F. G. Issett	1	1	0
C. S. Watson	0	10	0
C. Welborne Piper	1	1	0
J. Sutton Sams	0	10	6
F. Blenkinsop	1	1	0
Mrs. Arthur Denman	2	2	0
B. Ward-Thompson	1	1	0
Harry R. Hill	0	10	6
Reginald Craigie	1	11	6
Edward R. Stephens	0	2	6
W. Benington	0	10	6
J. L. Heinke	0	10	0
Miss Turner	2	0	0
Charles Job	2	2	0
T. B. (Musselburgh)	0	2	6
W. R. Bland	1	1	0
Harold Holcroft	2	2	0
F. G. Brook-Fox	0	4	0
Walter S. Corder	1	1	0
W. A. I. Hensler	1	1	0
W. H. Marshall	1	1	0
C. R. Marshall	0	5	0
Sir Cecil Hertset	1	1	0
Ethel M. Ambler	0	2	6
E. C. Richardson	1	0	0
Robert Milne	0	10	6
T. A. Gerald Strickland	1	1	0
"Limerick"	0	7	6
Miss Warren	3	3	0
Eustace Calland	1	1	0
F. W. Pidditch	1	1	0
G. A. Fowkes	0	10	6
F. R. Ohlson	1	0	0
Ward Muir	5	5	0
"A. R."	1	1	0
Everton Camera Club	1	1	0
F. P. Wells	2	2	0

R. H. Holding	0	2	0
A. Keighley	10	0	0
A. G. Turner	1	0	0
Rev. F. Nesbitt	1	1	0
J. C. Warburg	5	5	0
A. H. Hall	0	10	6
S. L. Coulthurst	1	1	0
W. Ramsay	0	5	0
E. Munt	0	5	0
Armitage Wallis	1	1	0
Alfred Bracewell	0	10	6
Miss Mary C. Eames	1	1	0
"A Grateful Subscriber"	2	2	0
Miss Janet Allan	0	10	6
Some Members of the Progressive Portfolio,			
per Miss Allan	1	0	0
I. W. Joynt	0	5	0
Samuel Barker	1	0	0
T. A. G.	0	10	0
A. Levy	0	1	0
Dr. J. J. Acworth	21	0	0
"The British Journal of Photography"	10	10	0
G. E. Brown	1	1	0
Total	£368	18	6

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents have been received between April 13 to 18:—

PRINTING.—No. 8,123. Photographic printing machine. Cyril Mantegani, 35, Stockton Street, Manchester.

TELECTROPHOTOGRAPHY.—No. 8,135. Telectrophotographic apparatus. Pascal Berjonneau, 6, Great Winchester Street, London.

CAMERAS.—No. 8,201. Device for fixing objects on photographic cameras. Karl Lenck, 40, Chancery Lane, London.

CAMERA STANDS.—No. 8,314. Improvements in and relating to camera stands. Wilfred Asa Fessenden, 40, Chancery Lane, London.

SCREENS.—No. 8,368. Solid inactinic screen. Xavier Jeannet and Emile Mauvillan, 20, High Holborn, London.

CAMERAS.—No. 8,443. Improvements in photographic camera apparatus. Alfred George Brookes, 55, Chancery Lane, London, for Ammi Vining Young, Germany.

CINEMATOPHOTOGRAPHS.—No. 8,496. Apparatus for synchronising talking machines with cinematographs. Alfred Duskes, 116, High Holborn, London.

FIREPROOF FILM.—No. 8,542. Uninflamable film for cinematographs and a process of manufacture of same. Gaston Chandon de Briailles, 1, Queen Victoria Street, London.

PRINTING FRAME.—No. 8,621. Improved photographic printing frame. David Ralston and John Steel Ralston, 65, Chancery Lane, London.

## COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

PRINT TRIMMERS.—No. 14,760, 1907. The invention relates to the type of trimmer comprising a hinged table having a cutting edge mounted along (and a short distance above) one edge, the article to be cut being placed on this table and beneath the cutting strip. A knife with inclined edge is situated at right angles to the plane of the table, the edge of this knife bearing against the cutting edge carried by the table with a shearing action as the table is depressed or turned about its hinge. The table is returned to its initial position ready for another cut to be made by the action of a spring. The knife is hinged so that it can fold down underneath the table when not in use.

The disadvantage of this construction is that the edge of the print or other article which it is desired to cut has to be hidden beneath the cutting strip carried on the table, and thus difficulty is experienced in spite of the graduated scale with which such cutters are provided in regulating the amount that is to be

cut off, and the position of this cut with relation to any particular mark or object appearing on the face of the paper.

According to this invention the cutting strip, in place of being mounted actually on the edge of the table, is turned round so that its cutting edge faces the edge of the table, the cutting strip lying beyond this edge. Between the edge of this cutting strip and the edge of the table is a space in which works the knife blade, which, of course, instead of being pressed against the edge of the table, is pressed away from it against the edge of the

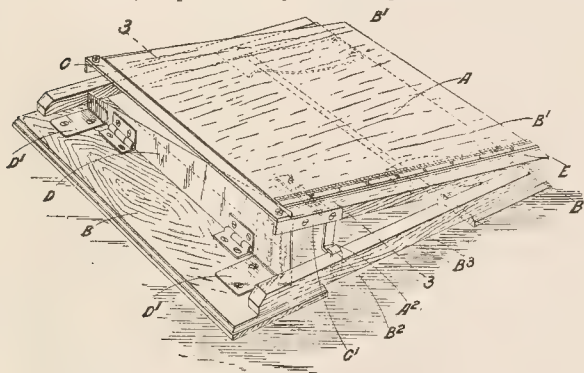


Fig. 1.

cutting strip. The paper can with this arrangement be laid on the table with the portion which is to be cut off beneath the cutting strip, and the paper can be nicely adjusted so that the edge of the cutting strip is placed exactly as required, the objects or marks on the paper being in full view the whole time.

The device may be made to fold into a small space in a similar way to the known form of cutter on which it is an improvement. The knife blade, however, in the improved construction folds upwards, and the upward movement of the table, which takes place under the influence of the spring beneath it, is checked by a pivoted slotted link engaging with a pin and mounted on one or both sides of the table, the arrangement of the links being such that the table is free to turn about its hinges when cutting is in process, but the links will recede within the framing when the device is folded up and secured by some convenient form of catch.

A cord or chain may be employed instead of the restraining links or other like device as found convenient.

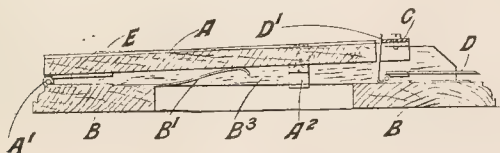


Fig. 2.

The angle of the cutting blade may be arranged so that the cut takes place either from right to left, or *vice versa*, as desired.

The cutting strip may be mounted in various ways, but is preferably carried on metal L-shaped brackets attached to the front edge of the table, these brackets being, of course, clear of the ends of the knife. Where it is desired to have the full length of the cutting strip available, this strip may be carried on arms or brackets extending from or mounted on the sides of the table, the framing within which the table shuts down being shaped accordingly so as to clear these arms.

In the figures the table, A, is connected to a suitable base or frame, B, by means of hinges, A<sup>1</sup>, and is pressed upwards by means of springs, B<sup>1</sup>, mounted on the base, B, the upward movement of the table being limited by stops, A<sup>2</sup> and B<sup>2</sup>, carried by the table and base respectively. Mounted a short distance beyond but parallel to and carried by the upper edge of the table A is a cutting strip, C, the cutting edge of which faces the edge of the table, a longitudinal slot being thus formed between the edge of the table and that of the cutting strip, C. The cutting strip, C, may be connected to the table in any convenient manner, but is

preferably carried by L-shaped brackets, such as C<sup>1</sup>, secured to the side edges of the table by screws or the like, the cutting strip being in turn attached to the brackets, C<sup>1</sup>, by screws, so that it can be readily removed when it is to be sharpened.

Mounted on the base B is a knife D, the edge of which is inclined at an angle so that—in the construction illustrated—the cut takes place from left to right. The upper extremity of the inclined knife, D, projects a short distance through the left-hand end of the longitudinal slot formed by the edge of the cutting strip, C, and that of the table, A. The knife, D, is conveniently hinged to the base, and is provided with springs, such as D<sup>1</sup>, which maintain it in contact with the cutting edge of the strip. The edge of the table from which cutting commences is conveniently provided with a rule or gauge, such as E, which also serves as a guide for the paper which is being cut.

In using the apparatus the print is placed upon the table, so that the edge which it is desired to trim lies beneath the cutting strip, C, the cutting edge of the latter coinciding with the line along which it is desired to cut. The table is now depressed in opposition to the action of the springs, B<sup>1</sup>, and the print is trimmed, the cut taking place from left to right as the table is depressed, and the edge of the knife rises in the slot between the edge of the table and that of the cutting strip, C.

When the apparatus is not in use it may be folded flat, and this end the stop, A<sup>2</sup>, can be moved out of contact with the stop, B<sup>2</sup>, on the base. The table, A, is thus free to rise under the action of the springs, B<sup>1</sup>, and in consequence rises clear of the upper extremity of the knife, D, enabling the latter to be folded outwards into the position shown in Fig. 2. The table is then depressed, the upright portions of the springs, D<sup>1</sup>, projecting

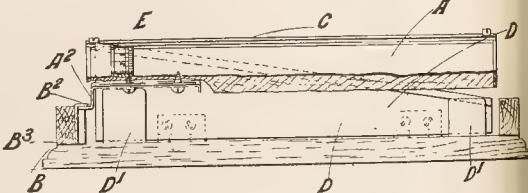


Fig. 3.

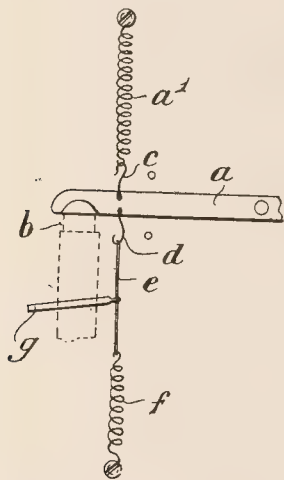
through the slot formed by the edge of the table and the cutting strip, C, and the whole apparatus is retained in its inoperative position by the stop, A<sup>2</sup>, being moved into its initial position, so that its outer extremity engages the underside of one of the transverse pieces, B<sup>3</sup>, of the base. Joseph Thacher Clarke, Gay Corner, Harrow, Middlesex.

**SELF-PORTRAIT SHUTTER.**—No. 8,175. 1907. The invention aims to provide a means whereby the shutter of a photographic camera may be released or operated to give an exposure in a manner such that the operator may include himself in the picture without assistance and without the aid of a pneumatic tube or other direct connection with the camera. The arrangement has been more especially devised for employment with portable cameras, but it may be applied to other cameras.

A spring is provided for connection to the shutter-releasing operating lever, this spring being adapted to actuate the lever device to release or operate the shutter. In some types of camera the existing shutter-operating spring will serve the purpose. Means are provided whereby the releasing or operating lever can be held against the action of the spring for a sufficient or desired time and then freed, whereupon the spring at once actuates the lever device and the shutter is released or operated. These means consist of a thread or combustible connection adapted to be attached to the releasing or operating lever or device and to a suitable point of the camera. The thread or the like may be attached to this point by means of a spring, to compensate for any variations in the length of the thread and ensure the same remains taut and holding the releasing or operating device against the action of its spring. The thread may be provided with loops at its ends, so that it can be readily attached to the releasing lever or operating device, compensating spring, or other part. The thread or the like is attached a strip of slow burning material such as touch-paper.



In the drawing the invention is shown as applied to a well-known type of camera, wherein the shutter is usually released by a lever actuated by a piston *b*, which is operated by a pneumatic release. To a suitable part of the camera above the releasing lever *a* is connected a coiled spring *a'*, which can be hooked when desired to a hook *c* on the lever *a*. The latter has another hook *d* for the reception of a thread *e*, which is also passed on to the hooked upper end of another coiled spring *f* attached to the camera below the releasing lever *a*, and serving to keep the thread taut. To the thread is attached a length of touch-paper or fuse *g*.



When the shutter being set, the thread is attached or hooked in place as to hold the releasing lever *a*, and the operating spring *a'* when hooked to the lever *a*. The touch-paper being then ignited burns slowly until it reaches the thread, which at once breaks and frees the lever *a*, so that the shutter is operated and gives the exposure. By employing strips of touch-paper of suitable lengths the time elapsing before the release of the shutter can be varied as desired. The operator can carry with him a supply of threads and attached strips of slow burning material, and can readily replace them in place as occasion requires. Alfred Greeff, 45, Kerstrasse, Weimar, Germany, and Robert William Creeff, 20, Cheap, London.

The following complete specification is open to public inspection under the Patents Act, 1901:—  
No. 7,897. Animated stereoscopy by the employment of a single film with small images. Dupuis.

### New Trade Names.

TRADE MARK.—No. 301,230. Cinematograph films bearing taken-up photographs. Alfred West, 7, Villiers Road, Southsea, Hants, manufacturer. March 11, 1908.

## Analecta.

Extracts from our English weekly and monthly contemporaries.

### Crescent Moon Photographs.

In a suitable room was selected (writes Mr. William A. Everard in the *Photographic Monthly*), one with a small fanlight that could be opened, the glass being covered with brown paper. The moon was then set out on fine canvas by the simple expedient of laying it flat on the floor, and marking the crescent with a blue pencil fastened by a string to a small nail, driven slightly into the floor, and used as the pivot; first marking with full length of string, then with about five inches shorter. The canvas crescent was then cut out with a pair of scissors, and afterwards whitewashed. Then

all the black cloth one could get was borrowed to make the background and cover the seats. One strip was tacked along the whole front to hide the dress of any one behind. Stars were cut out of white paper and fastened by pins put straight through the centre. The crescent was fastened to strips of wood with one large sheet, which was fastened to two strong boxes forming the seats.

### Measuring Photographic Chemicals.

Drops have occasionally to be measured in photographic practice (writes Dr. Chas. W. Budden in *"Focus"*). The bottle should be lightly grasped in the right hand by all the fingers, except the index one, and held in a vertical position with the bottom downwards, till the stopper is partially lifted out with the fingers of the left hand, and it is then held there by the right index finger, which presses it downward as the bottle is gently tilted to allow the liquid to run out. Before permitting the drops to fall into any quantity of developer or other solution, a few should be allowed to drop on the floor or on to a dish till one is satisfied that he has perfect control over the regularity with which the drops issue, otherwise they might come out with a rush and too much be added.

## New Books.

**THE CARBON PROCESS.**—Although it may be argued that there is practically nothing new to say about carbon work, yet a concise résumé of the general principles and working instructions of the process by a competent authority should be of value both to the novice and to the experienced worker. With this object, and also with a desire to further increase the use of the process, the Autotype Company have issued a booklet, written by Mr. A. C. Braham, F.R.P.S., head of the firm's technical staff at West Ealing, which deals with the process from start to finish in a brief and lucid manner, leading the beginner, step by step, along the lines of successful working. Starting with the general principles of the process and particulars of the necessary materials and apparatus, the worker is conducted by easy stages through the operations of sensitising, printing, developing, mounting, etc., in such a manner that failure should be almost impossible. The chapter on sensitising contains a lengthy reference to the Autotype spirit sensitiser, an introduction which has made it possible to successfully work the process in hot climates, notably in India, where hitherto its use had only been practicable for a short time in cool weather or at high altitudes. Although written primarily for the novice in carbon work the booklet also contains hints and wrinkles from the author's 25 years' experience which should be of considerable value to the regular user. The price of the booklet is 6d., and may be obtained from the Autotype Co., 74, New Oxford Street, London, W.

**THE HORSLEY HINTON PORTFOLIO.**—The large number of photographers who have known and appreciated Mr. Hinton's pictorial work will doubtless be glad of the opportunity of possessing reproductions of some of his best-known pictures. To this end the proprietors of *"The Amateur Photographer"* have issued a portfolio containing photogravures of the five—namely *"Melton Meadows," "Fleeting and Far," "Recessional," "Weeds and Rushes,"* and *"Niagara"*—which have in the past received most general public appreciation. The reproductions are each on an imperial quarto sheet of antique paper, bearing a facsimile of Mr. Hinton's signature, and are inserted loose in a portfolio, accompanied by a brief notice of their producer's career and a criticism of the pictures themselves. Applications for the portfolio, which will be sent post free to any address in the United Kingdom for the sum of 6s. net, should be addressed to the office of *"The Amateur Photographer,"* 52, Long Acre, London, W.C.

**THE SUBURBAN AND PROVINCIAL DEVELOPMENT ASSOCIATION**, of 29, John Street, Bedford Row, W.C., have just issued a further instalment of their illustrated booklets, the purpose of which is to bring the various districts dealt with before the notice of those who are contemplating changing their place of abode. These latest additions deal with the districts of Surbiton, Richmond, Beckenham, and Kingston-on-Thames, and may be obtained, post free, on application to the respective Town Clerks.

## New Materials, &c.

"Luxepia" Printing Paper. Made by the Luxia Co., South Hill Works, Hampstead, London, N.W.

We have in this material a development printing paper giving directly a sepia print of very fine tone indeed. The treatment of the paper is practically that of the ordinary gaslight paper, except that development lasts somewhat longer than is usual in a paper of this class. It should be completed in about 75 seconds for the best results. As regards rapidity, the makers state that about 2 seconds exposure to diffused daylight is about correct for an average negative, an estimate which we think may lead to under-exposure of the paper, for, in our own trials, in the afternoon light of a day or two ago, we found it necessary to give at least 20 seconds exposure to a negative which was as thin as would give a good P.O.P. print; in fact, a negative which was distinctly thinner than one to which the description "average" may be applied.

The developing solution of the "Luxia" paper is made up as follows:—

Water .....	18 fluid ounces.
Potash metabisulphite .....	25 grains.
Soda phosphate .....	450 grains.
Potash citrate .....	180 grains.
Hydroquinone .....	50 grains.

from which it will be seen that it differs from the developer ordinarily used for bromide or gaslight papers in containing no alkali, a fact which will perhaps give a hint to those who have read our columns carefully during the past few months as to the means employed for securing the sepia tone. Fixation is done in the ordinary way in a hypo bath containing 3 ozs. per pint, with also a few grains of potassium metabisulphite. For both contact and enlarging work the "Luxia" paper is certainly a notable addition to the facilities at the disposal of the photographer. The tone is quite distinct from the effect usually obtained by any of the sulphide methods, possessing greater luminosity in the shadows and being of a more true and agreeable sepia colour than that which is frequently the result of sepia toning. The paper is manufactured in glossy and matt varieties, both of which are marketed in shilling packets containing twenty-four quarter-plate pieces or a greater or less number of smaller or larger sizes. It is also issued in official postcard size at a price of sixteen cards per shilling packet, or 8s. per gross.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

FRIDAY, MAY 1.

United Stereoscopic Society. "A Stereoscopic Mystery." A. J. Snow.  
West London Photographic Society. Arranging Summer Programme.

SATURDAY, MAY 2.

North Middlesex Photographic Society. Record Outing to Hendon.  
Liverpool Amateur Photographic Association. Excursion to Gosford and Marford.  
Chelsea and District Photographic Society. Excursion to Burnham Beeches.

MONDAY, MAY 4.

Harrow District Photographic and Scientific Society. "Fleet Street." E. Young, B.Sc.  
Bowes Park and District Photographic Society. "Frame Making." Hy. C. Bird.  
Kidderminster and District Photographic Society. Development. Kodak, Ltd.

TUESDAY, MAY 5.

Royal Photographic Society. "The Half-Tone Process." Leslie Clift.  
Hackney Photographic Society. "Walks with a Camera in London." A. H. Blake, M.A.  
Handsworth Photographic Society. Council Meeting.

WEDNESDAY, MAY 6.

Edinburgh Photographic Society. "Thoughts Suggested by the Rembrandt Tercentenary." W. D. Mackay, R.S.A.  
Croydon Camera Club. Exhibition of Prints taken on the Good Friday Excursion.  
Central Technical College Photographic Society. "Sports and Pastimes with the Geertz-Anschutz Folding Camera."  
North Middlesex Photographic Society. Lantern Slide and General Print Competitions.

THURSDAY, MAY 7.

Tunbridge Wells Amateur Photographic Association. Photography Prize Slides.  
North London Photographic Society. "Oil Painting." Dr. A. R. F. Evershed.  
L.C.C. School of Photo-Engraving and Lithography. "Some Particular Applications of Process Engraving to Advertising." Frank Colebrook.  
Midlothian Photographic Association. "In Brittany with a Camera." Ed. G. Gallely.  
Southend-on-Sea Photographic Society. Amateur Photographer and Focus Prize Slides.  
Handsworth Photographic Society. "Enlarged Negatives by Reversal." Arthur J. Powell.

### ROYAL PHOTOGRAPHIC SOCIETY.

MEETING held Tuesday, April 28. A demonstration of the Carbo-graph process was given by Mr. H. Jackson, of the Rotary Photo-graphic Company. The demonstrator explained the principle of the process, and then proceeded to give an actual demonstration of the production of a carbon print by the exposure of the carbograph paper. The demonstration was witnessed with considerable interest. Previous to the demonstration Mr. Oliver Dawson showed and explained an apparatus for demonstrating the path of rays of light, the construction of which led to some little discussion.

SOUTH SUBURBAN PHOTOGRAPHIC SOCIETY.—The first annual general meeting of this flourishing Society was held on Wednesday evening April 22, at Plough Hall, Lewisham, with Mr. P. C. Cornford in the chair. A very satisfactory report was presented by the hon. secretary and treasurer. During the year the society had increased from 112 to 178 members. There has been one death, and recently nine resignations, leaving 168 on the list. Thirteen subscriptions were in arrear, but after paying all current expenses the treasurer has £2 12s. 7d. in hand. As the preliminary expenses (£5 14s. 6d.) incurred by the organising committee before the society was launched will not recur, and as certain other items will be less in future than in the past, the financial outlook is, on the whole, favourable. The society, before the close of its first year, was numerically the largest in England, with the exception of Hull, Manchester, Leeds, and Liverpool. It had even outgrown its older neighbour, the South London P.S., which could only show a list of 166 members. Including excursions, fifty meetings had been held during the year. With the 5s. subscription, therefore, the cost per member per meeting worked out at less than 14d., and at this rate no one could complain that he did not receive full value for his money. It now remained for the members to make the society the biggest and most efficient, as well as the most economical society in the kingdom. Mr. F. J. Mortimer was re-elected president, Mr. F. Nixon hon. sec. and treasurer, Mr. F. N. Palmer portfolio secretary. Mr. A. E. Bache and Mr. F. J. Wills were appointed assistant secretaries, and Mr. P. H. Dannatt as hon. lanternist. Vice-presidents and a strong committee were also elected.

## Commercial & Legal Intelligence.

ALLEGED PHOTOGRAPHIC FRAUDS.—Before Sheriff Begg, at Aberdeen, last week, Charles Gibb (25), labourer, 17, Claremont Street, was examined in connection with eleven charges of fraud and theft of it. It is alleged that accused committed the frauds by a scheme of supplying enlarged photographs and picture frames to house-holders in Aberdeen. Gibb, who was represented by Mr. D. M. Donald, solicitor, emitted a declaration, and was committed for trial.

BANKRUPTCY.—Richard Berwick Hope, photographer, of 154, Portdown Road, Paddington, lately residing at 11, Iddesleigh Mansion, Victoria Street, S.W., and lately carrying on business at 171, New Bond Street, has been adjudicated bankrupt.

ENLARGEMENT FRAUDS.—At the Leicester County Police Court, last week, George Percival Marston, a canvasser, living at "The Rookery," Thurmaston, was charged with obtaining by false pretences, on March 30, 3s. 6d., the money of Annie Norman. Mr. J. T. Hincks appeared for the defence.

Mrs. Norman, the wife of John Arthur Norman, said on February 29 a young man (the prisoner) and a young lady knocked at her door. The young lady asked witness for a small portrait to enlarge. Witness had not one, but said her friend, Mrs. Lucas, of Cross Street, had one. They brought several "bits of frames" for her to look at, and witness picked one at 7s. 6d. The lady said the young gentleman would call for the money. The paper (produced) was given to her. It read:

"Free.—The Great Central Portrait Company's special offer. enlargements given free as an advertisement (life size, 20 x 16), be framed by us from 7s. 6d. Photos carefully returned. District Office: Wharf Street, Leicester. Agent ——. Date ——."

She expected she was dealing with a firm with a district office Wharf Street. She went on the Saturday following to Wharf Street but failed to find the office. On her return her daughter showed her a card, on which was entered the payment of 1s. On March 9,



23 she gave prisoner separate shillings in payment, but on the date she asked him to bring the enlargement. He promised to go on March 30, but failed, saying it was not quite dry, and that should come up about three o'clock on the following Tuesday. He left her the office was opposite the "Empire," and "seemed so right" that she parted with 3s. 6d. On the following Monday saw prisoner in Oadby, and informed him that she had again failed to find the office. He offered to take her to find the place, but failed to keep his appointment.

C. Barratt, stationed at Oadby, said on April 15, about 8 p.m., went to defendant's house at Thurmaston, in company with Superintendent Bowley, and told him he had two warrants for his arrest. Witness cautioned him, and prisoner said he had no photographs in the house, as they had all gone to London. On approaching the board prisoner told him it only contained his child's playthings, and witness found two boxes of photographs, one of which was Mrs. Man's. There were three or four hundred tickets, and a large quantity of collecting cards. Prisoner was brought to Leicester and fined.

Further charge of obtaining by false pretences from Mary Ann, 1s. 6d., between March 9 and March 23, was then proceeded to.

Prosecutrix, the wife of John Dixie Wood, a shoe-hand, of Oadby, on March 6 prisoner called upon her and asked her for a photograph to enlarge free, "simply for advertisement." She gave him a photograph on the understanding that he would bring it back again day or two. He gave her a receipt for the photograph, and said the office was facing the "Empire," in Wharf Street. He called next day for the 1s., after which, he said, he would give her the enlargement. After she had paid the shilling he did not bring the portrait, as he said he would like her to pay a little more. On March 16 he brought her original photograph back, and stated that enlargement looked all right. The following week she paid him but he said nothing about the portrait, and a week later she failed to pay him any more money until he brought the portrait. He saw nothing further of prisoner, and had not received the enlargement.

Prisoner pleaded not guilty to both charges.

Mr. Hincks stated that prisoner had entered his payments in a book. He (Mr. Hincks) produced receipts for enlargements from several people who had been contented. There was no doubt that there were no such business premises in Wharf Street. Prisoner had been entirely to his lady companion in the business, and they were in communication with a London firm who did the enlargements. Prisoner, however, took the whole responsibility on his head.

Superintendent Bowley stated that since the affair had received publicity he had been simply inundated by people applying for their photographs, who on giving them up had heard nothing further.

Mr. Hincks: 102, I think. He has sent his photographs to the same company.

Superintendent Bowley stated that the photographs found numbered 116, and of these twenty had been claimed. Sums varying from 1d. to 8s. had been paid, and in several cases nothing further had been heard. The cost of the enlargements was about 7½d., and it was stated that prisoner had told him while coming from Thurmaston cost was 3s. 1½d.

Mr. Hincks: With travelling expenses, etc., it just comes to a shilling wage.

The Chairman said both cases were proved, and prisoner would be convicted. He appeared to have gone to poor people's houses, and asked them to give him a photograph to enlarge; they paid him for the enlargement, and he had no intention of fulfilling the bargain. Bench looked upon it as a very serious offence, and the least that could be done, in each case, was to send him to prison for two months and to do hard labour.

#### NEW COMPANIES.

WATSON AND SONS, LTD.—Registered April 9. Capital £30,000, 100 preference and 24,750 ordinary shares of £1 each, and 5,000 preference shares of 1s. each. Objects: To take over the business of manufacturers of optical, photographic, and other scientific instruments, carried on by C. H. Watson and F. W. W. Baker, at 313, High Holborn, as W. Watson and Son. No initial public issue. Registered office, 313, High Holborn, W.C.

## Correspondence.

\* \* We do not undertake responsibility for the opinions expressed by our correspondents.

\* \* Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

OLD MASTERS IN GERMANY.

To the Editors.

Gentlemen,—In a footnote attached to the notice sent you by a correspondent on the Exhibition of Old Masters in Germany, you have already repudiated the statement that anybody photographing pictures by old masters can restrain the issue of reproductions of the paintings in England.

As a good deal of the statement in the article is altogether wrong, we ask you to allow us to mention that, first of all, the Royal Academy of Arts, on whose behalf the publication was primarily to be issued, made a clear application to all the owners of the pictures that were lent to the exhibition, asking them for permission to reproduce the pictures, firstly, in a small catalogue which was on sale during the exhibition, and, secondly, in the edition de luxe to be published by our Berlin house. To this request all the owners have most courteously given their assent, with the exception of three, whose pictures, as a matter of course, will not be included in the work.

This work is strictly limited to five hundred copies, of which a considerable number is to be presented to distinguished persons interested in the exhibition, like his Majesty the King, the German Emperor, and the various owners who, by lending their pictures, have made the great success of the exhibition possible. It need hardly be added that, of course, none of the owners of the pictures included in this work lose thereby a tittle of their rights.—We are, dear Sirs, yours faithfully,

THE BERLIN PHOTOGRAPHIC COMPANY.

133, New Bond Street, London, W.

M. LEVI, Manager.

April 24, 1908.

#### THE FERRICYANIDE-BROMIDE-HYPO REDUCER.

To the Editors.

Gentlemen,—The very interesting results obtained by Mr. Welborne Piper, and published in to-day's issue of the "Journal," on the effect of introducing a bromide salt into the well-known Farmer's reducer, induce me to lay before you the results of some experiments of my own with this reducer, although pressure of other work has hitherto prevented me from exhausting the questions they raise.

I found that, as usual, this reducer tends to "cut" in the shadows, but the extent to which this occurs undoubtedly varies appreciably. Using strips cut from a stepped (H. and D.) negative, I found that occasionally the action starts vigorously enough, and eats away the lighter densities and partly reduces the heavier ones, and then appears to cease, and cannot be made to proceed further, either by addition of more ferricyanide or even a fresh mixture of ferricyanide and hypo altogether.

I tried a good many experiments to determine the conditions under which this peculiar effect occurs, such as working with solutions of different strengths and proportions, using freshly prepared and also relatively old solutions, mixed from a quarter to three-quarters of an hour before use, working in artificial light, and also in strong daylight, but without result. The behaviour is somewhat erratic, and at present I can only suggest that the presence of traces of silver salts and hypo in the negatives employed, which were old strips washed for times varying from a quarter of an hour to one or two hours in ordinary tap-water, sometimes in changes and sometimes in running water, may be the cause.

The first interesting point is that, when using ordinary Farmer's reducer, this phenomenon occurs fairly often in a slight degree, the high densities being reduced less in proportion than are the low densities, and I can state positively that now and then a residue, still of great opacity, remains, which is no longer attacked by Farmer's reducer, either old or freshly prepared.

The second point is that this effect is never met with, in my experience, if the ferricyanide be applied first, followed, after a short washing, by the hypo bath. The result exactly resembles that described by Mr. Welborne Piper, the details are not cut away, and the high-lights are fully reduced. The difference in gradation between two negatives, one reduced with the combined and the other with the separate solutions, is well marked.

I am unable to agree with Mr. Welborne Piper's statement that ferricyanide alone attacks silver slowly, as I have always found it possible to effect a very strong reduction in a few minutes.

These observations and the known oxidising action of ferricyanides on hypo, leading to the precipitation of sulphur in a few hours, incline me to the opinion that a certain amount of deposition of silver sulphide or a partial conversion of silver to the sulphide goes on in the higher densities when Farmer's reducer is acting on a negative.

If Mr. Piper or any other gentleman can spare the time to elucidate this matter I feel sure photographers generally would be interested, and I personally should feel very grateful to him, as I fear it will not be possible for me to touch the matter again for some time.—

Yours faithfully,

F. F. RENWICK.

Norland House, Avenue Road, Brentwood.

April 24, 1908.

To the Editors.

Gentlemen,—Mr. Piper's note in your last issue with reference to the modification of Farmer's reducer by the addition of potassium bromide is most interesting. I can fully bear out his statement of its action, speed of working, and more general reduction of the silver image. The method must have occurred to many of those bromide workers using the sodium sulphide toning process. Other bodies than potassium bromide can accelerate the bleaching action of the simple solution of ferricyanide, which is fearfully slow used by itself. Two or three drops of a strong solution of ammonia at once starts an energetic action. Here we have another hint for a possible modification of Farmer's reducer. I have fully proved for some time past that the addition of ammonia to the reducer accelerates its action, prevents the tendency to yellow stain, and modifies the character of the reduction, which, instead of increasing contrast, seems to slightly reduce it, but not to a pronounced extent.

A modification of the reducer by adding both ammonia and potassium bromide, taking advantage of both accelerating agents, has rendered me excellent service for some two years past. Which addition is the more active I never took the trouble to determine, but used both from some hazy notion that if the one failed the other would carry the action on.—Yours faithfully,

A. EDWARDS.

The Laboratory, Corporation Gas Dept., Leeds.

April 27, 1908.

#### ENLARGING EXPOSURES AND LANTERN CONSTRUCTION.

To the Editors.

Gentlemen,—Considering the novelty of the unorthodox views expressed in my lecture on "Exposures in Enlarging," the necessarily condensed form of the lecture itself, and the still more abbreviated character of the version which the "B.J." was kind enough to print, I have no reason to complain of the general trend of criticism. It is true that one scientific expert, who has probably made more enlargements than the average operator in a commercial business, bluntly told me not to make myself ridiculous by putting forward such views. But I discounted his discouragement, as he supplemented it with a dogmatic assertion that the function of the condenser in an enlarging lantern is to transform the divergent rays of the artificial light into parallel rays. After that I felt there was nothing more to be said. The "Ex Cathedra" criticism in the "B.J." of April 24 is more serious, though distinctly friendly. I note that the writer agrees that my statement of the law of exposure in enlarging is correct, provided the conditions set out in my lecture obtain; that is provided (1) the source of light is focussed by the condenser on the projector; and (2) the image of the source of light thus produced is always larger than the working aperture of the projector. A third condition, inferred in the one just mentioned, but actually expressed in my lecture, was (3) that the lantern should be properly constructed.

Now, so far as I can gather, the enlarging lantern of commerce is not constructed (as a microscope or a telescope would be constructed) with any regard to scientific principles. If it had been the law of exposure, which I have stated, would long ago have been worked out. That it has not been (if it has not been) worked out before, is to me proof positive that no scientific man has ever taken the trouble to calculate the relations which ought to obtain

between condenser and projector to secure the greatest efficiency in the instrument. It has apparently been left to mechanics to work by rule of thumb, and who say: "Here's a condenser," "Here's a lantern," "Here's a lens," "Let us fix them up together and make an enlarger."

In the concrete instance cited by the writer of the "Ex Cathedra" notes just mentioned, that critic says my theory breaks down. I do not like to dogmatise, as I have not seen or tested his apparatus, but I would humbly suggest that it is the lantern, not my theory, which is at fault. The projector, in his test, has a focal length of eight inches. Its working aperture—a most important element of the test—is not stated. I guess from internal evidence that it would be probably  $f/4$ , and that its diameter would be about two inches. With a  $5\frac{1}{2}$ -inch condenser the diameter of the effective portion of the conjugate image of the incandescent mantle, 13 inches from the condenser (as in the test), would be about  $\frac{3}{4}$  inch. Hence condition above mentioned is violated—and that is the fault of the lantern.

Again, without dogmatising, I suggest that if the writer of the note will stop down his projector (with the sharp image of the light falling on it), until he gets even illumination of the disc, his projector will pass at least as much light as it does when he throws the light image, with full aperture, in front of the projector, inches from the condenser. I suggest that he should test this making two exposures with the two adjustments. If (as I anticipate) he gets, with the smaller aperture, as efficient an exposure as he can get with the larger aperture, I would further suggest that the maker of that lantern was an unscientific mechanic, who threw away uselessly, the high power given by the large aperture of his projector. Again, without dogmatising, I suggest that he should apply the same test to a lantern working with an arc light, or other powerful illuminant, in the one case focussing the conjugate image of the light on the projector and stopping down till he gets an even illuminated disc, and in the other case adjusting, in the ordinary way, by throwing the light image in front of the projector so as to get the necessary body of illumination to fill the full aperture. (as I anticipate) the smaller aperture proves as efficient as the larger one, I would again suggest that the unscientific person who made that lantern wasted his material. He used a lens working at a large aperture, where a smaller aperture (presumably cheaper) would be quite as efficient. Assuming these two sets of experiments to be as I have anticipated, I would still further suggest that not only does my theory hold when the lens is so stopped down, but the meter will work accurately with these sources of light as long as the worker continues to stop down sufficiently to satisfy the essential conditions.

It is quite easy, I would further suggest, for any person with elementary knowledge of mathematics to calculate the conditions of construction of an enlarging lantern, so as to give the most efficient result, and at the same time to make it practically automatic in working, with the aid of the meter I have designed.

4, Ingleside Grove, Blackheath, S.E.

JOHN NIXON.

#### COLOUR PSEUDO-STEREOSCOPIC EFFECTS.

To the Editors.

Gentlemen,—I have been much interested in reading your article this week's issue on "Pseudo-Stereoscopic Effects," due to colour, and venture to give another example which has often struck me as being very definite.

There is in a church not far from here a stained glass window in which there is a central figure portrayed with a very deep cloak. After gazing at this window for a few seconds the observer produces the effect of standing right out in front of the other side of the picture, in fact to such an extent that the mental suggestion is that of a separate picture of the cloak in a different and nearer plane to the observer. This is not due to the shading or drapery of the folds of the cloak, but is undoubtedly caused by colour. There are other portions of the window equally well drawn and shaded which do not give rise to the phenomenon.

This effect is produced without the use of a lens, and is, I think, one of the most noteworthy examples which I have ever seen across of stereoscopic effect due to colour.—I am, Sirs, yours faithfully,

W. D. BORDEN.

Beacon Lodge, Bean, Dartford, Kent.

April 24, 1908.



## PROFESSIONAL PHOTOGRAPHERS' ASSOCIATION.

To the Editors.

Gentlemen,—I cannot let the continued complaints made in your evidence columns concerning the P.P.A. pass without a very protest. Apparently most of the complaints are made by people who are not members. I joined the Association when it was first formed, and ever since it has been a continued source of help to me in my business. No matter what the subject is, be it a question of infringement of copyright, or plans for a new studio, in fact connected with professional photography, my letter of request or advice elicits from the courteous hon. secretary a kindly reply by post, with advice of the very best, and to the point.

I would like to give instances: A press agency owed me money, and applications for payment met with no response. I wrote to the P.P.A., thinking the information would be of service to the committee, and not expecting them to act as debt collectors. The hon. secretary wrote to the press agency in such a way that I received a cheque from them by return of post.

I am recently rebuilding a studio. The property I had to work with was old-fashioned, and very difficult to replan. I wrote to the Association asking for ideas and suggestions. In a few days I had a plan drawn to scale, sent me by no less expert authorities on architecture than Mr. Alfred Ellis and Mr. Mackie, with the kindliest concluding remark to their letter: "Don't hesitate to let us know again if there is anything further we can do for you in this or any other matter." To add to these acts of helpfulness of the Association, I have had free solicitor's advice, 20 per cent. off fire insurance premiums, and other advantages which I will not take up space to mention.

There is only my own experience, and I know many professional photographers who have benefited quite as much as I have by being a member of the Association. I can only say, Gentlemen, that the P.P.A. of uselessness is a gross misstatement of fact. If all photographers would join the Association it, by their doing so, would be of even greater use in protecting the interests of and improving the profession.—Yours truly,  
TOM REVELEY.

London, Wandgate and Abingdon-on-Thames.

April 27, 1908.

## THE PORTRAIT POSTCARD.

To the Editors.

Gentlemen,—Having failed in business as a fishmonger, I aspired to the "profession" of photographers, as I had a little experience as a friend who possessed a camera. I thought it the easiest to commence without capital. With the aid of a showy advertisement I obtained a camera and other goods on credit at trade prices, the firm never making any inquiries at the time, though I doubt they made earnest inquiries later when I left that firm. Of course, this necessitated changing my name, and I became the photographic Fine Art Company. I did a good trade in the free enlargement business, having a number of customers, but this got rather too hot.

At the same time now I have been very successful with portrait photography. I use large quantities, and the makers scramble to supply me at any price, on any terms. (I trust you will not give credence to any of these firms who have supplied me.) Photographs will find postcards at 2s. per dozen a paying line (even if you take the orders), as the materials can be obtained practically for nothing.—Yours truly,  
A. S. WINDLER.

London, 24, 1908.

To the Editors.

Gentlemen,—To cure the profession of the postcard disease will require self-sacrifice on the part of its constituent members. The members to the "B.J." will not do it, and I do not think a cure meets the case either, for how would that affect a man who is owning, say, twenty or more studios, while it would do nothing to the already intolerable burdens a small proprietor has to bear? The cure can only be achieved by the concerted action of professional men in the country. The best way to secure the cure is immediately forming societies in every large town. Here the self-denial will come in. Organisers will be wanted to call on photographers in their town and convene a first meeting of twelve to twenty representative professionals, and then form a nucleus on which to form their society. I would suggest

that each society be a branch of the P.P.A., who would act as organisers and court of appeal, etc. These societies could arrange minimum prices to be charged by their members, and let their fellow-townsmen know the reason why.

The concerted action of the whole profession throughout the country should soon abate the fighting power of the pirates. Amateurs' back-yard work can be ignored. There are amateur bakers, gardeners, cobblers, dressmakers, etc., yet the professionals in these lines of business do not seem any the worse for it. I will say this, however. The Bakers' Association put an advertisement in the paper that bread will go up on a certain date, and on that date the little shop round the corner raises the price. Instead of writing to the editor, write to a fellow-professional and talk the matter over with him about starting a society, and do this to-night, and you will be on the right track. This applies to every pro. who reads this.

DAVID.

To the Editors.

Gentlemen,—Some time ago this matter was discussed, and it appears, from the recent correspondence, many are feeling its innovation. There is one point I should like to call attention to. In dealing with customers it is possible to convince them that they cannot expect good work at postcard prices. Without explanation they do not see why, if they can buy good portrait postcards from negatives taken by leading photographers, they cannot have theirs done at the same price. You can show them that these are only done in large quantities. If they will give an order, say, for 200 or 250 copies, then you will do them at the same price.

As a fact three-fourths only require about a dozen at any price, then you have the opportunity of doing them at 5s. per dozen, or the usual cabinet. In most cases I have found they have decided for the latter, but if any decide after all to go up the street and have the 2s. 6d. per dozen I, of course, allow them to go. It is not this that has affected the professionals' returns only, but the amateur, who takes for pleasure all his friends and gets his prints done at low prices, and where he does not actually give them away he only charges the bare cost of materials. In large centres it would be impossible to check the supply of the 2s. 6d. postcard, but in smaller towns they could be shut out if all the photographers would combine; but there is the rub, the profession is not united in any way.—Yours,  
OLD PRO.

April 28, 1908.

Several other letters on this subject must be held over until next week.

"THESE FILMS," said the photographic material merchant to the eminent judge who had recently taken up snapshotting as a hobby, "must not, of course, be exposed to the light at all." "Quite so," replied his Honour, "I understand. I shall try them in camera."—"The Globe."

WE REGRET TO LEARN of the death of Mr. Benjamin Illingworth, the eldest son of Mr. W. Illingworth, Abington Street, Northampton, which took place at Neemuch, Central India, on March 28. Mr. B. Illingworth held a very lucrative position at the head of a Bombay photographic firm, and it was while photographing in Central India that he was fatally seized with small-pox.

TO A MANCHESTER PURCHASER.—The Birmingham Photographic Company, Ltd., write: "We received a postcard this morning, postmarked Manchester, inquiring for a quotation for 'Nonstress' glossy bromide paper, 18in. x 15in., evidently the result of our advertisement in the 'Journal.' The sender not only omitted his address, but also his name. Would you mind noting this in the 'Journal,' in the hope that it may meet our inquirer's eye?"

WIRELESS TELEGRAPHIC TRANSMISSION OF PHOTOGRAPHS.—A company of journalists assembled at the Hotel Cecil on Thursday evening last to witness a demonstration of the Knudsen system of wireless telegraphic transmission of drawings, photographs, etc. Without entering into details of the apparatus, it may be said that Mr. Knudsen transmits from an original made on a thickly coated gelatine plate, in which relief, corresponding to the light and shade of the original, has been formed, which relief is dusted over with an iron powder. This original is traversed by a metal point, which transmits the electric impulses to the receiving machine, where they are recorded in dots or short lines on a smoked glass plate, from which a photographic print can be taken.

## Answers to Correspondents.

- \* All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.
- \* Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.
- \* Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & CO., 24, Wellington Street, Strand, London, W.C.
- \* For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.

### PHOTOGRAPHS REGISTERED:—

- F. A. CROOK, Oakdene, Eton Road, Datchet, near Windsor. Photograph of the East Front of Ditton House, Ditton Park, Datchet, near Windsor, and Photograph of the South Front.
- P. H. UPTON, 43, Park Road, Teddington. Photograph of a Flea.
- J. S. HEWARD, 48, Arundel Road, Littlehampton. Photograph. Shepherd and Flock of Sheep.
- H. ALLISON, 85, Clanbrassil Street, Dundalk. Photograph of the Rangers Gaelic Football Team, 1907, Dundalk.
- E. G. HARRIES, Bishop Street, Londonderry. Two Photographs of Fire at Londonderry Guildhall.
- F. H. HOWELLS, 12, Albert Road, Widnes. Photograph of Pez Mill Avenue, Cronton, near Widnes.

**DEXTRINE MOUNTANT.**—Could you kindly tell me how dextrine is mixed for mounting photographs? I seem to have failures each time.—G. W. R. W.

We presume your failure is in getting the paste to solidify, though you do not say what the failure is. The most probable cause is an unsuitable sample. You should get the best white dextrine from a reliable source; but why not buy the paste ready made?

A. K. D. (Blackheath).—We cannot say. If you will address Mr. Butt, c/o of the "British Journal," your letter shall be forwarded.

F. I. (Nunhead).—There are no books of recent date. We advise you to write Messrs. Dawbarn and Ward, 6, Farringdon Avenue, E.C., for their suggestion.

S. H. WRIGHTON.—The firm simply carries on the business of an agency for photographs intended for the Press. We cannot see that it is doing anything illegal.

**PLATE MARKING.**—Will you through the medium of your paper tell me who supplies the apparatus for plate-marking postcards in large quantities? I know the Leto people supply an amateur's method, but I want to plate-mark postcards by thousands, and cannot make a nice job of them at present.—B. E. W., Bradford.

Such houses as Houghtons, Marion's, Fallowfield's, and others, will supply the requisite appliances for plate-marking prints.

S.—A. H. Bull, 93, Harwood Road, Fulham.

**PENTLAND AND CO.**—With suitable blinds or screens excellent portraits can be taken in a studio with this aspect. Instead of having lower boards on the outside we should advise light wooden frames, covered with thin muslin or tracing cloth, hinged to, say, alternate sash-bars on the inside. These can be adjusted at any angle by connecting them, top and bottom, by a cord; they can then all be moved at once to the same angle. In such a studio as this a good size head-screen will be found very useful.

**COPYRIGHT QUERY.**—Would you kindly advise me as to the following? Having a print in my possession and wishing to reproduce same for commercial purposes, could I copyright it? There is nothing to show whether the original owner has done so. Should I be liable to any proceedings after having copyrighted the print?—DOUBT.

You cannot make another person's work your copyright, unless he duly assigns it to you. If you copy the picture and make copy of it copyright that does not absolve you from proceedings for infringement of any copyright there may be in the original picture. It is not necessary that a picture, the copyright in which has been registered, should bear the word "copyright." He who copies another's pictures does it at his own risk.

**OBSCURING GLASS.**—Will you kindly give me a formula for frosting glass? During the summer months I am troubled with very strong

reflections, but must not have frosting too dense, as it cut off too much light. An early answer in your "Answers to Correspondents" column will greatly oblige.—A. E. C.

A very good medium is whitening, mixed with starch paste. The best way to apply it is with a sponge, stippling it over so as to avoid streakiness. This frosting is easily washed off at the end of the season. A better thing than applying anything on the glass is to have some light wood frames, upon which is tissue or tracing linen. They may be fitted with two buttons, and removed at any time when not required.

H. M. K. and Others.—In our next.

**POSTCARD.**—We advise you to get the "Fine Art Journal," 11, Arundel Street, Strand, W.C. It is a trade publication, but we should think they would supply it to you.

**A SHABBY TRANSACTION.**—(1) I should be extremely obliged to give me your advice in the following case. Some time ago I took a sitter. A dozen cabinets was to be the order. I submitted the usual lightly printed proof, and in due time heard that the sitter was satisfied with it, but would like to see a proof somewhat darker than the first one. I complied with their request, but the precaution to write my name across it. I waited some time and then wrote, asking them whether I should proceed with the order. I was greatly surprised to receive a curt note, stating that they were not at all satisfied with the proof. I have since learned that the proof was finished and copied by an amateur friend, and sent to a retoucher, to be retouched, if possible. (2) When I became aware of what was going on I sent them a polite note, asking them, since the sitting was satisfactory enough for copying, to retouch, if possible, to be retouched, if possible. 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(1) This is a very shabby transaction, but we do not see how you have any remedy, unless you proceed against the party who made the sitting and proof. (2) It would certainly be illegal to make use of the portrait as a specimen, and it might lead to a lawsuit. (3) In any case the copyright will not belong to you; it is the property of those who gave the order for the portrait being taken. We should say you would do well to retouch the 2s. as a payment for the sitting. In no case give up the negative.

R. E. WESTON.—1. We cannot explain this, except by assuming it is an effect due to a variety of halation. Try backing the negative and see if they give results free from the defect. 2. We have used this process, but it appears probable that if the first negative is too fully developed the resulting negative will be too contrasted. We should aim at a soft positive; but you should do the effect yourself, especially as you intend to apply the process to paper negatives. 3. We should not use the sulphite, but a little acid only.

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## The British Journal of Photography

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## SUMMARY.

**The Bromoil Exhibition.**—Mr. J. C. Warburg, on page 356, reviews the exhibition of Bromoil prints now open at the "British Journal." Mr. Tilney, on page 359, has some notes on the seventy-two exhibited prints which form his first attempts at the process.

**The Postcard Portrait.**—In concluding the correspondence which has been running for some weeks past we have something to say of the causes for the present evil, which, as we point out, may frequently be mitigated by the exercise of tact in the reception. (P. 354.)

**Mr. W. Foster Brigham**, on page 362, contributes his experience of the use of a new printing paper for professionals.

Some topical hints for the middle-class professional worker appear on page 363.

Some maxims to be followed in posing ladies have been uttered by an American worker. (P. 364.)

The new home of cinematography organised by Mr. Charles Urban is described on page 361. At the opening on Tuesday last demonstration of cinematography in natural colours was given by Mr. G. Albert Smith.

Mr. Justice Jelf's recent decision in a cinematograph copyright case supplies, we would hope, by inference, the argument that some measure of protection for cinematograph films may be sustainable under dramatic copyright. (P. 355.)

The collotype process and the testing of shutter speeds figure prominently on this week's society reports. (P. 368.)

A criticism of the chief portraiture at the Royal Academy is given on page 359.

## EX CATHEDRA.

**Next Week's "B.J."** Owing to pressure upon our columns this week, due to the notices of the Bromoil exhibition, and other matters, we are compelled to hold over until next week the article in the series, "The Modern Note in the Design and Fitting of Photographic Premises," which deals with the design and erection of a complete photographic establishment. This appropriate conclusion to a series of articles, which have attracted much attention, will itself be signalled by the presentation with next week's "B.J." of a large supplement giving the architect's drawings of the external and internal features of the buildings. The supplement will be specially worth preserving, and this announcement is therefore made in order that those of our readers who have not the "B.J." regularly on order may not be disappointed in getting the issue of May 15.

\* \* \*

**Mr. Speaight's Marble Arch Improvement.** Everybody must surely congratulate Mr. F. W. Speaight on the speedy and successful issue of his suggestion as to the improvement of West-End London by the detachment of the Marble Arch from Hyde Park. It is only three years since Mr. Speaight, as a "citizen of London," first made known his scheme, but, thanks to the unanimity amongst the public bodies concerned, almost as remarkable as that of the departments of the Mikado's Government under the administration of Pooh-Bah, and particularly in consequence of the interest and support of the First Commissioner of Works, the suggestion has become an accomplished fact within the past few days. The story of the negotiations which Mr. Speaight has issued, lest people credit him with more than his due, makes us regret that the original scheme has not been carried out, but the satisfactory fact remains that London owes to one of her photographers the beautification of an ancient landmark, and improved facilities for traffic at a point of intense vehicular congestion.

\* \* \*

**The Real Rumford's Photometer.** By good luck we have recently been able to secure copies of Rumford's original papers on the photometer, and a study of these reveals the somewhat remarkable fact that the clumsy apparatus described in the optical textbooks as Rumford's photometer is only a rough experimental device that he never dignified with the name of photometer at all, and one that he very soon abandoned in favour of a greatly improved instrument, with regard to which he states:—"I have now brought the principal instrument to such a degree of perfection, that, if I might without being sus-

pected of affectation, I should dignify it with a name, and call it a photometer." The one-rod photometer of the textbooks was Rumford's original idea, and he described it to Sir Joseph Banks, President of the Royal Society, in a letter dated December 20, 1792, and read before the Society on February 6, 1794, more than two years later. On the same night, however, they read a second letter from Rumford dated March 1, 1793, or only a few weeks after his first letter; and this second letter described in the fullest detail what he for the first time called a photometer. This was the instrument that he did his important photometric work with, and the one that he advocated. A most essential feature of it was the use of two rods to cast shadows, instead of one, but this two-rod photometer is ignored in the books, though the descriptions of the two varieties were published together. As a matter of fact, the inefficient apparatus of the textbooks was one that Rumford condemned and abandoned, and those of us who have been forced to study it and to respect it under the delusion that it was Rumford's photometer may well consider that we have a grievance against the "authorities." The real Rumford photometer consists of two long optical benches forming an angle of 60 degrees with each other. At the point where their axes intersect a white screen is fixed exactly at right angles to a line bisecting the angle between the benches, and on each bench axis a rod is fixed, each rod being 2.2 inches from the screen and 3 inches from its neighbour. The lights to be tested are moved backwards and forwards along the optical benches, and the two lights, of course, cast four shadows of the rods. The two outer shadows are eliminated by a black screen, and also by tubes that direct the light from each light towards its own rod. The two inner shadows fall next each other, and are observed between the rods by an observer standing between the benches. The advantages of this arrangement are obvious to any one who has attempted to work with the single-rod arrangement, in which the rod most effectually prevents one from obtaining a direct view of the shadows, though a direct view is necessary to accuracy. Rumford points out that it is desirable that the shadows to be compared should be of the same width, and to effect this the rods are made to rotate, and are fitted with wings, so that either shadow can be increased to the right width. Any such adjustment is, of course, impossible with the single-rod arrangement. If compared with what is commonly supposed to be the Rumford photometer, it is evident that the real Rumford photometer is a very efficient and workable instrument, but the use of two rods and the proper adjustment of the screen are most essential features.

\* \* \*

#### A Curious Stereoscopic Experiment.

In a book on "The Eye," by Alfred Smee, F.R.S., published in 1854, a very curious method of obtaining what the author calls a binocular picture is described. Mr. Smee, whose name is well known in the scientific world, held curious ideas with regard to binocular or stereoscopic effect, and his binocular pictures, in effect, amounted to the printing over one another of a stereoscopic pair so arranged that the principal objects at the point of sight should be in register. To produce the separate pictures, he employed a single camera arranged to rotate in an arc of a circle, the centre of which formed the centre point of the view. On the advice of Mr. Hensman, Engineer to the Bank of England, to which institution Mr. Smee was surgeon, the camera was mounted on a wheeled carriage with front wheels a little smaller in diameter than the back wheels. This ensured the camera being kept level while it was moved  $2\frac{1}{2}$  inches round the arc for the purpose of securing the two views. The apparatus was used in

Messrs. Horne and Thornthwaite's "photographic room," and on experimenting it was found that the best results were obtained when the camera was kept continually in motion, backwards and forwards through the space of  $2\frac{1}{2}$  inches. It is claimed in the book that "the character of the likeness is wonderfully improved." The experiment is a curious one, and its effects are rather difficult to understand, seeing that they are not paralleled by any modern arrangement of apparatus. If any are still in existence, they would be interesting, even if the wonderful improvement in the likeness should not be quite manifest.

#### THE POSTCARD PORTRAIT.

IN our "Correspondence" columns this week appears a further batch of letters on the evil of the portrait postcard, in regard to which we have published the views of a considerable number of photographers—with one or two exceptions, all, we should say, of the lower middle class. In closing the discussion we may comment on certain aspects of what is undeniably an evil in certain classes of present day portrait photography.

It must be admitted that the portrait postcard has now become established, and that it is being produced in some places at very unremunerative prices—in some instances, as low as two shillings or half-a-crown a dozen. But these cutting prices are mostly confined to small country places. In most middle class businesses in the metropolis the minimum charges are about double these figures, and they are low enough in all conscience for good work.

Much of the present state of the postcard trade has really been brought about by photographers cutting one against the other. Customers, it must not be forgotten, do not rule the photographers' charges, but when they are offered pictures of very nearly the same size as cabinets for, say, half-a-crown a dozen, while the price of the latter is four or five times that sum, it is not surprising that in many cases they elect to have the former.

The late correspondence has been interesting from several points. For example, one correspondent showed the very lax way in which some businesses are carried on. It was related that a customer brought to the studio four children and a dog to have them photographed in four different positions. When the work was done the customer said she would have a dozen postcards from each negative, amounting to ten shillings in all. Our correspondent bewails the fact that she did not order cabinets, as then his bill would have amounted to nearly £7. But when a business is conducted on such lines as this, we do not see that the photographer can really believe that he is doing anything but actually encouraging the evil of which he so loudly complains.

Not a few of the "middle class" really cultivate the portrait postcard by making a feature of them in their shop-windows and show-cases, and it is not surprising that by so doing they are advancing a great and growing trade evil. Some will say in defence that others are doing it, and they must follow suit. Well, that is an excuse of a kind, but the middle class photographer who is doing good class of picture should be able to ignore this type of business, and thereby maintain his status amongst his customers.

On this point we will mention a conversation we had the other day with a middle class photographer about the postcard subject. He told us he did postcards at four and sixpence the dozen, but he did not do many, as he had a clever business lady as receptionist who saw to that. She made no show of cards, but always had some handy when they were asked for. These specimens were all of a homely



of sitters, attired somewhat unfashionably. At the time plenty of excellent up-to-date cabinets kept lying about. The contrasts were great, and not the advantage of the cards. On these being considered commonplace by customers, the receptionist would mildly state that it was mostly commonplace people who ordered cards, and she would sometimes suggest that, if a portrait was not actually required, it would possibly be better to order, say, half-a-dozen cabinets, and her copies of them could afterwards be had as required. The tactics more often led to an order for cabinets than cards, and our friend added that by this lady's busyness he made very few portrait postcards, while he had many cabinets as ever.

The many suggestions made by correspondents for checking the extending postcard business have indeed been various, and some not a little ludicrous, but no really practical one has been put forward, and probably will not while there is so little unity amongst professional photographers. Each appears to look upon his fellow more as an antagonist than anything else, and there is no sign of a spirit which is often to be seen among the professional photographers of America when such matters as this are threatening the interests of the profession.

Several of the letters we have received have made reference to the Professional Photographers' Association, and have suggested it should take up the matter for the benefit of the profession generally. As a rule, these writers are not members of the P.P.A., yet they feel themselves justified in posing as censors of the Association.

As a matter of fact, only a moderate percentage of professional photographers are members of the P.P.A. If support which it deserves were granted, the P.P.A. could embark on some of the measures which present a reasonable prospect of success. Thus, if the Association had the support of the general body of the profession, and district branches, it might be a very easy matter for it to arrange a difference in the style of the postcard, so that it does not clash, as at present, with the cabinet picture.

This might be done, say, by making the postcard of only one size as could be taken on a quarter-plate and masking it, so that, with the masked border, it would fill up the full size postcard. This would be one way out of the trouble; and others would doubtless suggest themselves. But under the existing state of things nothing practical can be done.

#### COPYRIGHT IN CINEMATOGRAPH FILMS.

The *Times* of April 30 is reported Mr. Justice Jelf's judgment in the King's Bench Division of the Court, in the case of *Karno v. Pathé Frères*, the circumstances of which have a bearing of considerable importance on the hitherto somewhat nebulous question of right in cinematograph films. The case is somewhat obscure, yet the general deduction from the learned judge's judgment is that, from a legal standpoint, the reproduction of a series of incidents by a cinematograph performance amounts to a dramatic "representation." We better first give a brief résumé of the case. The plaintiff was Mr. Fred Karno, the proprietor of the sole right of representing or performing a farce or pantomimical play, which, under the title of "The Mummie Birds," twice nightly, has been performed for several years at theatres and music halls. The action was brought by Pathé Frères for damages for alleged infringements of their rights by the sale and offer for sale of a cinematograph film called "At the Music Hall." The characters in "Mummie Birds," it may be explained for the

benefit of those who have not witnessed this performance, consist of the spectators or audience, the performers and artists, and the stage attendants. Notable characters among the audience are a boy in an Eton suit and a "swell" in evening dress, who, in a state of semi-intoxication, interferes in various ways with the performance. We need not dilate, however, upon the features of the piece, except to say that in the opinion of the learned judge himself, who witnessed a performance of both the piece and the cinematograph representation, the film imitated, with considerable exactness, the incidents of the play. The action for damages arose from the fact alleged by the plaintiff that the film was frequently shown in a provincial town a week or so prior to the arrival of the living company, with the result that the latter's receipts were greatly reduced in consequence of the public having seen the same incident on the cinematograph. The questions, however, before the judge were the three raised by the defendants, namely (1) that the piece, as performed, was not a dramatic work entitled to protection under the Act; (2) that the cinematographic reproduction was not actually a "representation" of the sketch; and (3) that the defendants, by selling the film, were not causing the plaintiff's sketch to be "represented." The larger portion of the learned judge's summing up was devoted to the consideration of the first of these lines of defence, through the legal intricacies of which it is not our intention to follow him. Suffice it to say that in the light of the Dramatic Copyright Act of 1833, and of the subsequent decisions in the Courts since that date, Justice Jelf concluded that the "Mummie Birds" "had no real foundation in the way of dialogue or literary composition so as to bring it under the Act." In other words, the performance, according to the judgment, did not amount to a dramatic work, and consequently a reproduction of it by cinematograph or any other means was not a legal infringement of it. On this ground alone the case for the plaintiffs broke down, and judgment was given for the defendants. We are, however, indebted to the learned judge for his remarks on the two latter lines of defence taken up by the defendants, and it is these which have the particular bearing on infringements by cinematograph. The questions are:—(1) Is a cinematograph performance of a play a "representation" of the play? and (2) In the event of such a representation, is the maker or seller of the film the infringing party, or is the person actually responsible for the representation to be judged guilty of infringement? Mr. Justice Jelf, in view of possible appeal to the House of Lords, has pronounced on these two points as follows:—"In my opinion, if the 'Mummie Birds' were within the protection of the Act, the cinematograph reproduction of it, such as I find this to be, would, in fact and in law, be a representation of the plaintiff's sketch within the meaning of the Act. It is represented to the eyes of the spectator. If the parts were played by living persons the spectators would see them moving about and copying what is done in the 'Mummie Birds.' Mere pictures or even stationary tableaux vivants would not, I think, infringe the right of sole representation, but, as the cinematograph shows the figures just as the living persons, I think this reproduction would be within the language as well as within the meaning of the Act." As regards the point of producer and performer, his lordship's judgment (in regard to the suggestion that the defendants, who make and sell the infringing instrument, without which the infringement could not take place, and do so with the knowledge and intention that it will and shall be used for that purpose, do take an important part in the infringement itself), his lordship, we say, held that the inference in these circumstances would be held to be too remote and far-reaching in its consequences to be accepted. In short, even if the action of the plaintiff had been otherwise main-

tainable, it ought to have been brought, not against the makers or sellers of the film, but against the actual proprietors of the performance.

As we have pointed out above, this case, although not of direct importance to the cinematograph trade, yet does establish by inference certain principles which may help towards the proper protection, in the future, of films from infringement by other makers. This question, which, as a cinematograph film maker wrote in our columns three years ago,\* is "an open sore of the cinematograph trade," is not dealt with in the Artistic Copyright Act, nor, of course, in the still older Act relating to dramatic copyright, both of which legal enactments were framed years before the invention of the cinematograph. As we wrote in our issue of December 22, 1905, there would appear to be no means of maintaining copyright in cinematograph films through the Literary Copyright Act or through the Act of 1862 relating to artistic copyright. The recent judgment of Mr. Justice Jelf is the first to class a cine-

matograph representation with a dramatic performance. If, as Mr. Justice Jelf has pronounced, a cinematograph representation is an infringement of a dramatic performance, it would almost follow that the infringement of one such film by another might be the subject of action under the Act relating to dramatic copyright. Apparently, something tangible, which can be deposited as a description of the play, is necessary to establish a series of incidents in a play, and this, of course, the film itself provides. In the notorious uncertainty of the law loopholes for escape may be discovered in this argument, but an action for infringement of one film by another conducted on the above line would certainly appear worth while in the interests of the cinematograph trade. As we ourselves pointed out in the issue just referred to, protection under dramatic copyright would be no preventive of production or sale, but "if it could be enforced it would restrain exhibition, which is good enough for any film maker." It will thus be seen that our suggestion of three years ago is confirmed by Mr. Justice Jelf's judgment on the third point taken up by the defendants.

\* "B.J.," December 15, 1905, p. 993.

## BROMOILS AT THE "BRITISH JOURNAL."

For a little over a fortnight—until May 27—there is to be seen at the house of the "B.J." an exhibition of prints by the Bromoil process, which is of somewhat exceptional interest. As we have already announced, the collection of seventy-two prints owes its existence to the joint labours of Mr. George E. Brown, by whom the subjects (in Bavaria) were photographed; to Mr. Welborne Piper, by whom the surfaces of the bromide enlargements have been prepared for pigmentation by the process invented by himself; and to Mr. F. C. Tilney, by whom this last and vital part of the process has been performed, to say nothing of the co-operation of Messrs. John J. Griffin and Sons, Ltd., who made the enlargements on their matt "snow-white" bromide paper. To these seventy-two prints we have added "straight" bromide enlargements from fourteen of the negatives, selecting for this purpose negatives the character of which has been greatly modified in the bromoil print, as well as others from which but little departure is made. A further feature of interest which should not be overlooked by our visitors is the fact that the prints on

the walls represent the absolutely first practice of the process by Mr. Tilney. One or two prints of the very first half dozen are not exhibited, but with this exception the collection represents the total sum of a worker approaching the subject for the first time, and, moreover, turning out some half gross of prints in a short time. It is not our intention, nor, we are sure, Mr. Tilney's, to say this in any way as an "apologia pro suo broleole," but the fact may interest present and would-be workers of the process, whom we will now refer to the following review of the prints and opinions of the method by Mr. J. Warburg. There is further appended some brief notes on the exhibits by each of the three accessories before the act.

The bromoils can only remain open at the "B.J." until May 27, as they must then make way for the exhibition of the Society of Colour Photographers, which opens on June 1. Messrs. John J. Griffin and Sons, however, have kindly consented to show them at their "Rendezvous," Kingsway, from June 1 to 27.

### A REVIEW OF THE "B.J." BROMOIL EXHIBITION.

An interesting exhibition of an original kind is now open at "The British Journal of Photography" office. Mr. George E. Brown, on a recent trip to Bavaria, was evidently very busy with his hand camera. Of the resulting negatives no fewer than seventy-two have been enlarged by Messrs. J. J. Griffin and Sons. These, after being bleached by Mr. C. Welborne Piper by his Bromoil process, were pigmented by Mr. F. C. Tilney. Every print has, therefore, been through the hands of four different individuals, each of whom has had an influence on the result. In many instances untouched bromide enlargements are shown side by side with the bromoils, enabling a useful comparison to be made.

Mr. Brown does not pretend to be a photographer of great pictorial prowess, though his two pictures at last year's R.P.S. (one of which hangs at the portal of the Bromoil Exhibition) show that he is more modest than need be. His "raw material," as it appears in the comparison prints, is generally well arranged and good in composition; but the use of a hand camera and non-orthochromatic plates, followed by bromide enlargement, has given somewhat hard prints, whose aerial perspective and tone values are not always quite up to pictorial standards.

It is the more interesting, therefore, to observe to what extent Mr. Tilney (who is by profession a painter and draughtsman, and to some extent a photographer) has been able to remedy these faults, while making the most of the virtues of subject and composition.

The following examples will serve to show what he has done. In No. 64, a shepherd is following his flock, which is grazing on the brow of a hill. The original shows a blank sky, a monotonous stretch of grass, unbroken by any line or shadow, and a hard-cut edge of hill against the sky. In the bromoil the edge has been softened. By introducing a distant star on one side of the sky, this has been pleasingly varied, and interest and centre of attraction given to the composition. The evenness of the grass has been broken up, though I think I remember Mr. Tilney himself saying at a lecture he once gave, detail did not need breaking up. This has given variety, at the loss of texture. The grass was undoubtedly grass before, but now parts of it might be snow or water.

No. 57 shows two ladies in a strongly sunlit street, at the end of which stands the Church of St. Lawrence, Nuremberg. Mr. Tilney has softened the edges of the sharp shadows,



ed the sunny effect, besides needlessly removing the lines flagstones. Here Mr. Brown scored better alone.\*

No. 40 the characteristic square tower which forms the of interest is given greater importance by the introduc- a white cloud behind it. It is a pity the square build- the left could not have been eliminated. In this print, the first one described, the inherent photographic quality en kept.

No. 58, the foreground flock of sheep, the rather black in the mid-distance, and the hard hill edge behind, have n softened and brought into harmony, with perhaps a loss of character in the sheep. Much the same might, r, have been done in another process by making a very int.

No. 9 and 12, the photographic effect has been lost with- n an artistic one. These, I understand, were early nents in the process. It may be said that the result achieved by Mr. Tilney is to soften down the uncompromising photographic effects of sharp focus and hard development, to simplify detail, and especially to ce aerial perspective where lacking; results which can eat extent be obtained more directly by careful differ- n of focus, soft development, and the choice of broad g (not quite easy matters when on tour with a hand where time is precious and opportunities do not recur). dded to this is the very effective introduction of cloud and the massing of light and shade, possibly obtainable, th somewhat less freedom, by double printing and g down parts of the print.

No. 7 is a good example of some of these points; the fore- heaps of hay are less wiry, and the leaves of the trees tly and better massed, while the Castle of Gösswein- n pushed back to its proper place in the picture.

No. 22, there was a monotonous distribution of light and the whole picture being more or less of medium tone, he sunlit grass, owing to the colour-blindness of the sed, was much too dark. Here Mr. Tilney has imagined shadow covering and binding together the foreground ht side, while the lightened hillside on the left correctly ts sunlit grass, and leads the eye to the now distant mplied Castle of Harburg, behind which appropriate ave been introduced. Here, then, not only have values erial perspective been improved, but a rather esting composition has been redeemed and made sque.

No. 51, "The Innkeeper," the general effect has been sim- but at the expense of richness of shadow detail in tant house, of character in the face, and texture in te shirt sleeve. The preservation of texture and modu- n light tones seems to be a serious difficulty both in process and in Mr. Piper's modification. In this case abtful if the bromoil is an improvement. The richness distant shadows has been lost, though the process is ose richness is, to me at least, its greatest attraction. ave piled on more ink on the figure, to differentiate the background, than have lightened the latter and "quality."

No. 7 is a similar case. The Jena market is full of peasant at their booths. In the foreground sit several of them eir curious baskets. Mr. Tilney has laudably tried to them from the confused mass of humanity behind them, s pushed back the distant houses; but more might en done. The distance could have been lightened, or till, evened up a good deal more; while the actual the woman in front, might have been strengthened. de more telling.

ney, in his short article on page 350, refers to the difficulty of retaining e light passages.—Eos. "B.J."

In No. 21, another presentment of the Castle of Harburg, a very interesting and dainty sky has been worked in.

Most effective of the whole collection is No. 33. Here we only have the finished picture, and are not shown the raw material. The centre of the composition is the Church of Gösswein-stein, sumptuously treated, with beautiful lines of architecture, as tender yet as incisive as if drawn by the hand of an etcher. Whom are we to praise for these? A very fine-sky sets off the picture, which has the darker tones massed towards the centre. This picture gives one the pleasure of a fine engraving or etching.

Just a few notes on some other exhibits. In No. 19, the experiment has been made of introducing an effect of mist rising from the water. The experiment was worth making, but it is a question whether it is often possible to represent convincingly a state of atmosphere very different from the actual one present at the time. No. 8 is a group of two girls with a very humorous expression. No. 69, of a farm labourer and pig, also strikes a humorous note. No. 2 is a broadly treated portrait of a member of the Zeiss firm of Jena. Dr. Wandersleb is shown in profile sitting at a desk. In his hand he holds a sheet of white paper, which by its high tone first attracts the eye. As the most conspicuous part of the composition, it should have had the interest given by delicate modulation and lighting; but it has none, except that which one stroke of a brush has made. In consequence the work, as a picture, fails, in spite of its other good points.

I reserve No. 68 to the last, to point a moral. It is a rich print, in which the Burgomaster's Franz-Hals-like frilled collar contrasts with his black robe, and forms a good setting to a fine characteristic face. Has the most been made of the opportunities? I think not. In parenthesis I will remark that when a man has been dabbling away at oil or bromoil prints for weeks at a time, his elbow and wrist become abnormally muscular; and it is therefore with some trepidation that I venture to criticise Mr. Tilney. Still, in the cause of Truth and Art, one must incur some personal risk.

Why I quarrel with Mr. Tilney is this: the oil process, as also its modification, is pre-eminently suited, by its rich quality—what the French call *matière*—to give luscious shadows and rich contrasts, such as we meet with in good etchings. Here was an instance where the most might have been made of this quality. There was no reason why the ink should not have been loaded on to the black robe, close under the collar—why a pure white should not have been taken out of one of the frills next to it, so that the light should *sing* out. Instead, the ink has been loaded on to the skirt of the robe, where it does not tell against a high tone, and the effect of climax is partially lost.

It has been Mr. Tilney's aim throughout to preserve the "photographic character," while increasing or importing the pictorial element; and this he has, on the whole, done excellently well. What, however, he has sometimes considered too little, is the "character of the medium." As M. Demachy pointed out in a recent article in these columns, there is no point in imitating platinotype in an oil print, nor, I hasten to say, has Mr. Tilney done so. To improve tonality and eliminate disharmonies is more meritorious; this Mr. Tilney has done very fully. Thirdly, to bring out those qualities of the process which differentiate it from other processes, this is the *summum bonum*; and this height Mr. Tilney has not very often reached, though in some of the pictures he has done so. Doubtless, to pigment another man's prints, without knowing what was the sentiment or motive which originally inspired them, is not calculated to produce complete unity of result. In taking a negative intended to be produced in oils, it would be well to bear in mind the qualities of the process, even when composing the picture; to choose street scenes where rich shadows contrast harmoni-

ously with high-lights, or figures in whose draperies there is the opportunity of recording or introducing a culminating high-light.

When we think of the story of Dr. Jekyll and Mr. Hyde, we become aware of the danger there might have been of the pigmentor upsetting and reducing to nought all the intentions and ideas of the photographer. This has not been the case. Mr. Tilney has loyally built on the sound foundations provided by Mr. Brown, and the result has been a most interesting exhibi-

tion, teeming with good things, and reaching in many cases a high level of excellence.

Even from those works which have not reached the high water mark of success, much may be learned; while a comparison of the bromoil prints with the straight bromides from which they have been produced, cannot fail to give an insight into the possibilities, the advantages, and the disadvantages of this ingenious process.

J. C. WARBURG.

## THE SOURCE OF THE NEGATIVES.

The photographs which form the basis of the present exhibition were all taken during a short holiday snatched last summer from the duties of Wellington Street. At the time they were taken I never had any intention of offering them up in this way, but when the idea of a Bromoil exhibition presented itself they were ready to hand, as so much raw material which could be rapidly brought into a condition for use in the Bromoil process. The fourteen enlargements which are hung above the Bromoil versions of the same subjects fairly represent the sort of results which any of the negatives will give without any doctoring whatever. As most of the exhibited pictures include the full amount of subject on the negative, a short account of the apparatus used in getting them may perhaps be of some interest. Without exception every negative was made in a hand camera, and, except the indoor portraits, Nos. 1, 2, and 4, all were taken with the camera held in the hand.

The camera was a focal-plane reflex, my experience of which has certainly caused me to prefer such an instrument to any other for the purposes of tourist photography. I may not speak for the habitual traveller who requires souvenirs of the places he visits, but has no particular cause for regret if he does not get them. My own position is usually that of the person who can spare only a week or two in the year to visit a strange country, and, there-

fore, must needs do his photography as quickly and as certainly as he can, even at the cost of some personal inconvenience. And from this point of view I most positively give my support to the reflex camera. The points of view from which the exhibited pictures are taken may perhaps be judged to be bad; but good or bad, they were often the object of a great deal of care, which, nevertheless, thanks to the reflex, was expended without waste of time. A great many of the subjects required a liberal use of the rising front. Nothing easier, when all else was ready, than to hold the camera level and raise the lens until the desired subject was included. One could dilate, too, on the easy employment of a long-focus as a hand camera lens when fixed to a reflex, and again on the equally valuable use to be made with a lens of large aperture. The luxuries of practice have been talked about by several reflex users, notably by my friend Mr. W. Thomas; but I may instate them once again in reference to the present exhibition, which affords a fair number of examples of the accuracy of adjustment obtainable with the reflex hand-camera. Those unconverted to the reflex must take my word for it as to the quickness of the reflex in comparison with a stand camera, and as to the large percentage of negatives which one gets containing just the amount of subject desired.

GEORGE E. BROWN.

## THE PREPARATION OF THE PRINTS FOR PIGMENTING.

The process of preparing a bromide print for pigmenting was described in the "B.J." for March 27, and it is unnecessary to go into the same details again. There are, however, some points that I had not then space to discuss that are worth consideration. It should be noted that different brands of bromide paper require somewhat different treatment. In some the gelatine appears to be soft and liable to rot in the preliminary treatment with acid, while in others it will stand the acid treatment for hours without any ill effects. Also some papers will stand far rougher methods of pigmenting than others. It is, therefore, very advisable to keep to one brand of paper and master its peculiarities. Generally papers with a "natural" or semi-matt surface work best. Some matt papers also work very well, but a few do not. Gaslight papers, coated with a slow bromide emulsion, are very workable, but chloride papers seem to be useless.

The original bromide should be full of detail and vigorous. It must be fully but slowly developed. If rather fully exposed it will acquire density very rapidly, but the result is then not well suited to bromoil. As regards developer, amidol is recommended, but others are nearly as good, while some seem to be nearly useless. With metal, for example, I have invariably failed, and rodinal generally gives unsatisfactory results; but in this matter I think a good deal depends on the paper used.

If the print is to be completely pigmented, that is, if all the original image is to be covered by pigment, very little fixing is required, but if any portion of the image is to be left unpigmented the imperfectly fixed image will darken by exposure to light, therefore longer fixation is desirable. The colour of the final image depends a good deal on the time for which the acid is applied, and upon the time of fixation, and also upon

whether the fixing bath contains sulphite or not. The sulphite is added to this bath to preserve it from the effects of the acid carried into it by the print. If, however, the acid is washed out before fixing the sulphite is unnecessary, and when it is omitted a faint brown image instead of a green one remains. This is much less conspicuous, therefore it is as well to leave out the sulphite if the result is to be vignetté.

If the pigmenting is to be carried out as soon as the print is ready, I generally adopt the quick method of preparation described before; but if the print is to be dried and pigmented at a later date, I give it a longer treatment, washing more thoroughly between the baths, and fixing very completely. It will be found that complete fixation gives much greater relief in the final result, though it is not clear whether this is any advantage or not.

When obtaining the ozobrome it is as well to ask for the ozobrome solution for bromoil, as the one best suited to the ozobrome process is not necessarily the best for bromoil.

Temperature should be looked after carefully, but in this there is a certain amount of latitude, varying with the time of year and the paper used. This is another fact that renders it desirable to keep to one brand of paper. I have met with one brand that requires solutions at 70 degrees F. in the winter but is spoilt in the summer by anything over 60 degrees.

As regards the final result this need not be the same as that obtained by the ordinary oil process. In bromoil the image retains the pigment more readily, and it is more difficult to alter the original drawing; but it is just as easy to correct its values, if they require it, or to add emphasis where wanted, and these qualities of the process will be seen well demonstrated in the prints now on view.

C. WELBORNE PAPER.



## MY EXPERIENCE IN THE PIGMENTING OF BROMOILS.

The Bromoil process has proved of exceptional interest to me. When all goes well the working out of one's notions seems delightfully easy, and is certainly fascinating. The photographic image is always within call when it is needed, as it is at times when one's enthusiasm leads one to safe shallows. Directly there is a feeling of floundering or two straightforward taps—cries for help—bring us with relief to the outstretched hand of the negative. As a matter of fact, one's experience of this particular variety of methods results in the conviction that the more respect one preserves for the photographic image, the more satisfactory is the final result. It is probably unwise to depart from the form and effect of the image unless there is pressing need to do so. In one or two examples in the present exhibition a frank attempt has been made to give a natural effect different from what a straight print would show. The best example of this is in the scene of the shepherd and his flock on a hillside in early morning mists, through which the sun struggles. (No. 58.)

A bromide print above displays no mists; its sunshine is bright, and its distance full of tone and vigour. Such essays are experiments to see how far the process will go in the direction of such whims, and there seems to be no limit. This particular print was pigmented with a weak and soft ink, consequently the textures are smooth and the tones even and soft. Detail is not lost to any extent—not more than it can be in such an effect in actual nature; but the gain in softness and homogeneity will, I think, be easily apparent. In the picture of the burgomaster, No. 68, an extremely strong effect is used, with the result that the robe and parts of deep tone are "ch and "fat," as engravers say. As a matter of fact the direction of the pigment makes or mars. If it is not exactly right for the subject it gives a lot of trouble. I have found it difficult to make my own pigment with "levigated" dry pigment mixed with varnish upon a slab with a muller. The necessary touch of oil may be supplied from a tube of artists' varnish, and that will also give some latitude in the matter of tone. A good black broken with yellow and orange tints gives a nice variety of greeny blacks, which are a relief when one is tired of the hot brown and amber colours. When said and done there is nothing so generally suitable, so

intrinsically lovely, nor so wide in scope as black. Stiffness or softness of pigment depends upon the relative proportions of varnish and oil. Some of both are always necessary.

The brushes (and I had the best that money could buy) I found a vexation of spirit. They chip and split and shed little bits of hair all over your print. These bits have to be cleaned off afterwards, together with specks and other unwanted morsels, when the print is dry. I have found only one method that does this important, but tedious and irritating work adequately, and that is the use of a sharp eraser or scalpel. The whole length of the edge may be lightly driven to and fro over the print, not vigorously enough to scratch. Whatever this fails to remove, the point of the instrument may. Sometimes a hair will jump off, and yet leave a mark. Then the operator must skill himself to hold his knife so that a white-scratch will exactly coincide with the black one and neutralise it.

The attentive spectator will see many little differences between the bromides and the bromoils shown together for comparison. Much may be done in altering little matters of composition, or in omitting some items altogether, although less is possible by this method than in the Rawlins process. Here and there a figure has been so lightly pigmented as to match exactly its surroundings, and so disappear altogether. This, of course, requires much patience and some sweetness of temper.

There is only one matter wherein I have had to admit myself as beaten beyond hope. It is that where detail occurs in a light passage I have been quite unable to capture it. Consequently many sunny pavements, textures of sheets of paper, and other surfaces, and similar arrangements of delicate detail in high tone do not appear at all in the prints. The high tone becomes simply white paper, and even by debasing the tone not much can be gained.\* If in other respects the subject is one of great contrasts in tone, the case seems to be a degree worse.

The few bromide prints are hung upon the *ex pede Hercule* principle, and are not special instances. Every print has been "controlled," though many look innocently "straight." The skies are in all cases adventitious. F. C. TILNEY.

\* Mr. Warburg in his article on page 356 instances this same defect in the case of several of the Bromoils. — EDS. "B.J."

## PORTRAITS AT THE ROYAL ACADEMY.

It can be admitted that there are few works of great power in this year's exhibition at Burlington House. We deal here with portraits only; but in every branch there is the same lack of something that rises much above a dead level of general merit.

The enthusiast who visits the Academy in the capacity of a collector looks eagerly around for the Sargents. When he sees a Lady Sargent he has the comfortable feeling of expectation gratified. In the present exhibition the Sargents are not quite up to the standard. Just a degree below it, however, comes "Huth Jackson." The lady sits upon a high-backed couch of drabby-white satin now quite recognised as part of the in-trade of Sargent and his satellites. Her dress is of satin also, and a white Indian shawl, with its coloured forms part of the attire. The accent of colour comes in mon-tinted cushion against which the lady's head is gently pressed. The ease and grace of the design, and the beauty of the subject, will no doubt make it the favourite this year. Painted with all the artist's marvellous directness, but with more completeness of realisation than usual, who call Sargent's method "slapdash" are hopelessly wrong; the mark; there was never a painter who worked with more care. In the other chief work of this season, the portrait

of the Duke of Connaught, this careful realisation of everything is still more clearly shown. If one compares Sargent's painting of the Duke's sword-hilt and handle, or the gold cords of his uniform, with similar details in any other portrait in the galleries, the difference is remarkable. Other men's swords are much more flimsily sketched, and simply stand for what they represent by tacit understanding of the spectator. In Sargent's case the things are solid presentations, not "suggestions." The Duke's portrait is a fine work. It is not in silks and satins alone that the master finds his supremacy. The smooth nap of straight hanging cloth is quite as wonderfully given, and the Duke's coat puts to shame many a "brushy," "painty" patch of work that hopes to be passed for a coat in other portraits. One does not see paint at all in this portrait. The head is a round, solid thing, the face shows all the textures of the skin of a man getting on in years, a matter wherein the painter spares not his most aristocratic sitter. We see, just as well as if we were talking to them, exactly how Time has dealt with both Duke and Duchess. Both of them are dignified and of truly noble and gentle bearing, but neither are flattered back into their prime. Indeed, Sargent is the very reverse of a flattering retoucher—he can afford to be. His portrait of the Right Hon.

A. J. Balfour, M.P., is exactly what it would not be if Reynolds had painted it. That master would have laid himself out to design something to be considered worthy of a statesman, using accessories of all kinds to build up a monumental work that should make posterity think the sitter a greater statesman than perhaps he really was. Sargent gives us Mr. Balfour pure and simple. No doubt the sitter looked rather dwarfed before the immense column against which he leans. No doubt his unassuming manner, his modest black clothes, and so forth, were not exactly in the grand style; but here he is as he was, and he does not seem to have inspired Mr. Sargent, who has spared not a jot of the realism. There is a touch of the satirist in the painter.

Solomon and Shannon between them divide the honours of the show after Sargent. The large panel decoration of the former is a complete success, entirely suitable for its monumental purpose, and yet quite charming and attractive in other ways. It is called "Mrs. Alfred Mond and Her Children." The lady stands proudly and gracefully between her two children, one of whom is upon a chair, and nestles its face against the bosom of its mother, who lays her left hand upon the shoulder of the other child standing at her knee. The group is skilfully arranged and extremely pretty. The sitters are in a richly furnished chamber, affording a fine display of accessories painted with sufficient realisation, though keeping their place, and answering their purpose of general aggrandisement. Mr. Solomon's next best portrait is perhaps that of "L. B. Abrahams, Esq." Here he makes use of the hood and gown as a relief to the unpictorial male costume of moderns. All such insignia of art, letters, law, court, Army, or Navy seem, naturally enough, to be eagerly pressed into service, and meets one's eye at every turn. This particular subject is one of great animation, representing the sitter seated holding a book, a finger between the leaves, and the other hand held up towards us as though in emphasis of some argument. The face has a smiling expression that entirely saves the subject from any charge of over-demonstrativeness.

"H.R.H. Princess Patricia of Connaught" is by J. J. Shannon, and will certainly enhance his reputation as a portrait painter. The Princess sits with one arm over the arm of a chair whilst the other lies in her lap, and her fingers toy with a long pearl necklace. The head is posed in a very happy manner, being practically in profile, but having a slight upward tilt. The eyes being more directly turned towards the spectator. A more ambitious work by Mr. Shannon is "The Marchioness of Salisbury and Lord David Cecil." Little Lord David sits upon a stool at the knee of his mother, who is attired in black satin. Both the sitters are shown to be raised upon the studio throne, and that in spite of the ordinary palatial background. This I would humbly suggest is an error of judgment, but the great merits of the work as a painting overwhelm all such minor considerations.

One is glad to find that Mr. A. S. Cope continues strongly to hold his own in spite of the newer associates who paint portraits. The best of his works is perhaps "The Marquess of Bristol," wearing a naval uniform of which the dark blue cloth

and gold are splendidly managed. The whole thing is strong and restrained. Less so is the "Mrs. Moreing," which is a little fussy by reason of its accessories. "Henry Cosmo O. Bonsor, Esq.," shows an easy pose, the sitter's right hand resting upon a table low enough to give just a little movement of line to the upright figure. Other works by Mr. Cope are worthy of note, and testify to his sound and trustworthy methods.

It is with a little disappointment, however, that one looks at the portraits of Mr. Bacon and Mr. Henry, and even Mr. Lambert, less fine this year than usual. Why do painters "go off" at certain times? Mr. Bacon has an immense equestrian group which can only be described as uninteresting in subject and unfortunate in design, the chief field of the canvas being filled with the sprawling legs of a great horse and some high "painty" dogs who leap about like imps. It is all very unimpressive, and Mr. Bacon has thought fit to reverse a general custom by painting his lady rider from the side upon which her horse does not fall, hence the portrait is of a horse with a lady's accessory. In the case of Mr. George Henry one must quarrel so much with his intentions, which are at least honorable; but he has nothing so arresting as his works of former years. His highest attempt, according to some critics, is "Ermine." It is a study in greys, and although nobody would deny that it is chic, nobody ought also to deny that it is lovely, and is as flat as it can possibly be. Half a dozen portraits from Mr. A. Hacker do not stir one to any new sense of power, though it may be mentioned that the lively and voluble "Arthur Serena, Esq."—a contradiction in terms—arrests by the snapshot appearance of the pose, so lifelike and admirably caught, though not exactly dignified. The sitter carelessly lolling upon a chair with his legs crossed and his thumb in the armhole of his waistcoat.

The portraits by Herkomer are what they have been for many years now, virile, but entirely without subtlety. His method of rapidity and his short cuts to colour find their culmination in the immense canvas of "The Council of the Royal Academy, 1907," a row of life-sized portraits monotonous in colour and alike in their sketchy brown shadows. The chief interest to spectators seems to lie in identifying the several characters in the group.

There are many other interesting things that should draw attention. Dicksee's portrait of "John Belcher, Esq., A.R.S." is well fitted with a background of sculptured frieze against which a T-square rests. The happy action in the portrait of "Ruth, daughter of C. A. Cripps, Esq., K.C.," is also noteworthy in the same painter's pleasant picture of a young lady throwing off a cloak from her shoulders. The shades of purple here are well mastered. A sumptuous costume piece is Lord Dail's "Olivia" portrait, where the large red robes make glowing colour. But when one gets away from the few leading works there is no knowing where to stop, and this critique has been done so with a parting recommendation to the smart and changing picture of a young girl sitting self-consciously in a dress of green and blue shot-silk. It is by Mr. T. Mostyn, who calls it "Miss Importance."

F. C. TILNEY

FRANCO-BRITISH EXHIBITION, 1908.—In honour of the French Minister of Commerce and Industry, Monsieur Cruppi, under whose patronage the French section of the Franco-British Exhibition has been placed, and Monsieur Cambon, the French Ambassador, a luncheon will be given at the Grand Restaurant in the grounds of the exhibition on Friday, May 8. The Duke of Argyll, Lord Derby, and the members of the Executive and Finance Committees, are inviting a large company of distinguished people, including representatives of the leading French and English journals, to meet their Excellencies, and during the morning the guests will have an excellent opportunity of inspecting the exhibits in the various buildings.

THE NORTH MIDDLESEX PHOTOGRAPHIC SOCIETY'S Year Book gives abundant evidence that the enthusiasm and activity which have always been one of the society's characteristics have in no way abated, and the list of lectures, etc., shows that all branches of photography receive their due share of attention. The record section, the special object of which is to obtain records of objects of historical and archaeological interest in the northern part of the county of Middlesex, has already collected over 200 such, which have been placed on loan with the Hornsey Central Free Library, where they may be seen on the usual reference library conditions. The list of outings contains two with special reference to this branch of photographic work. The hon. sec. is Mr. S. C. Puddy, 87, Crouch Hill, N.



## CINEMATOGRAPHY AT URBANORA HOUSE.

Friday last the Press were given an opportunity of seeing the establishment which the Charles Urban Trading Co., Ltd., has built and equipped within the almost incredible time of eighteen months in Wardour Street, where it lifts its head high above the chimney-

of Paris in London, a building without a counterpart in any part of the world. What would Dr. Paris, in 1826, have thought, as he twiddled his matrope, had he been told that its lineal descendant, the film cinematograph, as represented by the business of one firm, would revere for its housing a great 'block in the East-End of London, a staff of mechanics, technicians, scenic artists and photographers, and its emissaries in every corner of the globe? Such a dream, if it had ever been experienced, could scarcely have become the fact to-day if the cinematograph had remained mere means of light entertainment. To

Charles Urban belongs the credit of pushing forward the use of the cinematograph as a medium for the dissemination of knowledge, as the most efficient and pleasant of all "popular educators." Yet, to say that of the director of all things "Urbanora" is to do Mr. Urban scant justice. With a highly developed sense of the functions of a showman, Mr. Urban has been fortunate in adding the possession of genius to the way of mechanical invention and design, in originating a thousand uses for the cinematograph machines of his creation, and, lastly, of infusing into his colleagues the restless energy of his personality. The crowning achievement of this determined use of steel and indiarubber is the Urbanora House in Wardour Street, where, short of film manufacturing, everything which has

to do with the cinematograph—cameras, projectors, lamps, positive and negative records—is made and produced under one roof. To say that Mr. Urban "received" his guests is a poor word. He instantly bore you up high in an elevator to the roof-garden studio, led you down the outside of the building into machine shops, tried you into a basement room of printing and developing rooms, projected you back again into the board room, and left you to discover the welcome shelter of a buffet, as he caught sight of a new party of Pressmen certain of their way.

The establishment at Urbanora House is approached from the ground floor by a tribune on which opens immediately a projection theatre capable of seating 250 people, and fitted with complete lantern and cinematographic outfit installed in a fireproof chamber. Purchasers and hirers of films can here see themselves the latest creations of the Urban operators and their studios. The business offices, counting-houses, and other offices are on this floor, which, like other parts of the building, handsomely fitted. Numbers of coloured cartoons by Japanese artists of scenes in the Russo-Japanese war are a reminder of the

wideness of the sphere in which Mr. Urban's photographers have worked and are still engaged in making animated records.

The basement floor of the building is, perhaps, the most interesting. In one room a dozen of the Urban-Joy perforating machines are at work, giving the film its two edgings of the apertures by which

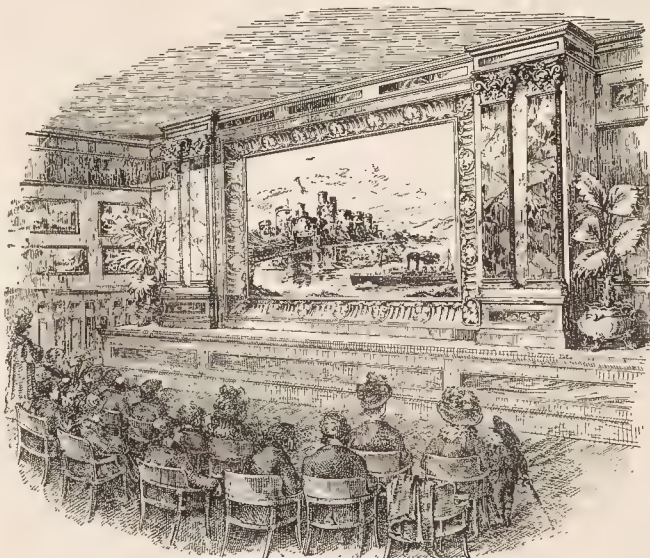
it is accurately guided through the taking camera, and, as a positive, through the projector. A machine for this purpose calls for an almost incredible accuracy of adjustment, since a tiny error in the making of each perforation is added up, hole by hole, and produces a film which fails to give its proper effect on the screen. At the same time it is necessary to be able to set the machine in order to allow for differences in the stretching power of the celluloid, differences in the working temperature, etc., all of which are provided for in the construction of the perforator which bears the names of Urban and Joy. Once started, the machines pour out perforated film into baskets, from which it is quickly wound into rolls by hand. The machine which prints from the negative bands on to the positive film are similarly adjustable to allow for the density of the negative and the speed of the emulsion. In one small room we saw twenty of them unattended turning out the positive films which are used in the

lantern. Development of the negative and positive films occupies another adjoining room in the basement, where the film, in 200ft. lengths, is coiled on the upright pins of the developing board, and, thus mounted, developed, fixed, washed, and sent by lift to an upper floor to be quickly dried on six great drums or reels. On these rapidly revolving reels, driven by dynamos and capable of

exsiccating 12,000 ft. of film an hour (a startling record which includes the time occupied in laying on and taking off) the process of drying is accelerated by a system of Mr. Urban's own devising, by which the air is drawn in through dust-filters, over a series of steam radiators, and the resultant hot, dry air passed through the reels by powerful electric fans. The tinting of the films—blue for night and yellow for sunshine effects—is done in another adjoining department; but the Urban Co., as we shall mention directly, is engaged in perfecting a method of cinematography in natural colours by a modification of the three-colour process.

Next, perhaps, in interest is the studio on the fifth floor. The whole of one side is open to the sky, and provides the full illumination necessary for the taking of a cinematograph film of a

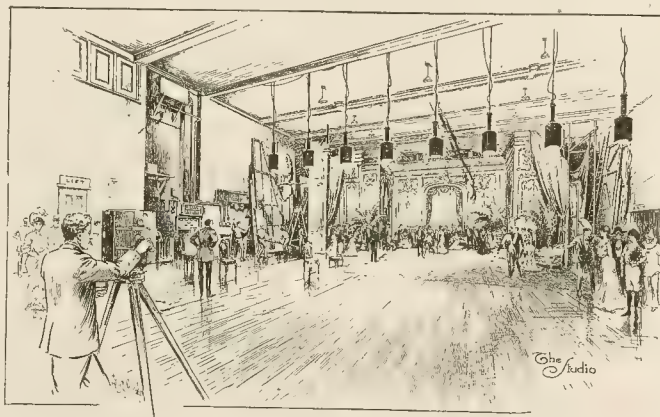
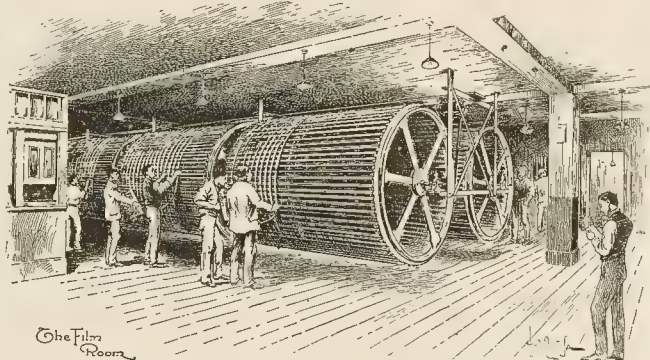
series of incidents. Instead, a battery of arc lamps allows of the work being done at night. This "studio" is more like the stage of a big theatre than any other place, and is supplied with scenery such as a theatre would be glad to have, for the background of animated photographs of the story or trick class. A floor higher still, a raised concrete platform, some 40 feet square, perhaps, forms the roof of





the house, and is to be used for still other subjects, which can be handled better than in the studio below. We stand here a few minutes looking down into the narrow streets of Soho. Below is St. Anne's Church, the Palace Theatre a little further east. North, south, and west there are a hundred landmarks to be picked out from this building, which shoots above the tenement and little roof gardens such as Mr. Pinero must have clambered up to when he was producing "Letty."

We descend by external iron stairways to machine shops where the cinematographs are made for the market, and come to Mr. Urban's private office and work-room, where, on a miniature screen the films are "edited" before publication, and new features in apparatus put to the test. Somewhere here is the colour department of Mr. G. Albert Smith, consisting of sensitising, drying, and developing apparatus, which can be handled in perfect darkness. We descend again to the street level, having seen, but, we fear, very imperfectly described, a marvellously organised establishment. The Urbanora House, in its extraordinary provision for the rapid and efficient production of its commodities, excites our keenest admiration. Mr. Urban's factory, show-rooms, and offices, all working with a maximum of efficiency, represent a triumph of technical organisation, and no one, we imagine, who has the good fortune to make a tour of Urbanora House will be able to refrain from adding their personal congratulations to ours.



The opening of Urbanora House was appropriately made the occasion for the first public demonstration by Mr. G. Albert Smith of the system of cinematography in natural colour on which, with Mr. Urban's encouragement, has been engaged for years past. We saw the "Colour Photograph Supplement" of December 6, 1907, of a preview of these same specimens, which, as Mr. Smith points out, are experimental results, made to test "workability" of his process, and not with a view to publication. Nevertheless, the audience of that week, and again on Monday last, endorsed the good opinion which Mr. Smith employs a colour method, and apart from the special sensitising of the to red and green, and the use of taking and projecting film departs in no way from regular cinematograph practice—that is to say, uses the standard film, standard machine, and standard perforation. Though the films of character are not at the moment available, were, indeed, put forward by the Urban Co. in demonstration of what so far has been accomplished. These facts and the striking results obtained should promise a speedy commercial introduction of the system. Mr. Smith employs taking and projecting screens of orange and blue-violet, and though he sacrifices a little, the whole effect is extraordinarily good. The pictures are the width of the film, and alternate along the length of the band.

## NOTES ON THE NEW "ARTISTA" PRINTING PAPER.

AFTER albumen gelatino-chloride, then collodio-chloride, and now, after a number of years, something really new in print-out papers.

How precisely it can be described, except by the rather striking name with which Messrs. Houghtons have christened the new departure, we are unable to say, for herein lies its chief claim to distinction and popularity, there is no trace of emulsion about the paper. What this means is easily apparent; there is no surface to stick or crack or to give the finished print the old photographic look; no surface to show up the spotting colour or more elaborate aerograph work; and lastly, a range of eight surfaces, including a very beautiful screen grain and vellum that are different to any other process, and of a nature that recommends them to all who appreciate the artistic effect that a natural paper with its attendant dead matte can give. Add to all this the ease, quickness, simplicity, and certainty of manipulation, as well as the cheapness of print-out papers, and we have "Artista."

In the concise directions various baths and procedure are given for securing a great number of tones, and mere following of the directions and a trial print or two will demonstrate better than we can describe the colours available.

Any printer used to C.C. will be quite at home with "Artista" printing being of very similar depth to that process. For warm tones obtained in gold bath print but very little darker than required when finished. For two-bath tones, whether in gold ammonia or salt, followed by platinum (or for fixing only), printing must be considerably deeper—say, until the highest light is fairly tinted; any clogging of the shadows will disappear in the baths.

It would take too much of our space to describe all the colours and the way to obtain them, but a slight idea may be given of the directions will supply the necessary formulae.

The easiest tone to get is a pleasing terra-cotta, obtained by washing well and fixing. A still warmer tone results if a salt bath is interposed between washing and fixing. A long range of warm tones, from red-brown to portrait-purple, result from washing in the gold bath afterwards and fixing in the usual way.

This reminds us that one of the chief characteristics of the paper from the manipulative point of view is the extremely small quantity of precious metals, whether gold or platinum, that is used in toning, and also the speed of toning. This very speed



first disconcerting to printers used to the slow toning of the al print-out papers, and until experience has been gained may d to uneven and too much toning. For instance, for a warm own the change of colour in the gold bath is practically impercep- le, and, after fixing, the print will appear much too warm; as print dries, however, the tone gets colder, all the red look dry- out of it. For this reason, to secure certainty of results the ing baths must be made exactly to formula, using the same care when compounding a developer. If the bath of constant and own strength is kept at a fairly equable temperature it will be nd that timing the prints will, at the start at least, be the best de for toning. The nearest approach to sepia, as distinguished n browns, is secured by washing as usual and then placing in the monia bath until the prints are thoroughly yellowed. The prints st now be thoroughly washed to remove all trace of the ammonia, the platinum bath will only tone when acid. After washing, say, ten minutes, fix in the ordinary way.

o much for the warm tones. The black tones obtainable, how- are, we imagine, the ones that will rush "Artista" into popu- ly, for the black is of that purity confined in the past exclu- ly to platinotype paper, a paper the "Artista" resembles very ngly in surface and ease of working-up. To obtain these per- blacks, "Artista" should be treated exactly like a collodion er—that is to say, the procedure is:—Washing; tone ly in gold, say, for ten seconds; wash thoroughly for ten tes and then tone in the platinum bath, in which the prints y quickly lose all warmth; afterwards another washing to oughly remove any trace of acid left from the platinum, and fixation as usual.

he paper tones so easily in platinum that the gold bath has not eat an influence on the finished result as with C.C. paper, but ery-brown tone will be about right for the gold bath. A black es in the "Journal" as to the most up-to-date manner of ucting a large business in town, with reception-rooms and ous studios furnished in the most luxurious manner, but all s of very little use to him with his small studio and only one ant, the last named being, perhaps, only a boy. Such studios o be found in all country towns.

### The Studio Spring Clean.

at such a photographer must do in order to increase, as well ep, his business is to turn out better and more up-to-date and in order to do this effectively the first step will probably inaugurate a thorough "spring cleaning," giving the whole both inside and out, a good scrubbing in order to remove all etc., which may have accumulated. Some photographers are e habit of putting paint on the studio windows or whitening to keep out the sun or diffuse the light. If this is done it d always be on the outside, but a better plan is to hang a n of some light, thin material inside, which can be used or s circumstances ordain, and which is not only much more nient, but also gives a better appearance to the studio itself. again, these curtains will need to be renewed from time to and should never be allowed to present a dirty or faded rance, nor to hang in a slovenly manner. If a curtain rod t be obtained, ordinary blind cord is a good substitute, as it pulled quite tight without much trouble, and the rings of the n move over it much more easily than they do over wire, on,

salt bath may be substituted for the gold, giving a slightly browner black, but the results are all very similar, and we advise those of our readers who wish to obtain a black that no other process can equal to use the two baths as we have directed.

It may be imagined that this will unduly lengthen the process, but we must point out that in point of fact a print-out process is, in a medium-size business, much quicker and certainly more convenient than the other numerous papers in the hands of photo- graphers. Both platinum and carbon must be finished same day as printing, and this means, in the case of the former, at least half-an-hour, and in the latter at least an hour of personal attention, ir- respective of washing, however small the batch. With artificial light papers the quickness is more apparent than real, for only one nega- tive can be successfully printed at a time, and each print must be individually developed. With printing-out methods, however, a great number of frames can be printed together without waste, and the whole batch of one, two, or three hundred are easily toned together, even in the double bath, under two hours. Any period of time may elapse between printing and finishing.

There are one or two styles of prints that are very suitable for "Artista." Chief among these is the print masked out on to a large piece of paper and plate-marked. Previously, the emulsion remaining on the unprinted edges spoil the appearance of all but platinotypes.

The vellum grade of this paper stands entirely alone, and for high-class work is certain of a great vogue for the particular sheen and quality of vellum has always been desired. For Cosway border masks, for vignettes, for paper mounting, we should expect this grade to excel. It must, however, be treated with great care, as it very easily cracks if twisted at all. The thinnest grade of white, too, gets very pulpy and is easily torn towards the end of the process. It is, however, quite stout enough for small work, but for whole-plate and larger the thicker grades will be found more economical in use.

W. FOSTER BRIGHAM.

## A STRAIGHT TALK TO THE COUNTRY PROFESSIONAL.

the time of year when things are just about as quiet as they very well be the average country photographer finds time hang ily on his hands, and begins to wonder how matters can be o to look a little brighter. Trade has not been as good as it t have been, and something must be done, but what? He has eeling that business that used to come to him is now going him, he conducts his business on the same lines as he has ys done, yet is not doing the same amount of work. He reads es in the "Journal" as to the most up-to-date manner of ucting a large business in town, with reception-rooms and ous studios furnished in the most luxurious manner, but all s of very little use to him with his small studio and only one ant, the last named being, perhaps, only a boy. Such studios o be found in all country towns.

which latter they are apt to grip, especially when it has been in use some time.

A very important item in the arrangement of a studio is the condition of the walls, which should either be painted in a quiet colour or covered with canvas of a dull shade. In the latter case they might be divided into panels with strips of thin wood, such as is frequently done at exhibitions. The main thing, however, to be remembered is that everything must be subdued in colour and in good taste. A few well-chosen examples of the photographer's work, suitably framed, will give a pleasing and decorative effect to the whole.

Do not crowd the studio with accessories, have as few as possible, and keep them out of sight till they are needed for use. A studio should look as much as possible like a room, not a workshop, and there should be no litter of odds and ends lying about. A few well-chosen backgrounds should be at hand for use when required, together with a good length of art serge of a dull shade, which makes a very serviceable background for photographing groups. All specimens should be kept in either the reception-room or the shop, and these should be frequently changed and never on any account allowed to show signs of dust or age.

### A Standard of Good Work.

All work sent out should be the best of which the photographer is capable, and must never show any sign of haste or carelessness. In addition to the ordinary and most usual style of photograph, which can be produced at a popular price, the photographer should make a specialty of one of the more expensive processes, such as platinotype or carbon, and be prepared to supply prints of the best quality in that process, for which, of course, good prices must be charged. A photographer who desires to keep his business up to date and yet cater for sitters who have not yet reached the heights of platinotype or carbon, or, it may be, cannot afford to pay the

prices which such processes demand, may still be educated to something better than the old-fashioned and highly glazed P.O.P., which some persons, even now, think the only correct medium. There are other papers and processes at the photographer's command which can be produced quite as cheaply, but which will considerably raise the status of his work. If sitters are only shown specimens of high-class work, and it is taken for granted that they want the best, they will accept it as the right thing, and the photographer may thus do a high-class business, though he may only have a small studio in a small country town, and at the same time cultivate the taste of his sitters for something better than they have hitherto been accustomed to. One very important item, also, to remember is—never to let any photographs ordered be in any way inferior to the specimens shown to the sitter at the time the order was given, for if this should happen the photographer's reputation will suffer considerably. Also, never try to pass off anything inferior to that ordered because it is less trouble, or takes less time, such as passing off photographs on gaslight papers for platinotypes; such a course is fatal to success. Bromide paper is a very good second to platinotype, and if care is used to get a good colour in development, followed by thorough fixing and washing, good work can be turned out in this process, and supplied at a considerably cheaper rate than platinotype. Gaslight papers can also be frequently used to advantage, but are not so permanent as bromide, and permanency of the prints is a very important factor in the professional photographer's work, as if a portrait soon fades, or shows signs of discoloration, his reputation is sure to suffer.

#### Rapid Printing of Bromides.

If much printing in bromide or gaslight papers has to be done some kind of printing-box should be made, so that a number can be printed from the same negative on one large sheet of paper, which does not involve the same risk of damaging the negative as when one is constantly opening and closing a printing frame and taking out one piece of paper and putting in another, often

probably with wet fingers. With a printing-box, after finding the correct exposure, one has only to expose as many times as the sheet will hold, and then, as the correct exposure has been obtained, it can be developed at once, taken from the developer at the same time, and transferred to the hypo, with the result that the whole are finished in a comparatively short time. The printing-box may be quite a simple affair, all that is required being a large box with an opening cut in the centre to hold the negative and room inside for a good light, either a gas bracket or a lamp. A strip of white paper is pasted along the top, marked off to the required size, the paper laid on the negative at one corner, and the two brought into contact by placing a suitable weight (such as the back of a printing frame) on top. The exposure is made by turning up the gas or by the removal of a sliding door or flap placed under the negative, and as each print is correctly exposed the paper is moved the right width of the picture along the mark on the white strip, and this is continued until the whole sheet has been exposed. The prints may be either in long bands or another set of guide marks can be provided and the paper moved up the length of the negative. This is the best and easiest way of printing bromides, and there is much less handling of the paper than when it is in small pieces.

During the summer months some kind of printing-out paper will probably be used, and care should be taken to select a good brand of collodio-chloride matt paper suitable for the platinum bath. This requires some little care in handling, and should be kept flat all the time in the various baths. Use large dishes and wash between each operation, and in the final washing each separate piece of paper should be handled several times, draining, washing, and re draining, but always kept flat.

By constant attention to details, both in connection with the studio and the practical part of the work, a photographer can not only keep up his business, but considerably improve it, and make good reputation for himself, not only in his own immediate neighbourhood, but probably beyond it.

J. PEAT MILLAR.

## THE POSING OF LADIES.

[Every photographer is bound to become very largely a law unto himself in the matter of making portraits of women, and it is doubtful if any set of rules, however good, can be of material benefit to the portraitist who is really bent on excelling in his work. However, the following notes, which appear in "The Professional and Amateur Photographer," contain a good deal which may be studied with profit by those less proficient in the art of portraiture.—EDS. "B.J."]

UNDOUBTEDLY, the source of greatest revenue to the photographer is the making of pictures for and of the ladies. He not only makes pictures of them, but through their influence makes pictures of others. It is through their influence we make the pictures of the children. If the having pictures made of the little tots was left to the man of the house, I very much fear we photographers would have to go out of business in short order. Mother wants some other mother or friend to see what a wonderful child she has, and of course the way to show off the good looks of the little one is to have her picture made. As a rule, we are all glad of the opportunity to make pictures of the ladies. I say as a rule, for of course we have an exception to this rule in our friend Pirie McDonald. It is much easier to pose the ladies than it is the gentlemen, for the reason that they possess a natural grace no man can or should possess. In addition to this natural grace, the dress aids one in securing graceful lines and curves. The dress of the gentleman is in straight lines, from the top of his head to his feet, so that it is almost impossible to produce curves. The best one can do as a general thing is to "break" these lines by having them take another direction, or introducing a second line, to break up the general direction of the first. In posing the ladies this is seldom necessary, as the outlines of the figure are curves, and the dress is usually so made that all of the inner lines are really curves. Where curves predominate, we seldom find a pose that is not pleasing. Often we hear the complaint made by an operator that his subjects are not what they should be for making pleasing positions of them. As a rule, this complaint is made by a man who does not really understand the art of posing.

**Pose by Suggestion.**  
The most pleasing effects in portraiture are those which the position suggests naturalness and not posing. When a picture shows a pose that gives the impression that the operator had some trouble in getting it, that picture lacks just that much being an artistic result. Naturalness is a total lack of posing. The most successful operators are those who pose their subjects so that they do not show they have been posed. Many an operator says he does not pose his subjects at all, simply allowing them to fall into a good, easy position of their own accord. This may sound well, but is not literally true, for that operator waits until they do fall into a good pose, or he moves his camera to a point where all the lines are broken up, or the lines really become curves. He may actually take hold of his subjects and turn or twist them about until the position he wants is secured, but by a sort of suggestion (not hypnotism) he aids his subjects in falling into a good pose, that after all he really does do a certain amount of posing. When one can manage his subjects in this way it is better than "handling" them under the light. If he wants the head turned a trifle from the light, or slightly "tilted" to one side, and secure the desired end by suggesting it to the subject, and she or he follows the suggestion, it will give a naturalness to the pose that is far ahead of the pose secured by actually taking hold of the subject's head, giving it a twist or a screw to get that effect. It is usually easier to suggest the pose to a lady. It is part of a lady's life to pose. She makes it her business to look pretty at all times, if possible. She does so, and is more willing to aid the operator in securing a certain pose than is the man. Every subject has some little individual



trick in posing, and the shrewd operator soon detects this little bit or trick; she may carry her head a little to one side, and the operator who understands his business will try to preserve this little individuality, not as a deformity, but rather he turns it into a "catchy" little tilt of the head, very attractive. One should never try to pose all of his subjects after a pattern. This is too often done. It is many have a preconceived pose, and try to mould all of his subjects into that pose. It is very much like the old-time monks' cell. When they had an applicant to join their monkish ranks, one of the old monks would go out and lay down in the sand and roll over. He would then have the applicant lay down in the hole he had made, and if the applicant was too short he was stretched to the mould; if he was too small, he was widened out until he fitted the mould—all individuality being buried. The operator should never fall into this deplorable habit, for he not only kills the individuality of his subject but his own as well.

### Some Maxims in Posing.

The posing chair used by the operator should be one that revolves, for often by simply having the subjects turn from side to side on the chair, all lines are altered, and what is from one point of view a very bad pose may from another point be a very attractive pose. A chair of this kind also saves much changing of the subject, and the operator can do his work in a more expeditious manner, thus avoiding all annoyance to the subject. There are, of course, a few general rules that may be applied to all subjects. It is to have the head turned slightly in an opposite direction to the body. For example, if the subject's body is turned slightly away from the light, the head should be turned back a trifle towards the light. This prevents a "sameness" or monotonous effect in the work. To have the head and body facing in the same general direction shows that the subject was having her picture taken. That is just the effect we do not want to see. If her body is turned towards the light her head should be turned back a trifle away from the light. The eyes should, as a rule, be turned a trifle further towards the head, and should always be turned in the same direction as the head is turned. Where the suggestions as to the pose of the body and head are followed we secure what has been called the "S" or the serpentine pose, which contains all the curves. This pose makes it possible for one to start a line at the top of the subject's head, and, running around the outline of the head on the left side down the face, under the chin, and outward on the left shoulder, forms the letter "S." Or we can start the line at the top of the head, and, running around the outline of the head on the right side of the face, under the chin, and outward on the right shoulder, form the letter "S" again, only this time it is "backwards." This is posing in curves, or forming "S" curves, as it is sometimes called. Where this plan of posing is followed, it will give all of the inner lines as curves, or "S" curves, in such a manner they will not attract too much attention for their weight. Not only should this plan be followed in posing the subject for "bust" work, but should be for three-quarter and full figures. To aid one in securing this effect in the full figure work it is best to have the lady subject set the foot nearest the camera forward, and throw her whole weight forward on that foot. This gives the long sweep to the dress, so much desired. It prevents the dress from falling about the limbs, and keeps up about the subject's feet.

FELIX RAYMER.

**INTERIOR COMPETITION.**—The Birmingham Photographic Competition announce results as follows: 1st prize of one guinea.—Rev. J. Clarke, Washfield Rectory, Tiverton, Devon. 2nd prize of £6.—Mr. H. Clarke, Stockport. 3rd prize of 5s.—Mr. P. W. Bushey, Herts. Twenty consolation prizes as follows: Mr. J. Ham, Redditch; Mr. J. Horton, Birmingham; Miss A. Stammers, Tewkesbury; Mr. Stimson, Portsmouth; Mr. G. T. on, Manchester; Mr. Duxbury, Blackburn; Mr. Cheetham, Birmingham; Mr. J. Maddison, Middlesbrough; Mr. Neville Aveling, Herts; Mr. S. Pugh, London; Mr. J. W. Whaley, Scarborough; Captain Bunbury, London; Mr. Gunton, Watford; Mr. Burnley; Mr. J. Thresh, Bridlington; Mr. M. S. Smith, London; Mr. J. Stott, Oldham; Mr. Ferguson, Birkenhead; Mr. J. R. Reading; Miss Howe, Norfolk.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents were received between April 21 and 25:—

**CINEMATOGRAPHS.**—No. 8,758. Improvements in machines for projecting cinematograph pictures. Vincent Edward Horsman, Cratfield, Grove Road, Wallasey, Cheshire.

**PLATES.**—No. 8,875. Improvements in or relating to photographic plates or films. Max Hansen, 256, Portland Road, South Norwood, London.

**COLOUR PHOTOGRAPHY.**—No. 8,949. Method for photographic and photo-mechanical reproducing three or more coloured pictures. Richard Merkel, 116, High Holborn, London.

**CINEMATOGRAPHS.**—No. 8,963. Improvements in or relating to means for displaying animated pictures or the like. Frederick De Mare, 72, Cannon Street, London.

**COLOUR-SCREEN.**—No. 9,044. Method of manufacturing colour-screens for photography. George Sydney Whitfield, St. Albans road, Watford, Herts.

### COMPLETE SPECIFICATIONS ACCEPTED.

These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

**CAMERAS.**—No. 14,916, 1907. The invention relates to a means for automatically fixing the struts which support the lens front of a folding camera in such a manner that their slots form a track parallel to the focal plane when the camera is opened, thereby ensuring perfect parallelism between the front and back of camera. This is done by means of a rocking plate pivoted to the lower part

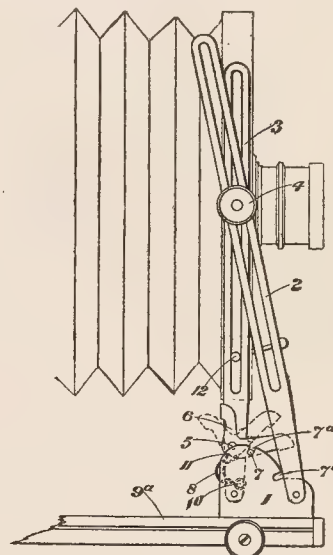


Fig. 1.

of one of the struts on each side of camera. The rocking plate is provided with a pin or lug which springs into a recess formed on the suitably curved edge of the bracket when the strut is raised to the upright position.

To obtain free movement of the struts the rocking plates are pressed out of gear with the brackets, when their springs throw them over the dead centre and retain them thus until they are pressed back either by the fingers or the action of closing the camera.

In the latter case they are returned to the operative position by projecting parts coming into contact with the baseboard. The

springs connected to the rocking plates operating on either side of the dead centre it follows that they are effective in holding the pins or lugs on the plates either in or out of gear with the recesses in the brackets. Suitable stops are provided to limit the movement of plates in both directions. The main advantage of this improvement is that free movement of the camera front can be obtained at will, and the upright position of the struts is ensured when the camera is set up.

To a bracket 1 fixed to the baseboard 9<sup>a</sup> of camera are pivotted struts 2 and 3, in the slots of which run the usual threaded pins that support the front, the pins being furnished with clamping heads 4. At 5 is pivotted a rocking plate 6 provided with a stud 7 which is caused to spring into the notches 7<sup>a</sup> or 7<sup>b</sup>, formed on the edge of the bracket by the thrust of the spring 8. When the rocking plates are pressed backwards, as shown by the dotted

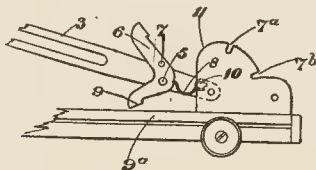


Fig. 2.

lines fig. 1, they are held out of gear with the notches, and the struts may freely swing in the backward or forward direction. In closing the camera, the rocking plates are thrown out of gear with the brackets, and as the struts arrive at a position approximately parallel with the base, as in fig. 2, the end 9 of rocking plate, making contact with the base 9<sup>a</sup>, causes the plates to spring to the operative position, the spring 8 operating on either side of the dead centre represented by a line projected from the stud 10, on which the spring turns, to the pivot 5 of rocking plate. When opening the camera the stud 7 strikes the rounded edge 11 of bracket and springs automatically into the notch 7<sup>a</sup> when the strut 3 arrives at the upright position. The bolt 12 on the lower part of the front board may then be placed in gear with the slot and the front raised or lowered in the usual manner.

When it is desired to extend the camera to its greatest limit the struts are swung forward so that they overhang the front edge of baseboard, the rocking plates being placed out of gear with the notches 7<sup>a</sup> and in gear with the notches 7<sup>b</sup>, in which position the struts are held at a uniform angle to each other on either side of camera and the front is adjusted to the upright position by swinging it on its supporting pins, the bolt 12 being out of action to allow of this movement. It will be understood that although only one bracket and its necessary fittings have been described, each camera would be furnished with two, one on each side of the baseboard. Herbert Holmes, Ensign Works, Clifford Road, Walthamstow; William Albert Edwards, Ulverston Road, Walthamstow; and Houghtons Ltd., 88-89, High Holborn, London, W.C.

The following complete specification, etc., is open to public inspection under the Patents Act, 1901:—

CINEMATOGRAPH.—No. 8,542. Uninflamable film for cinematograph and a process of manufacture of same. De Briaillies.

### New Trade Names.

TRIANTRENE.—No. 299,732. Chemical substances used in manufactures, photography, or philosophical research and anti-corrosives. Society of Chemical Industry in Basle, 151, Klybeckstrasse, Basle, Switzerland, chemical manufacturers. January 18, 1908.

WELDITE.—No. 300,479. Chemical substances used in manufactures, photography, or philosophical research and anti-corrosives. Thermit, Ltd., 27, St. Martin's Lane, Cannon Street, London, E.C., manufacturers. February 14, 1908.

SOLVOS.—No. 300,758. Chemical substances used in manufactures, photography, or philosophical research and anti-corrosives. Arthur Ross, Hotchkiss, and Co., Ltd., 1, Glengall Road, Old Kent Road, London, S.E., manufacturers. February 25, 1908.

MILBAR.—No. 301,360. Chemical substances used in manufactures, photography, or philosophical research and anti-corrosives. Beharell and Son, London Road, Barking, Essex, paint and varnish manufacturers. March 16, 1908.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Spirit Sensitisers for "Oil" Printing.

I should like (writes Mr. S. L. Coulthurst in "The Amateur Photographer") to recommend to those readers who are beginners in "oil" printing not to make up their own sensitisers, but to straightway buy a bottle ready prepared. With a bottle of "spirit sensitiser" the Autotype Company send out a coating brush; it is a good, old-fashioned brush, which may be new to many present-day pictorial workers; it is what is known as a "Blanchard's brush." It consists of a piece of glass, say half-plate size, cut down the centre, and making a piece  $\frac{1}{2}$  by 2 $\frac{1}{4}$ , or thereabouts; then a piece of swan's-down calico or fluffless flannelette is wrapped over it, and fastened to the glass by a rubber band. It is one of the best brushes that can be used. In place of the glass a piece of thick celluloid may be used, and this will give the brush somewhat of a spring.

Now, to coat my paper for "oil" work I go into the dark-room and take a clean quarter-plate dish which is quite dry, tilt it up one end, and pour into it a small quantity of the spirit sensitiser—say, about an ounce for four 12 by 10 pieces of paper; more or less solution should be used according to the quantity of paper that is to be coated.

Next take a piece of blotting-paper, and put this on a board piece of glass, or other such article, and with the aid of two glass-headed pins fasten the piece of paper to be sensitised at the top; now dip the "Blanchard's" brush into the quarter-plate dish with solution, and take up as much as the brush will carry, and go rapidly over the paper from top to bottom. The brush will coat it quite smooth and even. It will start drying almost before you can take it off your board. I have a large hinged box which line with blotting-paper top and bottom. When No. 1 piece is coated, I put it into the box, and go on with No. 2, and so on until all are ready; then I pin them, some on the lid of the box and some on the bottom of the box, and shut it up. The whole are dry in about ten minutes or less. Now, to make the paper almost "bone-dry," I take the box and put it in the oven top in the cooking-range, and the whole is then in fine condition for work. In damp weather paper dried in an ordinary room will have a limp feel unless the room be warm; if limp, it does not work so satisfactorily.

By employing the method of working above described I have, during the damp months of the year sensitised, dried, printed, and had the print in the washing water inside one hour.

## New Books.

THE ROYAL GARDENS, KEW.—An excellent illustrated guide to the gardens and plant houses of Kew has been issued by Mr. E. Wallis, photographer, 42, Gloucester Road, Kew Green, S.W., whose numerous photographs are added descriptive notes of the plants and gardens by Mr. Herman Spooner. Mr. Wallis' photographs provide an excellent souvenir of the Royal Botanic Gardens, and the book is certainly the best and most informative of the publications we know relating to Royal Kew. It is published in 1s. and 2s. 6d.

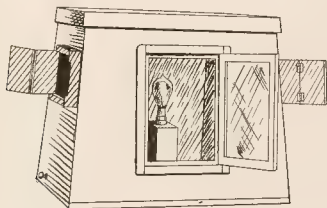
NOTICE OF REMOVAL.—MESSRS. E. Osborne and Co., the well-known firm of photographic mount manufacturers, have removed to new premises, known as "Red Lion Works," Warple Way, Acton, W., which address all communications should now be sent. Messrs. Osborne also advise us that samples of photographic mounts will be sent free to any professional photographer applying for same.



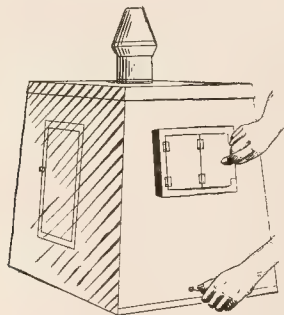
## New Apparatus, &c.

"Lightning" Bromide Printer. Made by J. E. Daniel, 35, Stockton Street, Manchester.

This piece of apparatus just introduced for the rapid production of slide and gaslight postcards has certain claims to notice which



by us giving a description, after close inspection of it, for the benefit of our readers. The printer consists of a chamber measuring 12 1/2 in. by 18 in. by about 20 in. high, which is fitted with a light-tight lid, and contains either an incandescent gas lamp or an incandescent electric light. The ends of the printer are provided with carriers for taking either a half-plate or quarter-plate negative. The carriers are placed against apertures in the end wall of the printer, and are each covered on the inside with a ruby window working in a pair of runners. The apparatus thus offers the advantage



allowing two workers to use it at once independently of each other, the exposure being made simply by lowering the ruby window, which is done by pulling out the knob, seen in the lower part of the drawings. The metal spring raises the window on the end of the carrier and finishes the exposure. It will thus be seen that the printer allows of the negative being seen at the time the exposure is being inserted, whilst the use of the apparatus by two workers using only one lamp is certainly an economical point in its favor. The prices of the "Lightning" printer, complete with lamp and gas fitting for attachment to any electric fitting, is 50s. For incandescent gas light the price is 52s. 6d.

## New Materials, &c.

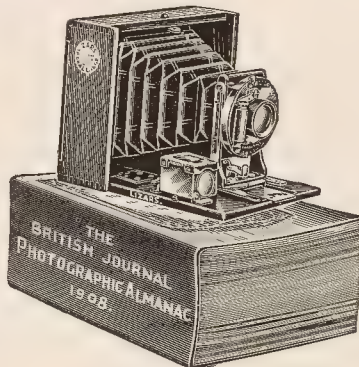
ENLARGING WORK.—Messrs. A. King and Co., The Studio, High Street, Littlehampton, send us examples of the cheaper class of enlarging done by them for professional photographers. While not intending to compete with the higher classes of enlarging, the prints are nevertheless of a kind which should certainly find a market with those supplying the lower middle classes. An example of the work will suffice to show Messrs. King's prices:—12 x 10 enlargement worked up, 2s., sepia toned 2s. 3d. Other grades of work are also offered, and are evidently turned out with care. The firm, which makes a specialty of prompt work, is also prepared to quote for finishing, etc., at clients' own

## CATALOGUES AND TRADE NOTICES.

THE CAMERA CONSTRUCTION COMPANY.—A new 1908 list of their stand cameras reaches us from this firm, and will be sent post free on application to Eagle Works, Durham Grove, Hackney, N.E. The company offers some remarkably good value in half-plate and other sets.

"YESTERDAY AND TO-DAY."—As interesting a piece of free photographic literature as any we can remember is that just issued by Messrs. Burroughs, Wellcome, and Co. under this title, "Yesterday" being the dark age before the arrival of "tabloid" compressed photographic chemicals, though presumably the suggestion of the cover, that one must go back to the Pharaohs to reach this period, is not one to be taken seriously. But what may be taken very seriously indeed is Messrs. Burroughs, Wellcome's aim, and, we can add, accomplishment, to provide the photographer with all his needed solutions in the minimum of space and the maximum of printing. We suppose no old-time lover of solution-mixing is with us still, but must confess to taking advantage of the "tabloid" method every now and then, whilst a good many of us are confirmed in it as a habit of which we have no desire to break ourselves. Both classes can hardly fail to read with interest the "Yesterday and To-day," which is offered them free from Snow Hill Buildings, E.C.

MR. LIZARS' PRICE LIST.—The 1908 edition of this list is a handsome volume of over 200 pages, describing a very representative assortment of the best appliances, many of them to be obtained only from Mr. Lizars. The section devoted to hints and formulae, which is a feature of the price list, bears evident signs of recent revision. It



gives the instructions for carbograph and oil printing, and there is a special chapter devoted to the Autochrome process. One novel idea we must mention—viz., the use made by Mr. Lizars of the "B.J. Almanac," to illustrate the small dimensions of one of his cameras, the "Challenge Dainty Pocket." The list itself is sent free on application to 101-107, Buchanan Street, Glasgow.

"THE PROFESSIONAL PHOTOGRAPHER."—No. 10, of Vol. I., of the Kodak Company's monthly professional organ contains articles on Velox and child portraiture, with particulars of the Kodak Company's new introductions in the way of backgrounds, mounts, and studio furniture.

VOIGTLANDER CAMERAS AND LENSES.—A list of their latest models of cameras reaches us from the firm of Voigtländer, 2, Charterhouse Street, E.C., and is to be warmly recommended to those about to purchase a hand camera, since it describes in detail with regard to practical conditions the various patterns of instruments manufactured by the famous Brunswick firm. We are glad to see Messrs. Voigtländer emphasise the 3 1/4 x 2 1/4 size of their excellent reflex, but this type of camera is, of course, not the only one they issue. The folding focal-plane, of both the strut and baseboard type, is represented

by two excellent cameras, while those who must have the smallest bulk can choose the double extension, yet highly portable "Alpine." The list also specifies the Voigtlander lenses, and should certainly be in the hands of any who require apparatus of the best workmanship.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

SATURDAY, MAY 9.

United Stereoscopic Society. Outing to Chislehurst.  
North Middlesex Photographic Society. Outing to Dartford.  
Handsworth Photographic Society. Excursion to Solihull.  
Hackney Photographic Society. Excursion to Kew Gardens.

MONDAY, MAY 11.

Gravesend and District Photographic Society. "Field Work." J. T. Dalladay.

TUESDAY, MAY 12.

Royal Photographic Society. Opening of a One-man Exhibition, by Furley Lewis, with an Address. A Demonstration of a New Process of Printing in Monochrome by Imbibition. Frank Donisthorpe.  
Manchester Amateur Photographic Society. "Individuality in Art." T. Longworth Cooper.  
Wimbledon and District Camera Club. "The Romantic in Landscape." F. C. Tilney.  
Hackney Photographic Society. "Oil Process." H. W. Lane, S. W. Morrison, Wm. Rawlings, and F. E. Roope.

WEDNESDAY, MAY 13.

Croydon Camera Club. "The Theory and Practice of Time Development." W. F. Slater.  
Central Technical College Photographic Society. "Toning Bromide Prints." R. Hudson-Spence.  
North Middlesex Photographic Society. "Ten Minutes' Papers." E. A. Morgan and H. W. Fincham.

THURSDAY, MAY 14.

Chelsea and District Photographic Society. Affiliated Competition Slides, 1908.  
Richmond Camera Club. General Meeting.  
Handsworth Photographic Society. "Wood-engraving and Electrotyping." A. E. Cope and A. A. Major.  
Southend-on-Sea Photographic Society. "Criticism of Exhibition Pictures." A. J. Conaaber.  
Hackney Photographic Society. Excursion to Leigh and Benfleet.  
London and Provincial Photographic Association. "Afar in the Fatherland." W. L. F. Wastell.

### ROYAL PHOTOGRAPHIC SOCIETY.

MEETING held May 5, the President, Mr. J. C. S. Mummery, in the chair.

Mr. Leslie Clift gave a lecture-demonstration of half-tone block-making, in the course of which he showed and explained the stages of making a half-tone photo-engraved plate. He laid particular stress on the cleaning of the glass for the wet collodion negative, recommending a weak solution of iodine in alcohol for the purpose. In the matter of originals, he put a good gaslight print first, next P.O.P. properly toned, not double toned, and last in favour carbon, gum and oil.

CROYDON CAMERA CLUB.—A lecture on "Photographic Shutters" was given by Mr. E. A. Salt last week, the theory underlying shutters in general and the characteristics of various forms being fully considered. From the nature of the subject it is impossible to epitomise it. The lecturer also exhibited an apparatus of his own design for testing the "speed" of shutters and recording their efficiency. Since its completion he had ascertained it could only be held to be a modification and simplification of an apparatus designed long ago by Sir William Abney. In the device shown the image of a slit illuminated by an incandescent gas mantle—the slit being at right angles to the travel of the shutter—is focussed by a lens on a dry plate, rotated horizontally at constant speed by means of a motor. A surface-silvered mirror at an angle of 45 degrees enables this to be done. The lens is mounted in a sliding tube for adjustment, and with the mirror, dry plate, and motor, which are in a light-tight box, form one part of the appliance; the carrier for the slit and illuminant forms the other. Lens front and slit both rise and centre to permit several diagrams on one plate, the highest speeds being taken at the circumference to obtain wider readings. A glass protractor (made by copying in the camera) is applied to the developed plate, and "speeds" read off direct in fractions of a second, the width of the image of the slit being allowed for. The number of degrees occupied by the opening and closing of the shutter and those comprised in the period of full aperture are also noted, and a diagram made therefrom on squared paper. The "efficiency" can then be

obtained by the simple expedient of counting the number of squares occupied by the diagram of the shutter tested as compared with the number of squares representing the hypothetical ideal shutter. The whole apparatus is of a portable nature, and the readings given by it are very clear and distinct. An animated discussion followed, at the close of which Dr. Mees, in proposing a vote of thanks, said Mr. Salt had dealt with an important subject in a very thorough manner. Very little in this country had been written about the theory of shutters, and many of the points raised were most interesting. He trusted the lecturer would publish the paper.

WORTHING CAMERA CLUB.—The annual meeting of the Worthing Camera Club was held recently at the Music Studio, Liverpool Terrace, the president (Dr. W. Ayton Gostling) presiding over a fair attendance of members. The committee's report stated that the members numbered 74, against 68 last year. The accounts revealed a balance in hand of £18 17s. 6d., and the assets of the club were valued at £25 10s. Dr. Gostling was re-elected president, and Mr. F. Hinds and Mr. T. H. Crouch were added to the vice-presidents. Mr. Edmund F. H. Crouch was re-elected hon. secretary, Mr. R. Long hon. treasurer, and Mr. L. Knight was appointed assistant hon. secretary. Messrs. A. C. Osborn, H. Swain, and W. H. Steel resigned their seats on the committee, and Messrs. P. Twine, R. J. MacDermott, and L. Knight were appointed to fill the vacancies.

LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.—Meeting held April 30, Mr. O. S. Dawson in the chair. Mr. J. T. Butterfield gave a lecture on "Printing from Gelatine Surfaces"—viz., collotype—a subject in which he is the instructor at the L.C.C. School of Photo-engraving and Lithography, Bolt Court, E.C. He briefly described the process as follows:—

Two pieces of plate, or patent plate-glass, not less than  $\frac{1}{8}$  in. thick, are ground together with fine or flour emery powder (Oakley's "Wellington" knife polish is as good as anything), and a little water until an even matt surface is obtained. The surface of the glass is then coated with a preparation of beer and silicate of potash or soda and a few grains of tannic acid. This forms the substratum. When dry the plate is rinsed with filtered water and again dried and then placed in a drying oven on levelling screws, and heated to a temperature of from 100 to 120 deg. Fahr.; it is then coated with the sensitising solution, which consists of gelatine and a bichromate salt, and the temperature is raised to 140 deg. Fahr. When the plates are dry they are placed in the printing frame under a reversed negative and exposed to light.

After exposure the plate is developed in cold water, every particle of the bichromate salt is washed out of the film, and the plates are then stood in a drying rack and allowed to dry for about twenty-four hours.

At this point the lecturer passed round specimens of the glass, before and after grinding, coated with the beer solution, sensitised but before exposure, after exposure, exposed and developed, after damping and rolling up with fatty ink and ready for proofing.

Before printing, but after development, he continued, it was necessary to soak the plate in a mixture of water and glycerine for a short time. This is commonly termed etching the plate, but in reality it is simply swelling the gelatine, so that those portions struck by light will repel the greasy ink and allow only those parts that have been exposed to take the ink up.

The back is then cleaned to remove any stray particle of gelatine, the film blotted off with blotting-paper, and fixed to the bed of the printing press. A good nap roller, charged with stiff collotype ink, was next rolled over the plate, the screws and pressure bar adjusted, and a proof taken. Specimen prints were passed round, and was also in some cases the original drawing.

As to cost, the lecturer said that the glass worked out at about 6d. per 1,000 inches; further, the plates could be cleaned off and used again. The most expensive piece of apparatus required was the drying oven. The process itself was simple, but many failed owing to the surroundings not being suitable.

A good oven could be made by the amateur for his own use by adding an iron bottom to a square box, making two levelling bars with three screws, and heating underneath by the aid of gas rings, but hot-water pipes were the best for heating if they could be obtained, being more even in their action. Printing could be done on almost any press; in fact, the office copying press would, with care, turn out very fair results.



specimens of three-colour work by collogtype were passed round much admired, and in reply to a question as to which was the best press for the work the lecturer said that the scraper press was to be recommended.

The chairman said that it was stated that there was trouble in getting an even run of, say, 50 to 100 pulls, and Mr. Butterfield said that it all depended upon the printer; a good careful worker would not have the least trouble in getting even work.

Haddon asked what constituent of the beer did the trick in the first coating; all beers were not alike. Again, in regard to the use of calcium chloride, would not calcium chloride do for this in place of the oven, and, however carefully worked, would give a variation? The lecturer, in reply, said that he thought it was glucose in the beer that was the thing. Drying by calcium could be done, but it took a longer time and gave a coarser grain; in fact, it was a case of the higher temperature the finer the grain.

Haddon said: Why not use the glucose in place of the beer, as was this that was wanted? He also asked if it would be possible to combine heat and calcium together, so as to get exactly the result desired.

Asked by Mr. Burgess as to the number of prints that it was possible to obtain from one plate, the lecturer said that his highest was one of 4,000, but the life of a plate was generally reckoned at 1,000.

A vote of thanks brought the meeting to a close.

## Commercial & Legal Intelligence.

**ENLARGEMENT CASE.**—At the Scarborough County Court last before his Honour, Judge Dodd, K.C., Mr. Hart, solicitor, opened a case which came before the last Court in which the Judge gave a verdict for £6 to Mrs. Harriet Kemp, a widow, Durham, who sued the Great Britain Art Company, photographers, Grosvenor Street, All Saints', Manchester. Mr. Hart, appeared for the defendants, said that his Honour would remember that this was an action in which the plaintiff claimed £6 for the return of photographs, and damages for non-delivery of an enlargement. His Honour: Yes, I remember; it was the only photograph she had of her late husband.—Continuing, Mr. Hart said the representative of the defendant company did not arrive at Court until after the case had been heard, and his Honour then agreed that it should be opened at the next court if the £6 was paid into court that day. His Honour: I had thought that the whole thing was a fraud, and the representative made a statement which, if true, would show that was not so; and I thought it only fair that he should have an opportunity of showing me that the estimate formed on one was an improper one, and there should be a fresh trial.

Mr. Hart: We paid the full amount (£6) into court. The object of the defendant company in being present that day, continued Mr. Hart, was to give his Honour an opportunity of putting the matter to rest, for there was no doubt that the observations of his Honour at the last court were calculated to do the defendants harm. They were a firm in a very large way of business, and did many thousands of enlargements every year. Unfortunately the plaintiff's photographs and enlargements were by mistake sent on to Hull, and to every effort, it was not until after the last court that they were found. They have now been delivered to the plaintiff, who got everything she wanted. Mr. Hart was sure the Judge would be very first to allow him to put before the court evidence to show that, instead of being a fraudulent company, they were a perfectly sound and honest undertaking.

His Honour said he was glad to have heard what had been said, and that he gave the opportunity for the case to be reopened. They satisfied the good lady about the photographs, and now the case was closed. What the lady wanted was her dead husband's photographs back, and she had got it.

**"ART COMPANY'S" BANKRUPTCY.**—In the Salford Bankruptcy Court, Albert Fryer, carrying on business under the style of The Salford Zither Company, A. Fryer and Co., and the Fine Art Company, described as a dealer in photographs, has been granted a discharge, suspended for three years. Debtor carried on business

at Eccles, Chester, Manchester, Preston, and Blackburn. The reasons given in the order for not granting an absolute order of discharge were that the bankrupt's assets were not of a value equal to 10s. in the £; that he had omitted to keep proper books of account; that he had contracted debts without having at the time a reasonable ground of expectation of being able to pay them; and that he had contributed to his deficiency by gambling.

**LEGAL NOTICE.**—The trustee under the deed of assignment, executed by William Hallas, photographer and framer, 73, Market Street, Stalybridge, announces that claims against the estate should be sent by May 30 to Mr. Harry Thorp (of Heap, Son, and Norman), 129, Stamford Street, Stalybridge, accountant.

**PARTNERSHIPS.**—The partnership between John James Askew and Henry Richard Dodd, photographers, carrying on business at 40 and 42, Broad Street, Hanley, Staffs, as Askew and Dodd, has been dissolved by mutual consent, and all debts will be received or paid by J. J. Askew, who will continue the business in his own name.

The partnership between Samuel Wilson Bird Jack, and David Hay Jack, photographic artists, of 19, Lowther Street, Carlisle, has been dissolved by mutual consent, and all debts will be received or paid by S. W. B. Jack, who will continue to carry on the business.

### NEW COMPANIES.

**NAYLOR AND CO., LIMITED.**—Registered April 16. Capital £1,500, in £1 shares (500 preference). Objects: To acquire the business and assets of T. C. Naylor, of 24, Denmark Street, W.C., and 4, Roscoe Street, E.C., and to carry on the business of manufacturers of photographic apparatus, machine-made boxes, process studio and scientific work, etc. No initial public issue. Registered office, 24, Denmark Street, Charing Cross Road, W.C.

**WORLD'S GRAPHIC PRESS.**—Capital, £3,000 (£1).—To take over the business of a photographer of topical and other events and vendor of photographs to the press of the world carried on by F. da Paul Romani at 44-46, Fetter Lane, E.C., as the "World's Graphic Press," and to adopt an agreement with the said vendor and C. C. Barker for the acquisition of the inventions relating to therein.

## News and Notes.

**PERSONAL.**—We regret to announce that Prof. G. Lippmann is seriously ill with pneumonia, following on an attack of influenza.

**"KINEMATOGRAPHY."**—A comprehensive treatise on the cinematograph under this title is in course of preparation by Mr. Theodore Brown. It is to be issued at 7s. 6d., and orders for it may already be sent to the author at 22, Gresham Road, Brixton, S.W.

**RECEPTION-ROOM PROBLEMS, No. 1.**—She asked him if he was the photographer. He said he was.

She asked him if he took children's pictures. He said he did.

She asked him how much he charged. He said: "Four dollars a dozen."

"Then I'll have to go somewhere else," she replied; "I only have eleven."

**THE KODAK IN SOUTH AFRICA.**—During the past few months representatives of Kodak, Limited, have been busily engaged in South Africa bringing home to the people of the Cape, Natal, the Transvaal, the Orange River Colony, and northwards as far as the Victoria Falls the features of the Kodak system, which have made photography at once so easy and so fascinating. As may be supposed, the Kodak Company relied very largely upon public exhibitions of a splendid collection of enlargements as the centre of attraction, supplementing these with frequent demonstrations of the simple and commendable daylight system of development made possible by the Kodak developing machines. All the pictures shown were enlarged upon Kodak bromide papers from Kodak N.C. film negatives, which illustrated in a conclusive way the efficiency and the possibilities of the Kodak cameras, from the 5s. Brownie to the fully-equipped folding pocket and cartridge Kodaks.

The South African papers report at length upon the keen interest which these exhibitions have excited amongst amateur and pro-

fessional workers, such a fine collection of photographic pictures having never been seen in this part of the world. The exhibitions and demonstrations have been speaking testimony to the good qualities which we have learned to associate with Kodak manufactures, and deservedly attracted much attention, putting in a new light to a large number a process of picture-making hitherto associated with hours spent in the dark-room, but now carried out entirely in daylight. There should follow a great increase in photographic activity in South Africa, where the opportunities of picture-making are many and varied, and the Kodak Company may expect, and will doubtless experience, a large extension of business as the result of their enterprise.

REPRODUCTIONS OF ART MASTERPIECES.—With the immense number of reproductions of pictures in the three-colour process which have flooded the book-shops and picture-framers recently, the almost total neglect of lithography for reproductive purposes is often remarked. Messrs. Arnold Fairbairns and Co., Ltd., believe that a popular appreciation of such work exists, however, and are preparing to meet it with a series of lithographic reproductions of great masterpieces. The first subject, Burne-Jones' "Golden Stairs," will be published on the 11th inst., in a size that fits it for framing, being one-eighth of the original. This choice of subject is particularly interesting, as the picture will be shown at the Franco-British Exhibition, its first appearance in a public gallery since the Burne-Jones memorial exhibition at the New Gallery. Other subjects are to follow, each in a separate portfolio at one shilling net, the series being known as "Masterpieces."

THE PHOTOGRAPHIC SURVEY AND RECORD OF SURREY has just issued its sixth annual report, which shows that good progress has been made during the past year in the many branches of "record" work undertaken by the association. At the annual meeting Sir Benjamin Stone gave an address containing much useful and helpful information for all interested in this branch of photographic work. Any desirous of becoming members of such an association should communicate with the hon. secretary, Mr. Frank F. Wood, 11, Milton Road, Wallington, who will furnish all needful information.

PHOTOGRAPHIC RECORD AND SURVEY OF SUSSEX.—This association, which has recently been reorganised, has just issued its annual report for 1907, the balance sheet of which shows a surplus on the right side of the ledger. Although the membership roll has considerably increased there are doubtless many who do not know of the association, and these would do well to communicate with the hon. secretary, Mr. L. A. Gilbert, Public Library, Brighton, who will gladly forward all information as to the aims and objects of the society.

## Correspondence.

\*.\* Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

\*.\* We do not undertake responsibility for the opinions expressed by our correspondents.

### THE PORTRAIT POSTCARD

To the Editors.

Gentlemen,—After 40 years' experience I have come to the conclusion that photographers as a class are commercially the most short-sighted men in business. They are entirely without "esprit de corps," and deficient in pluck and backbone. Twenty years ago photography was a pleasant profession, and fair incomes were made. The British public was quite content, and paid well for good work. Then—without any demand on the part of the British public—the average photographer commenced a pleasing game of "beggar my neighbouring brother artist," cutting prices, and degrading a decent profession to a struggle for existence. As regards the postcard visitation, the solution is very simple. Let every man who charges 6s. or three guineas for a dozen cabinets steadily refuse to take less for portrait postcards. His clients will not object, and if some do, let them go. As for those who do 2s. 6d. or 3s. a dozen work, they will benefit the manufacturers for a short time; but will work hard to impoverish themselves in so doing. If they would only combine to keep up a fair standard price!—but this is past praying for.

There has never been any etiquette in the conduct of the majority of studios, and the result is, photography is no longer a career that I should advise any ambitious young man to go in for. It has been spoiled by the very men whose interest it was to enable them to make a decent living.—Yours truly,

W. I. H.  
14, Moor Mead Road, St. Margaret's, Twickenham.

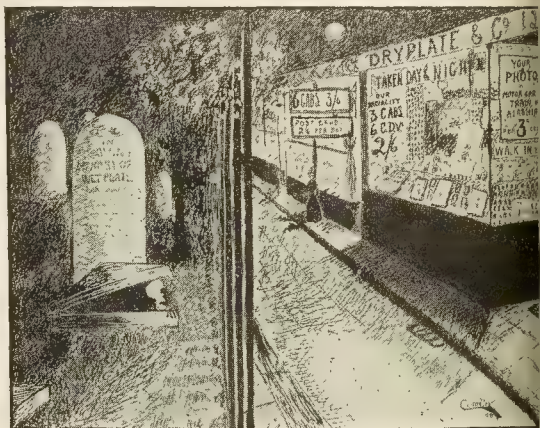
To the Editors.

Gentlemen,—I do not know that "Fair Trade and Fair Prices" last effusion calls for any reply from me. I can very well see he is not the kind of person to be dethroned from his pedestal of righteousness. Anyway, I do not feel inclined to satisfy his morbid curiosity as to my prices or system of working.

His dogmatic assertions as to "Arch Fiend's" methods and chimerical views in general of the outdoor worker are nothing but the outcome of "swelled head," which he is acutely suffering from. Quite one-half of the "velveted" photographers have no idea whatever of our manner or mode of conducting business. That occasional "shark" is rightly brought to book no more condemn the whole outdoor workers than a bad penny spoils the Mint. "The solitary champion" of the "touters," I am not afraid to assert that we look with supreme contempt on "F.T. and F.P." and all of his kidney; and our indifference to their "dog-in-the-manger" attitude is only equalled by our determination to have "our" share of the "providence."—Yours, etc., ARCH FIEND

To the Editors.

Gentlemen,—Referring to the letters of late on the "Portrait Postcard," I do not wish to weary you with a long letter, but, summing things up, I think that if photographers of the past could but see the present "prices" and "style" of some "sweaters," would



A Spectre of the Past: "Alas!!! I am better off where I am."

not make them "turn" in their grave? What shall we see twenty years hence? One dozen photo-postcards of yourself given with every ½ lb. of tea. Autochrome stamp photos, 3d. per dozen, etc.—Yours faithfully,

A. CHANDLER  
"Readwood," Belgrave Road, Colwyn Bay, N. Wales.  
May 1, 1908.

To the Editors.

Gentlemen,—I think we have to look higher than the postcard fiend for the real culprit in the matter of the postcard nuisance. If the better-class men begin turning out good negatives, well touched, well posed and printed, full size (no margins) they will only themselves to thank if the postcards supersede cabinets. People do not buy a 6d. article for 3d. in any trade, and are quite capable of grasping this fact if pointed out. In my practice I always state this and tell a "postcard" sitter that it is "one position and no proofs," and that what are wanted must be ordered within a week of receipt of order, as the negatives are not stored. I neither varnish, retouch (or very slightly), nor name the negative.



s take an ordinary pose (no heads) small, and print with and I find cabinet work does not suffer.

inary cheap man does not take elaborate poses or large retouch, etc., and this is the man we have to fight. But 1-class man enters the lists—well, God help photography. Faithfully,  
PYRO AND SODA.

discussion is now closed. We refer to the correspondence on another page.—Eds., "B. J."]

## BLUENESS WITH AUTOCHROMES.

To the Editors.

en,—While reading through a contemporary periodical a o ago I came across a letter by Mr. H. T. Malby on the ect, in which he attributes the erroneous coloration to presence of white light in the dark-room during develop- is Autochrome plates, which entered through a defective and also beneath the door. Possibly my experiences relate- ness, or, as I perhaps may term it, blue fog, may be . Blue fog I have certainly obtained, but invariably aladjustment of the compensating screen, but never from which seems to have troubled Mr. Malby. He seems at fogging from blue light from the emulsion side is of blue fog, and this I most certainly question, for, in where my exposure has been in my opinion insufficient, ore the termination of the first development, diluted my with an equal quantity of water and then examined the ite light, and thus produced a superficial fog. This fog, or age, so to speak, of the white light has been entirely y solution C, and this has given me an appreciably more transparency at the finish, with very questionable deta- the colour rendering.

produced by white light acting *via* the starch grain screen s persist as a blue coloration, and when this occurs it hat its abolition seems hopeless. May I therefore suggest Malby possibly fogged his plates *via* the screen when dark slide, or perhaps permitted his screen to become through inadvertence during exposure?

also have obtained this blue fog if he develops his Auto- a glass dish if daylight enters his dark-room beneath the

s me that time development in his dark-room without n a porcelain dish would avoid this fog, even if daylight htly beneath the door, always supposing he is careful in dark slides and adjusting his screen.—Yours, etc.,

H. G. DRAKE-BROCKMAN, M.R.C.S.

ty Borough Asylum, Middlesbrough.  
1908.

k our correspondent has misread Mr. Malby's letter, not find in it any suggestion that light on the emul- n produce blue fog. Light entering under a door could e the glass side of the plate during transference either e slide or from slide to developing dish.—Eds. "B. J."]

ISTS' EXHIBITION.—Promoted by our enterprising con- "The British and Colonial Druggist," there is now open icultural Hall, Vincent Square, Westminster, S.W., an of the chemists' trades which has now become an annual event. Firms, large and small, in the chemical articles trade are represented, whilst the photographic chemist's business is represented by two firms only— ickyer, of Deptford, who shows a large variety of his parations, and Messrs. Theobald and Co., of Hounslow, all we saw one novelty in the shape of a very neat even-fold tripod which closes quite flat for travelling, in brass, 15s. 6d.; in aluminium, 23s. The stand hen closed, 11½ by 1½ by ¾ in., and opens to 49 in. Its brass is 22 oz.; in aluminium, 12 oz. The exhibition n until 10 p.m. to-night (Friday), and is worth a visit the object lesson in attractive stalls, and the tuneful "Bleu" Viennese orchestra, which, in the occasional or refreshment, is instantly replaced by a "White quartette.

## Answers to Correspondents.

\*<sup>a</sup> All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.

\*<sup>a</sup> Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.

\*<sup>a</sup> Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., 24, Wellington Street, Strand, London, W.C.

\*<sup>a</sup> For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.

### PHOTOGRAPHS REGISTERED:—

F. J. Cawsey, 155, Chatsworth Road, Morecambe, Lancs. Photograph of H.M.S. "Akbar" Laying in Morecambe Harbour

F. G. Steggle, Stanley House, Midsomer Norton, near Bath. Photograph of Mr. and Mrs. R. Jones and their Ten Children.

A. Ross, Photographer, Evan Street, Stonehaven, N.B. Photograph of Capt. the Hon. A. C. Murray, M.P. for Kincardineshire.

J. Davison, 37, Poulton Road, Seacombe, Cheshire. Photograph of Harrowby (Seacombe) Amateur Football Club.

H. D. Wootton, 63, Albany Road, Redruth, Cornwall. Photograph of Clinton Road, Redruth. Photograph of Fore Street, R. druth.

CHEMICALS.—Will you kindly give me a formula for diamidophenol suitable for plates or paper? Also can you tell me what liquid bisulphite is?—HERBERT S. P. COSTER.

Potass. metabisulphite, 6 oz.; distilled water, 20 oz.; diamidophenol, 2 ozs. Dissolve and add gradually caustic soda or potash to dissolve the precipitate first formed. Dilute for use with 10 to 30 times the volume of water. The bisulphite is a strong solution.

PINATYPES FROM AUTOCHROMES.—Can quite satisfactory reproductions be obtained from Autochromes by means of pinatype? If so, could you inform me how to make the three-colour screens and approximate exposure ratio by daylight, or preferably incandescent gas, using Wratten's panchromatic plates for the negatives.—H. C. MILMAN.

See the article by M. Didier in the "Colour Photography" Supplement of last week.

COPYRIGHT.—If I purchase some local view postcards from a shop and they have not got "copyright" on them, am I allowed to make a negative of them, print same, and offer them for sale to shopkeepers, or must I take my own negative first?—AN OLD SUBSCRIBER.

Dear Old Subscriber. You cannot have read the repeated replies to queries such as this, or you would know that you have no more right to do what you suggest than you have to steal penny loaves from the baker's barrow. It is not necessary that copyright prints be so marked.

YOUNG PROFESSIONAL.—Bride and bridegroom in centre, with their respective parents beyond each; chief bridesmaid and "best" man to rear of bride and bridegroom respectively, with other bridesmaids grouped on either side. The guests come in at the back.

WOODEN TRAY.—I am making some large dishes for developing bromides, sides to be of wood, and glass bottoms. Can you tell me the best way to fix the glass in? Also what treatment the wood requires to make it impervious to the various chemicals used?—H. M. K.

Unless the wooden vessels are well made, and of well-seasoned wood, it will be next to impossible to render them permanently watertight. The bottom of the tray should be deeply rabbeted to take the glass which should be bedded in with a mixture of white and red lead. Then a narrow strip of wood is bradded on to further secure the glass, any intervening space being filled in with the lead mixture. Then asphaltum and beeswax, in about

equal parts, is melted and flowed over the inside, and the surface made even with a spatula, such as is used for spreading plasters. Several coatings of shellac varnish may be used in place of the asphaltum mixture, but the latter is better. We prefer wooden bottoms in preference to glass for wooden trays.

**PRINTS ON CELLULOID.**—1. Can you give me the outline of process used by celluloid printers known as "permanent photographic process"? 2. Can you suggest the best process for obtaining a black line reproduction (positive from positive) of a drawing (on paper) on celluloid. It is a large piece 33 in. x 9 in., so I want to get the cheapest possible process (without silver), and, if possible, without collodion or gelatine, that will give a good dense permanent black that will not rub off. The celluloid has a matt surface.—**CELLULOID.**

1. We cannot tell you what is the process referred to, but we imagine it is a carbon method. 2. Carbon, although a gelatine process, is certainly the most suitable for the purpose. We should advise you to apply to a maker of carbon tissues, or to one or other of the firms making a specialty of carbon printing.

**SULPHITE.**—1. Please say if enclosed sample of soda sulphite is all right for making up No. 2 pyro soda developer, as follows:—

Soda sulphite .....	2 oz.
Soda carbonate .....	2 oz.
Water .....	20 oz.

I ordered 4 lb., and this is the kind sent. 2. Is it as good as the "lump" thing? 3. Also please say if enclosed will keep as well as if in the larger lumps. 4. What is the proper term to use in ordering soda sulphite, etc., so as to get it in pieces about the size of peas?—**J. A. C.**

1, 2, and 3. These questions can only be answered by trying the sulphite. Simple inspection of the sample will give no information. The appearance of the sample is unusual, but its quality and keeping power can only be determined by using it for a considerable time. 4. The size of the crystals varies greatly with different makes. If you want good sulphite, ask for that made by some special manufacturer of repute.

**MOUNTING.**—In your issue of March 13 last you gave an account of "An Improved System of Mounting" (written by Mr. Nelson K. Cherrill in the "Photographic Monthly"). Could you give me the proportion of shellac and methylated spirits used to make the shellac varnish; also the proportion of acetone and alcohol to form the mixture to rub over the surface of the mount or paper to which the print is to be attached?—**W. G. WARD.**

You had better get the March issue of "The Photographic Monthly," in which the full article appears. Publishers, Dawbarn and Ward, 6, Farringdon Avenue, E.C.

**SELF-TONING.**—(1) As permanent. (2) Not much. (3) We certainly think so. Similar prints made on plain paper years ago have proved permanent.

**NERO and Others.**—In our next.

**N. S.**—Most probably the photograph is the copyright of the photographer, in which case you expose yourself to legal action by making a copy.

**E. A. THORNLEY.**—Marion and Co. 6s. 6d. a pair.

**VARIOUS.**—1. The "Journal" for 1905 gives on page 712 a list of comparative plate speeds: H. and D. 200 = Watkins 133; "Journal," 1908, page 945: H. and D. 200 = Watkin 294. This latter corresponds closely with the Wratten cards. I use a Watkin meter, and sometimes use plate for which only the H. and D. numbers are given. How can I know to which Watkin number this is equivalent? 2. Give quantity of acetone sulphite to each or of hypo for acid fixing bath. 3. Will proportion of acetone vary for different strength of fixing bath? I use 4 oz. of hypo to 20 oz. water for plates and 2 oz. hypo to 20 oz. for prints. 4. How long should prints or plates remain in these baths when using acetone sulphite?—**J. W. G.**

1. A more recent table in the "Almanac" for 1908 gives the rules for conversion as follows:—To convert H. and D. into Watkins, multiply the H. and D. number by 50 and divide by 34. Practically the Watkins No. is  $1\frac{1}{2}$  times H. and D. This has been worked out by Dr. Mees for Wratten plates, but would probably apply with fair accuracy to other plates. 2. The exact

quantity is not important—say, 50 grains. 3. The given in 3, that is,  $\frac{1}{2}$  the quantity of the hypo, may 4. A little longer than usual.

**TAX ON VEHICLE.**—I am located in a small country town will see by the heading of this letter, and a great port trade is outdoor photography, taking gentlemen's houses, weddings, and such like, groups, etc. Sometimes I have to do a dozen miles to execute an order. Two years ago I started a trap, a small wagonette, as I thought it would prove less than having to hire one or pay railway fare, with the idea that I could now and then take the wife and children for a drive. Now I find that the income tax people have taxed my vehicle. On my complaining to the collector he tells me I have no power to take it off, and that I must appeal to the Board of Inland Revenue. How am I to act, as I was told before purchasing the vehicle there was no duty on one that was used for business purposes?—**TAX.**

What you were told is quite correct, provided the vehicle is used wholly and solely for business purposes. But according to the statement, you employ yours for pleasure as well, then the duty is rightly imposed, and we do not at all think you are out of paying it, even if you think it advisable to appeal.

**AMATEUR.**—If the chloride of gold, when dissolved, became discoloured, it is obvious that the "distilled" water was not pure. The distilled water sold by druggists is often not so pure as it should be for photographic purposes. It is quite possible, that the water was not at fault. The solution may have been made in a bottle that was not chemically clean, in which case the result would be the same as if the water were impure. You probably know which of the two was the source of the trouble.

**THE CARBON PROCESS FOR PROFESSIONALS.**—Messrs. Illingworth and Co., in accordance with their announcement on another page, are drawing the special attention of the professional photographer to the carbon process, all the materials they have for several years manufactured, of excellent quality, may be pointed out that even those studios which do not possess their own carbon work can be well served by the firms working carbon, among other processes, for professional photographers by others who do carbon printing exclusively.

**MUNICIPAL PHOTOGRAPHER.**—Mr. G. Carpenter, photographer of the Wimbledon Town Council, has this week had his salary increased from £98 to £100 per annum.

**THE OIL PROCESS.**—Mr. Evershed will give a demonstration of this process, to which he has devoted quite special attention, at the meeting of the South London Photographic Society, on Monday, May 11th, at 8 p.m. The meeting, to which visitors are invited, is held at the South Art Gallery, Peckham Road, S.E. Admission tickets will be 2s. 6d. by Mr. H. Creighton Beckett, 44, Edith Road, Peckham, S.E.

**THE "RAJAR" CAMERA,** offered monthly by Messrs. R. and J. Mobberley, Cheshire, for the best print on "Rajar" paper. It has been awarded to Mr. F. Bever, Watford, this print has been judged the best received during April. The paper on which the print was made was purchased from Messrs. The Postal Printing Company, Rotherham.

**\*\* NOTICE TO ADVERTISERS.**—Blocks and copy are required to be approved by the Publishers, and advertisements must be absolutely without condition, expressed or implied, as to what portion of the paper.

## The British Journal of Photography

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## SUMMARY.

Accompanying the present instalment of the articles by Mr. Drinkwater Butt we present with this issue a set of drawings of a complete photographic establishment on a town site.

To-day is the last day for entries for the exhibition of the Society of Colour Photographers.

An exhibition of Mr. Furley Lewis' portraiture is now open at the Royal Photographic Society and will be reviewed next week.

"What to do with our girls." An exhibition of crafts suggested suitable for feminine employment is now being held in London. (P. 374.)

The ozobrome-oil process and progress in time development appear our Anallecta column. (P. 382.)

A note on the fitness of detail in small and large pictures respectively will be found on page 374.

Two illustrated articles deal with the new studio of Mr. F. A. Ainslie, in Bond Street, and with Messrs. Griffin's new professional department. (P. 380.)

A description of some methods of flashlight practised by American professionals has been published. (P. 376.)

Mr. W. Michell contributes some practical notes on burnishing, bossing, and plate-marking. (P. 375.)

Some editorial notes on the practice of photography in hot countries appear on page 374.

Mr. W. T. Wilkinson, at the L. and P., describes a method of producing reversed negatives direct. (P. 385.)

Extensive use is being made in Germany of picture postcards for educational purposes. (P. 385.)

According to a Consular report, a brisk trade among amateurs and professionals is being done in Turkey. (P. 381.)

A method of ceramic photography and improvements in cinematographs are among the patents of the week.

## EX CATHEDRA.

### Radiography in Medicine.

A new application of radiography in the service of medicine and jurisprudence has just been mentioned in Paris. Some time back it was announced that in cases of suspended animation, where it was uncertain if death had taken place or not, all doubt could be resolved by radiography, a slight pulsation of the internal organs being registered on the sensitive plate. Now, following on researches on the radiography of the foetus, M. Vaillant states that the difficult problem of deciding whether a child is still-born or not can be settled in a similar fashion. If the radiograph shows only the elements of the skeleton, with no impression of the stomach and viscera, the child has not breathed. If, however, breathing has taken place, even for some minutes, the stomach gives a stomachic "trace," the more distinct the longer the period of respiration has been.

\* \* \*

### The Colour Exhibition.

At the time of writing, two days before the last day for exhibits to reach Wellington Street for the forthcoming exhibition of the Society of Colour Photographers, we would again draw attention to the final arrangements for the display of prints and transparencies in processes of colour photography. The means for illuminating Autochrome and other transparencies provided last September at the British Journal Offices were acknowledged to be the best provided at a public exhibition. They have been further improved for the forthcoming show, and though it is doubtful whether all the work sent in can be shown, there is no doubt that the space at disposal will be filled with a remarkably fine selection of Autochrome work. Repeating previous announcements, pictures and transparencies should be sent addressed to Mr. Henry J. Comley, 24, Wellington Street, Strand, W.C., to arrive some time during to-day, May 15.

\* \* \*

### Distortion with Lenses.

A writer in the "Photographic Monthly" gives some reproductions from test charts to illustrate the comparative effects of an anastigmat, R.R. lens, and a single achromatic lens. The results are very instructive, as they show clearly the defects of the R.R. lens as regards distortion, and prove the fallacy of the idea that its symmetrical construction gives results free from distortion. It has often been explained that the symmetrical construction only obviates distortion when the lens is used to copy on a scale of full size, and that distortion exists when the lens is used on distant objects. In the cases illustrated the lens must have been fairly near the object, yet cushion distortion is very obvious with the R.R., though the anastigmat shows no signs of it. Probably the

fact that the distortion given by the R.R. is of the cushion variety is the reason why it is so seldom noticed. The effects of this are not nearly so objectionable as those of the barrel variety given by single lenses, and probably the majority of photographers overlook them even when they are present to a fairly large extent. In other lenses the presence of distortion is often undetected owing to its peculiarly complex nature. It is a very common thing for the same lens to give both barrel and cushion distortion. The latter variety may exist at the margins of the field and the former at a part intermediate between the centre and the margins. At the part of the field where the one variety of distortion changes into the other, straight lines are represented as straight. These straight lines will probably occur near the margins of the plate in use if the lens is not being employed at a wide angle; or, in other words, they will exist just where the user of the lens is likely to be looking for signs of distortion, and as he is pretty certain to look for curved lines he will assume that his lens is distortion free. The lines, though straight, may be wrongly situated, but this fact will not be apparent, and in all probability the worker will not know that straight lines may exist with a distorting lens.

### What To Do With Our Girls.

There is now open at the Prince's Skating Rink, Knightsbridge, an exhibition of the arts and crafts in which, so it is suggested by the promoters, opportunities are afforded for girls of intelligence to earn their own livings, or, at the worst, to cover expenses in pleasantly occupying their leisure hours. The propositions thus offered to the feminine choice range from making artificial flowers to breeding donkeys, to say nothing of motor tuition, leather and metal work, miniature painting, and, of course, photography. We could not help being impressed by the ardent enthusiasm of the ladies in their occupations—did they not admit to us being "awfully keen" on them?—and no less by their evident blindness to the defects of much of their handiwork. The almost universal willingness to take pupils in their crafts suggests the rather discomfiting fact that these *petits métiers* themselves are not all that can be desired in a remunerative sense. But of industry pitifully wearing itself to the bone in some cases, a visit to the exhibition will show a score or two examples. Our halt at one photographic stall brought before us some effort mis-expended on the hand-drawing of crayon enlargements from small photographs; at another table we were offered, on behalf of a West End photographer, a 5s. coupon entitling us to a photograph usually not obtainable under a guinea. We came away wondering whether the would-be girl-photographers had divined the significance of this latter fact to themselves.

### Detail in Photographs.

Mr. G. A. Storey, A.R.A., in his lecture on "Art and Photography," given at the R.P.S. a few weeks ago, dealt with the matter of detail in a manner that may seem strange at first to many photographers. The position he took up was this: Detail in small images tends to give an appearance of littleness, while in large pictures it simply looks natural. The reason of the dwarfing effect of detail in small images is fairly easy to understand. In general, small scale suggests distance, but fine detail denotes nearness, and when the two co-exist we can only reconcile one with the other by assuming small size. From this we may argue that in the case of large images, say nearly full size portraits, the size suggests nearness, and detail is then expected. If it is entirely absent the effect is difficult to account for. If we assume the lack of detail to be due to distance, then the big scale denotes gigantic size, while if this seems unreasonable we are apt to feel that

something has gone wrong with our eyesight. It is very curious that so many photographers seem to look upon detail from quite opposite points of view to those we have mentioned. They tolerate intricate detail in small images, probably because it looks pretty, but aim at most obvious fuzziness in large pictures where detail is most in place. Possibly this is due to want of consideration of the various factors that tend to suggest distance or the reverse. One of these factors is, of course, depth, and this, naturally, should vary in quite the opposite way to the detail. For example, if our attention is directed to a very near subject we see all the detail in that subject, while more distant objects are practically ignored, and are therefore best represented without detail. If, however, the principal object is moderately distant, we see very little of its detail, while its general definition is very little better than that of much more distant objects in the background. In this latter case fair depth, but little detail, is desirable, while in the other detail is wanted but practically no depth.

### PHOTOGRAPHY IN THE TROPICS.

A RECENT article by Mr. E. W. Foxlee on the working of the carbon process in tropical countries having brought us several requests for a few hints on the precautions advisable in the case of other branches of photography, we will endeavour to give a few general precautions of a kind which may be profitably applied both by those contemplating residence in hot, humid countries, and by others who may intend only to journey through them. Both must realise that photography as a profession or a pastime is hedged about with difficulties when practised in a country where the thermometer may range from 90 deg. to 120 deg. Fahr., and that in the hot and dry season it can be carried on at all only at considerable inconvenience, whilst in the wet season the conditions are worse still. A moisture-laden atmosphere at a temperature of 90 deg., such as is common during part of the year in India, the West Coast of Africa, and other countries, obviously puts the photographer at considerable disadvantages, since not only all materials become more or less adversely affected, but apparatus as well. It is only the very best of the latter which will not succumb in a year or two, and become useless; and with even the very best every care must be bestowed upon it when in use, and when stored away, for the moisture and destructive insects will find access through almost everything. In the wet season the glue will soften and possibly ooze out from the dovetailed joints of apparatus and the panels of the dark slides, so that they become loosened. Some time ago in conversation with one of our oldest, and best, camera makers, we asked if there was any actual advantage in brass-binding cameras when they were made of well seasoned wood, and were of the highest class workmanship. His reply was to the effect that there was practically none if the camera was used with ordinary care in this country. But if it was for India, or such places, there was a decided advantage in the brass binding, since, in the hot, wet seasons, the glue in the joints became softened, and the joints thereby loosened. The brass binding, however, held them firmly in position until the glue was again dry and hard, so that the apparatus in the end suffered no very material injury. Our informant added that the whole of the cameras he had made for India—and he had supplied many—were all substantially brassbound, and that such a course invariably proved the most economical in the end.

The bellows of cameras usually suffer badly in tropical countries, particularly during the wet seasons. The



her absorbs moisture and becomes mildewed, while foundation also softens by absorption of moisture. It loses its rigidity, and the gussets no longer keep their shape. Another great trouble in such countries is the attacks of insects, which sometimes eat the leather of bellows, and the glue in its foundation, and sometimes the holes in the woodwork to a troublesome degree. What has been said it will be seen that it is only the best cameras that will prove of service for any length of time in tropical climates. We would caution all who are going to such places, even on a tour, to avoid dealing with them any of the cheap, "slop-made" apparatus, which there is now so much on the market, as they will mainly regret the course when perhaps too late to reverse the outfit with another. It must not be assumed we condemn all low-price apparatus, for, as a rule, it gives excellent service when used in this and similar countries. But in tropical climates most of it would lead to disaster in greater or less degree.

In the foregoing we have been dealing with cameras and especially, but lenses should not be dismissed as requiring no attention. In tropical countries they should receive the greatest possible care and protection, or they will suffer materially from atmospheric conditions. Some time ago while we were shown a large portrait lens, by one of our best makers, that had been in use for some years in India. It was in a sorry plight. The lacquer had perished and the brasswork become corroded to a great extent. The glasses also had suffered badly, as the surface had lost their polish through erosion. The instrument in the first instance cost something like £60, but in the condition in which we saw it did not look worth as much as 7 shillings. However, after the brasswork had been repolished and the lenses re-polished by the maker, it was again a servicable instrument. We merely allude to this matter to point out that lenses require the greatest care in tropical countries, or they may suffer unsuspected deterioration.

Turning from apparatus to materials, difficulties have to be met. Plates, films, and papers should always be kept in specially packed in zinc-lined cases, soldered down, and labelled that they must be stored in a cool place and not near the vessel; if placed near the boilers the continued heat on the long journey would cause deterioration. Some

brands of plates are credited, and rightly so, with possessing greater keeping qualities under trying climatic conditions than others. It may, however, be taken as an accepted fact that plates of moderate rapidity, other things being equal, have better keeping qualities than those of ultra rapidity. In our climate there is little trouble with frilling in the case of plates at present made, but where tropical heat prevails it will be almost always necessary in working to keep everything as cool as possible, and to make free use of formaline or other hardening agents. It will also be an extra safeguard against frilling to rub the edges of the plates round with a piece of paraffin or beeswax before commencing the development. It involves but little trouble, yet the latter may often be expended to advantage.

With regard to printing processes it may be truly said that the easiest of them to work under tropical conditions is the old albumen paper, where the paper is sensitised by the worker as required for use. Gelatine P.O.P.s, as most are aware, sometimes give trouble, even in this country, in very hot weather. That, however, has been greatly minimised by the makers of most brands during the past year or so. Yet P.O.P.s, by reason of the free nitrate of silver in them, have not the same keeping properties as have development papers. The latter have a much longer life under severely adverse conditions, and there is no reason why, with the many methods of toning now in vogue, they should not be employed in the tropics in place of P.O.P. Results that can only be distinguished by experts from those made on P.O.P. can be produced upon many of them, and there is less trouble in making them in exceedingly hot weather. We are now alluding more particularly to the slow contact and gaslight papers, which have excellent keeping qualities.

One final note on a minor, but not unimportant, point. Photographic dealers in tropical countries know by experience the goods best suited to their climate, and they take care to import—which, by the way, they do chiefly from this country—only such as they know will prove satisfactory to their customers. Therefore a tourist, if he happens to run out of the supply of material he took with him, will do well to replenish his stock with what the dealer recommends, even though it may not be his favourite brand.

## BURNISHING, EMBOSSING, AND PLATE-MARKING.

In burnishing prints with a bar burnisher it is imperative that the bar be perfectly true and free from scratches, as any which come to lie across it would certainly produce fine lines on the print; longitudinal scratches are of somewhat less importance. And there, however, be some crosswise scratches, they may be removed by rubbing the bar on an oilstone, working it always longitudinally, and keeping it perfectly flat from end to end, so that the ends will be ground away to a greater extent than the middle, and an even polish will not be obtained all over the bar. In working the bar on the oilstone care should be taken to give it a slightly rounded and not a quite flat face. Holding the burnishing bar, it should be equally heated, and not more so at one end than the other. Carelessness in this respect will give rise to an unequal gloss on the two sides of the print. With regard to the temperature of the burnishing bar, it should be about as hot as a laundry-iron is made—namely, that is, as hot, or a little hotter, than the hand can bear. Before the prints are burnished they require to be heated to prevent them from sticking to the heated bar. The lubricant for the purpose is Castile soap. 45 grains, dissolved in 1 pint of methylated spirit. It is merely rubbed thinly over the surface with a pledget of soft rag or cotton-wool.

### Enamellers.

Of late years bar burnishers have been greatly superseded by enamellers. These are really rolling presses, with small rollers heated by gas or spirit. The prints are simply passed between the rollers, which, being small, impart a very high surface. The rollers of enamellers are nickel-plated to avoid rusting, and care must be taken that they do not get scratched or otherwise damaged, as the injury would show on the unfinished prints. Sometimes—though not often—the nickel-plating may become loosened or separated from the iron. When that happens the rollers must be sent to the makers of the machine to be replated. The advantage of enamellers over bar burnishers is that the larger size pictures can be better dealt with, and the prints are not so curled in the operation.

### Die Presses for Cameo Photographs.

At the present time there is not the demand for pictures with the raised, or cameo, surface there was some few years ago. For producing these, embossing presses are supplied. These are screw-presses, with thick brass dies with an oval or other shape opening; between the die and the top of the press is a thick pad of indiarubber. The print being placed between this and

the die, the screw is tightened so that by the elasticity of the rubber the centre of the picture is forced up, while the other portions remain flat. The pressure should be left on for a minute or so, the embossing thus keeping its form permanently. The embossing presses as sold are of small sizes—cabinet or smaller—but by having dies of large size and rubber pads to correspond, ordinary screw letter-copying presses may be utilised. For these larger sizes hard wood dies may be made to suffice, though, of course, metal ones are preferable. Some years ago I saw some 10 x 8 portraits that had been embossed in this way, and they were very attractive. The thickness of the die, and that of the pad, determines the degree of convexity. If, in place of a thick die, a thinner one and thinner pads be used, a lunette relief instead of a quite convex one will be obtained, and this for the larger sizes is, to my idea, preferable. There is a simple extemporary way of embossing small pictures, say three inches and downward. All that is necessary is a zinc plate, say the eighth of an inch thick, with an opening of the desired size, a piece of plate-glass, and the stopper of a bottle that is round at the top. The zinc is placed on the glass, the print placed in position on it, and held firmly while the back is rubbed over with the stopper used as a burnisher. In this simple way very good small cameos can be made. Prints that are to be embossed are best mounted on thin cards, then embossed, and afterwards attached to a thicker mount by the edges only. If they have been enamelled the high gloss will not be disturbed. If the prints are of large size, and the embossing in high relief, it is well to put a pad of cotton-wool between the embossed portion and the actual mount, as then the relief is not so likely to be injured by pressure.

#### Plate-marking Mounts.

Plate-marking is not often done by the photographer himself. He usually purchases the commercial plate-sunk mounts now on the market. If prints on these mounts are rolled, much of the plate mark is destroyed, and if not rolled the print has not the same finished appearance it would have possessed had it been. Yet, rolling and plate-marking at the same time can be easily done by any one who is in possession of an ordinary rolling-press. A photographic rolling-press is practically a copper-plate press on a small scale, and it can be used in a similar way. There is required in addition two or three thicknesses of printer's blanketing and the plates, which latter the photographer can prepare for himself. At the dealers in printers' materials, copper, steel, and zinc plates of certain sizes are kept in stock, whilst others can be supplied to order. They are polished ready for the engraver. The steel are made more expensive than the copper, and they

are liable to rust unless kept with considerable care. However, copper ones are practically as good for our present purpose as the more costly steel. It will be well to bevel, neatly, the edge for the eighth of an inch all round. This can be done by the aid of a file. After the bevel has been filed down, the roughness left by the file must be taken out by working along the bevel with a piece of snakestone wetted with water, working it always longitudinally, and finally polishing with charcoal and oil. The finest emery paper—that sold by dealers in engravers' requisites under the name of "blue back." For different sizes and shapes, different plates are, of course, required; but, as just shown, they are easily made.

The plate-marking is done as follows:—A piece of paper, the size of the mount, is laid on the bed of the press; on this is placed the plate, face upward. The mounted picture—face downward, of course—is laid in position, the piece of paper on the bed of the press serving as a guide for register. On the two or three thicknesses of the blanketing are laid, and the whole passed slowly through the press. Owing to the elasticity of the blanketing much greater pressure is exerted on the picture and plate than on the margins, hence the plate-mark. In this way we have the print rolled and plate-marked at the same time. Prints so treated have a much neater and more refined appearance than those that are simply mounted on plate-sunk mounts and not rolled at all.

#### Zinc for Plate-marks.

In place of copper, zinc plates, which are much cheaper and easier to manipulate with the file, may be used, but they are not to be recommended on account of their being easily scratched or damaged. It is well, as just said, to have the plates bevelled at the edges, as it gives a better finish to the pictures, though they may be used if merely rounded. It goes without saying that the more highly polished the plates the higher the gloss on the surface of the prints. Should a plate become accidentally scratched, the defect will show in the finished picture if the plate is used in that state. However, the scratch can be got rid of by working it out with a stick of charcoal and oil. A special charcoal for the purpose is sold by all printers' and engravers' sundrymen. After the scratches have been worked out the surface is finished off with a small piece of the blue back. In polishing the plate with charcoal, or with the emery paper, it must always be worked in one direction only, otherwise a perfect polish will not be obtained. A certain kind of plate-marking may also be produced by employing a piece of hard cardboord or a hard mount in place of a metal plate, but the effect obtained is not nearly equal to that secured when the picture is rolled in contact with metal.

WM. MICHELL.

## THE FLASHLIGHT IN PROFESSIONAL PORTRAITURE.

[Of late in this country the magnesium flashlight as a method for regular professional portraiture appears to have largely lost what little vogue it once possessed, a natural consequence, if the arc lighting, which has slowly but surely come to the front. Nevertheless, flashlight may be of service, particularly to the professional who cannot obtain electric supply, and we therefore quote some portions of an article in the current issue of "Camera Craft," by Charles R. Ogilvie, who strengthens a strong argument for flashlight by reproductions of some excellent portraiture done by it.—Eds. "B.J."]

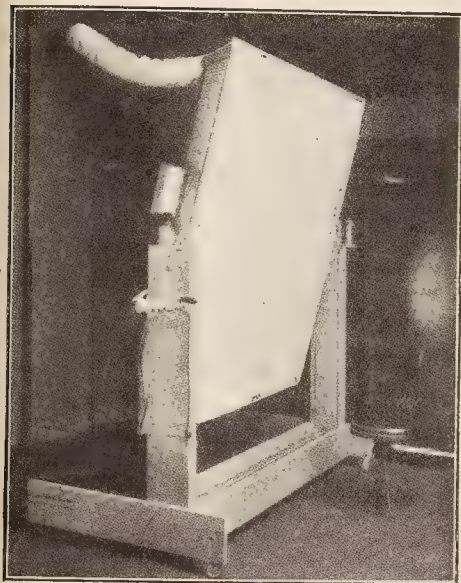
BUT to return to our advantages; there is next the power to catch the most fleeting expression, owing to the short duration of the flash. The time involved is less than one-twentieth of a second, and, with a good powder, even shorter. The experienced photographer will recognise the value of this, particularly in the case of children. To be sure of the desired expression, and that there will never be a failure, because of a move, are of inestimable value, and should commend it to all, for occasional,

if not for regular, use. One has absolute control over the amount of exposure given. If a certain number of grains of powder are found to be right, one has but to measure out the desired amount each time, and the negatives will develop automatically and be of exactly the same quality throughout a number of sittings. The necessary amount of retouching is greatly reduced. The difference between flesh texture and drapery is always rendered correctly. Both of these advantages



due to the somewhat orthochromatic quality conferred by the material. The rendition of drapery, either light or dark, is perfect, the quality of the hands against either calls for no attention from the photographer; that is all taken care of by the yet searching light.

The cost of each exposure is a fractional part of a cent. A serviceable apparatus costs less to install and maintain than an ordinary set of studio blinds. Any room that is large enough for the lens employed, can be used, and the portability of the apparatus prevents much of the necessity of shifting the camera about for varying effects. In addition, there is no trouble with leaky skylights and broken glass, no expensive electrical repairs or unexpected breaking down of delicate mechanism.



to the apparatus used, its forms are as varied as are the lights employed by different photographers; in fact, the variety is even greater. The most effective arrangement is, perhaps, that employed by Mr. Morgan. He has built a partition of tracing cloth extending from floor to ceiling, and at two feet from the front wall of his room. The flash lamp is placed in that narrow enclosure, and the smoke flows out of an ordinary window lowered at the top, a window, of course, cut in the wall behind the tracing cloth partition. A door at the end makes the placing of a new charge in position but work of an instant. The light is used exactly the same as a light, except that the raising or lowering of the standard for moving the powder pan, together with the moving of the frame from side to side, does away with the necessity of using screws or adjusting them for various effects. The cut herewith shows a piece of apparatus used by a photographer in the Middle West. The swinging frame, six feet

square, is backed with asbestos-covered canvas, and the front is covered with semi-transparent cloth. It is open at the bottom, but closed at the top, except for the flexible canvas pipe which connects with a chimney, window, or other opening to the outer air. The smoke is driven out by means of a small electric fan located in the end of the pipe, and operated by a single battery cell. The flash lamp is supported on a frame just inside the small door shown open at the side. Exposure is made by pressing a bulb, which explodes the powder and opens the shutter at the same time.

A third worker uses a light wooden box about three feet square, lined with asbestos paper, one side, the front, left open except for a covering of thin muslin. This is provided with a smoke outlet in the form of a flexible chimney and with a door for placing the powder on the pan within. This box is swung from the ceiling, and can be moved about and inclined at any angle by means of a couple of cords. The powder is ignited by means of a push button, which causes a weak current to pass through a short length of very fine wire on which the powder is placed. This short wire becomes red hot the instant the button is pressed and explodes the powder.

I have not given any diagrams showing position of lamp, sitter, and camera, for the reason that this is intended mainly for the professional, and the light illuminated surface is used exactly as one would employ a like uncurtained portion of the ordinary skylight. I have, however, neglected one feature, and that is a means of focussing and also of studying the lighting before the exposure is made. This is easily secured by having an incandescent light, or even a group of two or three, suspended by a cord in such a way that it can be hung directly in front of the intended flash. In the box-shaped apparatus I have described, two of these lights are a permanent fixture near the centre of the bottom of the cloth-covered side, through which the flashlight reaches the sitter. A pliable connection of suitable length joins these to a near-by lamp socket. If such light as may be used is found hardly sufficient for critical focussing, the difficulty may be overcome by cementing, with a drop of Canada balsam, a microscopic cover glass to the inner side of the focussing screen. The balsam fills up the rough surface of the glass, giving a clear glass spot through which one may secure an aerial image by means of an ordinary focussing glass.

It should be borne in mind that a concussion follows the explosion of all flash compounds, and if one uses a powder that requires more than a few grains to secure the desired amount of actinic light, it will be necessary to have an opening in the box or bag used, to allow of the expulsion of air attending the concussion. This can take the form of a flap that will swing outward and fall back into position before the smoke can escape. Another thing I would like to point out, and that is, the advisability of removing the cloth through which the light passes and washing it out from time to time. Tracing cloth, having a smooth surface, catches little in the way of dust from the repeated flashes, but other cloth is liable to become clogged up and prevent the light from passing through as it should. If the cloth be soaked for an hour in a gallon of warm water in which has been dissolved seven ounces of ammonium phosphate and two and a half ounces of common soap, and then hung up to dry, it will be rendered practically fireproof.

CHAS. R. OGILVIE.

**P.S. AFFILIATION.**—A meeting of secretaries of affiliated societies in London and district was held at 66, Russell Square, on Monday evening, May 4, presided over by Mr. P. Bale Rider, Chairman of the Executive Committee. The meeting was the revival of a practice of considerable service some years ago, but which had dropped out of use recently. Between twenty and thirty societies were represented, and many matters of interest were discussed. It was decided to hold these meetings quarterly, and to make them of

service to secretaries in arranging their programmes. The subject of interchanging lectures was fully discussed, and it was arranged to send out each month to secretaries a list of lecturers who were willing to assist affiliated societies, with the subjects of their lectures, fees, etc. It is hoped that affiliated societies in the provinces will follow London's example and hold meetings of this kind in their various districts, as such combined gatherings may be made of much benefit and interest.

## THE MODERN NOTE IN THE DESIGN AND FITTING OF PHOTOGRAPHIC PREMISES.

### VII.

[In drawing to a conclusion the articles on the principles which should guide a photographer in the design and decoration of his place of business, we come to the consideration of a complete photographic establishment, consisting, in fact, of premises such as few living photographers would feel justified in putting up. Yet the scheme of such a building in its various parts may be commended to the study of even the small photographer on account of its giving details of arrangements which can be abstracted in pieces from their surroundings and utilised in a far less elaborate setting. Therefore, we present this week a set of drawings, made for readers of the "British Journal" by Mr. Drinkwater Butt, part of whose description of them appears this week, whilst the remainder concluding the present series of articles, will appear next week.—Eds. "B.J."]

In the early days of photography, and when competition in business had not reached its present stage of acuteness, almost any kind of a glass house appears to have done duty for a studio, and any sort of premises to have been deemed suitable for the conduct of the operations of professional practice. To-day, however, when, as in all business enterprises, there is in photography not only more capital invested, but also much more system and organisation needed to work such a concern profitably, by the production of first-class results at moderate prices, all possible conveniences of housing, as well as all kinds of labour-saving appliances, have to be resorted to, and much more attention is therefore paid to the location, construction, and fitting up of such establishments. Wherefore, a few words on the planning of photographic premises may not be out of place.

To illustrate the general principles which should guide the designer who has to consider such a matter, I have prepared the accompanying set of plans; choosing a town site, with its attendant conditions and difficulties, as being the most general form in which such a problem is likely to present itself. We have, as will be seen from the drawings, a plot of land having a frontage of 25 ft. to the street, and a depth of 100 ft. from front to back. We have supposed, also, that its greatest length runs from east to west, as that is a point one would naturally look for in choosing such a site, in order to have the best opportunity of obtaining the greatest amount of north light for an evenly illuminated but not directly sunlit studio. We have further presupposed the very probable difficulties that both sides of the site, for at least 50 ft. back from the frontage, are occupied by existing buildings of not less than 40 ft. in height; that we are also similarly prevented from getting any lighting at all from any part of the south and east sides; and that there are no means of access save from the street frontage only. The problem, then, is to construct a building that shall give us the greatest amount of accommodation, suitable for the conduct of a large general photographic business, within and under these limitations and difficulties.

#### Division of the Working Premises.

The first point considered has been the desirability of separating what may be called the public from the working part of the premises; while yet allowing easy and quick access from one to the other at convenient points. This has been done by concentrating the former upon the front portion and the latter upon the back part of the site, an arrangement that also keeps all the necessarily large and high apartments together in one block, and the lower and smaller ones in another, with a consequent facility of planning and economy of construction. Each group occupies, approximately, about one-half of the site, the rear portion including the open space necessary for light and air at the back of the building. Entrance for goods and assistants to the working part of the premises, without passing through the public rooms, is provided by the passage shown on the ground plan, which receives its light from the fanlight over its door in the front elevation, through a half-glass door into the covered way at the further end, and by the glazed door and partition shown at the foot of the main staircase in the Section A.B. Clients and the public enter by the other door in elevation, through the lobby into the reception room, whence they are easily sent by stairs or lift to the exhibition gallery, principal's office, dressing rooms, or studios, as required.

#### The Daylight Studio.

The last-mentioned apartments are, of course, the most important in the building, and their planning naturally received the next atten-

tion. The only suitable place for the daylight studio, on such a site, is obviously the top floor, where it alone can receive its light from the north, at some 40 ft. from the ground, unimpeded by the adjoining structures. On a more open site one would have kept the studio on the ground floor to avoid the trouble of sitters ascending to it, but in the present case one can only minimise that difficulty by the provision of a lift, in the well of the staircase, going up through all floors of the building. With its light on the north side, the length of the studio must naturally run east and west, and we then find that when we have taken space enough for a sufficiently dignified staircase running round a square lift well, we can get a longitudinal internal dimension of 31 ft. as shown, which, however, does not include the further 4 ft. given by the depth of the semi-circular recess at the east end into which the camera could on occasion be run when greater length was required. The principal purpose, however, of this recess is for it to form, by means of its plastered and flat-tinted, curved wall, a naturally graduated background, which, under ordinary conditions of lighting, would give a dark behind the lighted side of the sitter, and light behind the shadow side, and do so in a manner much more suggestive of space and atmosphere than any ordinary painted background. It would be ceiled with two light canvas-covered frames, hinged at the middle, as shown by dotted line on plan, either of which could be raised by cords and pulleys worked from the lobby of dark-room, so as to alter the effect and gradation of the background by the admission of light from the special skylight shown on the roof plan immediately over the recess, and so give an infinite variety of artistic effects with great ease and simplicity.

#### Some Novel Studio Features.

The sectional form of studio chosen, as will be seen by reference to the Section E.F., is that known as the "single slant," in which the glazed portion is all in one plane, and consequently unbroken by the wall plate, which, in ordinary studios glazed at side and roof, often causes double high lights in the eyes of sitters. It has all the advantage of allowing of the more ready construction of a roof which is really weather-proof, which throws off snow at once from the glazing, and which admits of the more easy execution of repairs. The roof, as shown, is carried on two steel principals, the position of the tie rods of which is indicated on the plan, their height above the floor, as shown by the section E.F., being 9 ft., so that there is plenty of room for the movement of background stands, etc., beneath them. It may also be noted that the steep pitch of the "single slant" is sufficient to prevent the sun, even at its highest midsummer altitude of 62 deg., from looking over the roof into the studio, so that trouble from its direct rays would never be experienced. The glazing of this north light, which would be executed on the well-known "Simplex" principle, goes, of course, to the whole height of the studio, some 14 ft., and with a length of 22 ft., and an outward slope of 6 ft., affords an ample lighting area for the largest groups which the studio could accommodate, either end of the apartment. For ordinary work, of course, most of it would be obscured by blinds, of which there would be a double set, on spring rollers, one working upwards from the bottom, and the other downwards from the top. The window at the west end of studio would, of course, also be kept curtained, except when it might be required to equalise the lighting on large groups or objects, or when it was itself used as an accessory or background, or for obtaining special lighting effects, to facilitate which purposes its leaded lights would be glazed with white rolled cathedral or ground glass. Another fixed decorative feature which



might be used as a background and accessory is the "practicable" window opening on to the landing at the east end of studio, outside which might at any time be placed an outdoor painted background, which would be well lighted from the two skylights which, as shown on the roof plan, illuminate the main staircase; and others are also the doors, the mantel with its adjoining seats, and even the walls, which would be appropriately and usefully covered with "Lincrusta," or other similar relief decoration, plainly coloured to harmonise with the general colour scheme of the whole, which latter should be of soft, warm greys, slightly relieved with pale reds and yellows, so as to produce an artistic and pleasing effect without detracting from the general actinism of the light reflected from the walls. The pale cream or ivory tinted ceiling might be left plain or covered with a low relief decorative material as preferred. The floor would be of oak parquet, and, to facilitate the easy movement of background and camera stands, would be left uncovered, save for a few suitable mats or rugs in places.

For ventilation there would be a couple of small Boyle ventilators in the roof; and for heating, a couple of radiators, supplied, as in the whole of the rest of the establishment, with hot water from the heating apparatus in the basement. The fireplaces shown in the two studios and exhibition gallery are mainly for the sake of appearance, and although their open dog-grates would be used as required, the principal source of heating would be the general hot-water system. The radiators belonging to this, for the sake of avoiding confusion, have not been shown on the plans, but, of course, they would be fixed in every apartment. In the daylight studio they would be placed at each end of the north wall, and under them would be the ventilating inlets by which the outside air would be both filtered and warmed on its entrance, the former being especially necessary in smoky and foggy towns to preserve a clear atmosphere in the studio under all weather conditions. For ensuring coolness in a hot summer, water-pipes pierced with small holes at intervals of a few inches might be run along each side of the zinc flat, so that a gentle flow of water might, when desired, be made to run down either the slate of glass side of the roof, on the latter part of which it would also be very useful for cleaning purposes.

#### Dark-rooms and Dressing-rooms.

The dark-room is, of course, made to adjoin the studio, but is separated from it by a small lobby, in order that by the shutting of a door before the other is opened ingress and egress may be at times obtained without the admission of actinic light, an important point when an assistant may be developing or filling slides while operating is going on in the studio itself. The fixed fittings would include lead-lined sinks, with hot and cold water supply to each, shelving, and benches with cupboards under as shown on plan and Section A.B. Over the sinks are windows, well screened in the building at the back from the direct rays of the sun, and each of these would be fitted with sliding glazed shutters, so that day, yellow, or white light could be obtained at will during the day, while at night the room would be illuminated by electric lights similarly screened, for the same purpose. Special ventilating ducts for this room and the one below it are shown on the plans, plenty of fresh air being a necessity in dark-rooms if good work is to be done and health maintained.

Descending a few steps from the daylight studio landing, we have the passage leading to the dressing-rooms, which are thus conveniently situated equi-distantly from the two studios. They are two in number, one for ladies and one for gentlemen, and have each two windows, beneath one of which would be placed the dressing-table, and beneath the other, as shown, a lavatory-stand fitted with hot and cold water supply. Each room should also have ample accommodation for the outdoor and other garments of sitters. For sanitary convenience, lighted and ventilated from the roof, will be found in proximity.

#### Electric Light Studio.

Again descending to the second floor, we have next the electric light studio, situated immediately beneath, and of the same size as, the daylight one above. This is intended for use at night, or on dark or foggy days, with a movable arc or incandescent electric light, or one of the good patterns now on the market, or with any of the similar gas or magnesium appliances, as preferred by the operator. It would also be very useful for copying, the photography of objects, sketches of art, etc., with which it is not desirable to occupy the

other studio during the busy season of portrait work. It is shown, on the Sections A. B. and E.F., as decorated with panelling to the height of 8 ft., over which is a plain or decorated frieze to the cornice. This panelling might be executed in oak, or at less expense in soft wood and painted, and in either case would form, together with the doors, windows, and carved mantel, at many points a very useful and artistic background. As in the other studio, there would be a parquet floor, and a "practicable" window to the landing. The large western window, going the whole width of the studio, would, of course, be kept generally curtained, but portions of it might at times be used to obtain special lightings, and the whole occasionally to obtain a flood of direct daylight for copying and other purposes. Adjoining is a dark-room, similarly fitted to that above, but having, in addition, a convenient cupboard in its lobby.

#### An Exhibition Gallery.

Again below, on the first floor, we come to the exhibition gallery, an apartment at all times useful for the display of large specimens supplementary to those shown in the reception room, and, on many occasions, very valuable for organising special shows of the work of the proprietor, or of such collections of general artistic work as he might find interesting to his clients. Here, too, may be exhibited, on stands and tables, the series of photographs of local views, antiquities, and objects of interest, of which every large general photographic business ought to make a feature, printed in all styles, from the popular postcard to the framed enlargement. This gallery would be sufficiently lighted, by day, by the large window occupying the whole of the western end, and by borrowed light received through the principal's office, and the wide opening on to the main staircase. At night, incandescent electric light would be used, with a series of reflector fittings to throw the illumination on to the walls while shielding it from the eyes of the spectators. The apartment would be appropriately decorated in soft, warm browns, the walls being covered with brown paper or canvas above a rather more strongly tinted dado, to form a harmonious background for the monochromatic photographic work to be placed on it—the woodwork stained and polished—with draperies and curtains of a warm green relieved with citron yellow. A cream or ivory tinted ceiling, and a parquet floor, would complete the general effect.

Very conveniently adjoining this gallery is the principal's office, in a position which is practically central to the whole building, any portion of which can be easily and quickly reached from it. Its window also commands the whole of the back premises.

Again descending the main staircase, and noting in passing the obtaining of additional light for its lower portion by means of a circular window opening from the covered way on to its first half landing, we come to the reception room on the ground floor, with a lobby entrance from the street having an outer door to always stand invitingly open, even when in cold weather the inner glass one had to be shut. The show-window has been kept moderate in size, not only to obtain a better architectural effect in the elevation than can ever be got when huge sheets of plate glass are introduced, but also because the display of a small quantity of good work, well arranged, is always much more artistic and pleasing than a large and "fortuitous concourse" of what are often truly "incongruous atoms." The window space could be enclosed by a dust-proof glazed partition, which latter should not be obscured by any draperies which may be used, to the extent of excluding very much light from the reception room itself, though that apartment will also receive some light through the general office, and from the main staircase on to which it opens. Being, however, less well-lighted than the exhibition gallery above, its decoration should be kept proportionately lighter, and the woodwork and fittings might be of ivory-white or cream colour, with walls of a soft green and a dado of a darker tint.

The staircase might be of oak, with dull red walls, on which might be appropriately displayed the larger specimens of coloured work, such as life-size oil paintings, which would be out of place among the smaller and more generally monochromatic work shown among the more delicate and quietly decorative tints of the exhibition gallery and reception room.

The general office occupies a suitable position adjoining the latter, conveniently situated for easy communication with the receptionists, for the payment of wages, and the reception of commercial travellers.

DRINKWATER BUTT, F.R.P.S.

(To be continued.)

## A NEWCOMER IN BOND STREET.

BOND STREET and Baker Street, as everybody knows, represent the two colonies in London of the "fashionable" photographers, and Bond Street, by its intersection of the eastern part of Mayfair, is undoubtedly the more fashionable of the two. Hence no little interest attaches to the addition of a newcomer to the ranks of Bond Street photographers, and when we heard that Mr. F. A. Swaine had established himself at 106, New Bond Street we took an early



A Corner of Mr. Swaine's Studio.

opportunity of paying him a call. We knew him as a photographer of distinction in Southsea, where his work had drawn to his studio society people residing near this part of the South Coast, and we were naturally anxious to see the premises of this latest of West-End photographers. From the marble portico of 106, New Bond Street, the elevator silently raised us to the very threshold of Mr. Swaine's reception room, which we found furnished with some choice specimens of eighteenth century chairs and tables. Mr. Swaine has a



The Reception Room.

hatred of the artificial, and has banished from both his reception room and studio the sham furniture which is supposed by many photographers to be an indispensable part of their outfit. Mr. Swaine, however, has in his composition enough of the amateur—using that word in its true sense—to influence his practice as a portrait photographer. His first training as a photographer was gained with the late Walter Noah Malby, of Chichester, an exhibitor in the old days at the Royal Photographic Society's Exhibition. At

this time he was also a student of portrait painting of Mr. Fred Stratton at Amberley. Although the past sixteen years of his life have been about equally divided between the studios of Lafayette in London and Dublin and his own at Southsea, Mr. Swaine has shown enough of his portrait and landscape photography at the exhibitions to bring him about a dozen medals, and enjoys the distinction of having had a photograph of his purchased by King Edward.

His new studio in Bond Street strikes one at once as cheerful and cosy, an effect due evidently to the home-like furnishing and the invisibility of the gaunt and formidable-looking implements often to be seen in a studio. As our illustration shows, one end of the studio is furnished as a cosy corner and includes a real window, which, like other parts of the apartment, is skilfully used as a background for sitters. The great length of the studio—45 feet—further favours the photographer in thus indulging his fondness for portraiture with the look of a home-portrait about it, but with a photographic quality which the facilities of a studio enable him to secure. Mr. Swaine, of course, is provided with artificial illumination for use on the infrequent occasions when the natural daylight fails him and for the practice of the now important class of photograph the portraiture of ladies on their way to and from a levee or other society function. Mr. Swaine works almost exclusively carbon and platinotype, of which permanent processes he makes very varied use. His portraiture cannot be easily summed up, but in calling it out of the common we do not wish to imply that it is at all *outré* or eccentric. The aim of the photographer is evident at just that quality of naturalness which is often secured at the sacrifice of everything else in the amateur's chance snapshot. Mr. Swaine's case it is combined with photographic work of the best

## MESSRS. GRIFFIN'S "PROFESSIONAL" DEPARTMENT.

MESSRS. JOHN J. GRIFFIN AND SONS, LTD., is the latest firm to set apart a special department for the professional photographer. Their great block standing close to Kingsway, they have, within the past few days, completed arrangements whereby the professional worker can quickly and conveniently inspect or be shown the article which he desires for his use. Messrs. Griffin's professional li-



issued about three months ago, describes the many items of apparatus and materials which are intended solely for the portrait photographer, but the present move has been made in the belief that photographers within the area of Greater London will always prefer to inspect stock before purchasing new apparatus, while even those in the country will set aside part of a visit to London for the purpose. Hence the present department, which is under the immediate care of Mr. Tom Young, whose familiarity with the requirements of a studio are known to many photographers in London and the provinces. A great feature of the department is the offer for electric light portraiture. Messrs. Griffin are the special agents for the "Jupiter" flash arc, but they nevertheless show systems of lighting, such as the "Jandus" and "Westminster"



sed arcs, and the mercury vapour light, the use of all which lights printing as well as for portraiture they demonstrate to their visitors. Not only that, the premises, as our two photographs show, equipped with cameras, backgrounds, head screens, etc., and the photographer is given every facility to bring his own lens and paper make his exposures and develop his plates on the spot. Similarly can, if he wishes, have the opportunity of printing off a few negatives from his own negatives on his own printing-out paper in order acquaint himself with the possibilities of artificial light printing as offered by Messrs. Griffin. In fact, the firm's great aim is to keep the department up to date in matters of electric light-photographers.

Other branches of professional work are likewise the object of demonstration. The dry-mounting process is made a feature, and in way of backgrounds some novelties are to be seen. The



verside" ground, of distinctive character, is one of a brought out by Messrs. Griffin to provide the photographer, at moderate price, with the effects he obtains in the most expensive African grounds. With respect to mounts, too, Messrs. Griffin file the beautiful Collins series, but they have also other series of their own, among which we saw enough taste and variety to prove that the photographer can find excellent opportunities for wise selection. Of studio furniture we notice with satisfaction some desks in fumed oak which look well, photograph well, and give an air of reality to the studio. All these and other new introductions of the firm are gladly shown to bona-fide professional photographers, for whose use solely the department is set apart. The hours during which it is open are from 9 a.m. to 6 p.m.

#### PHOTOGRAPHY AT THE FRENCH PHYSICAL SOCIETY.

(From our Paris Correspondent.)

PHOTOGRAPHIC and optical appliances were well represented at the annual exhibition of this Society, held in their rooms opposite the Palais des Près, although no striking novelties were to be seen. The exhibition partook very considerably of a commercial show, the striking and interesting experiments which attract one at the meetings of the Royal Society do not enter into its scope. Passing to the left, one would have expected to see photo-telegraphy more to the fore, considering the variety of devices for that purpose suggested in the past year. Actually only a full-sized model of Prof. Korn's installation and a small model of Carbonelle's "Télé-aveur" were to be seen. The latter is an instrument similar to a camera, and utilising a carbon relief, the variations of which are turned into changes of electrical resistance by a microphone. Mr. Richard exhibited the latest forms of their well-known camera, beside instruments for determining the speed of light and for photo-chronographic registration.

M. E. Estanave showed examples of a method of giving an appearance of relief to transparencies, which consists in simply

placing in contact with them a line screen of about three to four spaces to the millimetre. Viewed at some 40 cms., a very agreeable stereoscopic effect is obtained.

A direct reading photometer was shown by Prof. Ch. Féry, based on the following principle:—If from a given light-source that quantity only of each monochromatic radiation proportional to the sensitiveness of the retina for that radiation is allowed to pass, then the heating energy of the total flux obtained is proportional to its luminous intensity. This may be secured by limiting, with a screen of appropriate form, the height of the spectrum, and then reuniting the radiations. In practice it is simpler to use a copper acetate screen which in sufficient thickness cuts off the infra-red. The radiation is then allowed to fall on a radio-micrometer, in which two thermo-junctions are heated alternately by the beam passed through a lens moved at a distance by pneumatic releases. A Carcel lamp—about 10 candles—gives at 1 metre a deflection of 60 mm.

In colour photography Messrs. Calmels exhibited a stand of Wratten and Wainwright's colour screens. Some very good Autochromes taken by Messrs. Lumière were projected, and M. Rothé, Professor of Physics, at Nancy, showed spectra obtained by an interesting modification of Lippmann's process, in which the mercury surface is dispensed with, the stationary waves being obtained by reflection from the air-surface. His plates are prepared with a double layer, the sensitised layer being coated on a second layer of plain gelatine. Prof. Rothé has made a detailed study of the various interference fringes occurring with polychromes prepared thus, with a view to obtaining the colours free from disturbing secondary effects. It will be remembered that a cause vitiating the purity of the colours in Lippmann photographs has been the reflection of light from the surface of the gelatine layer, the white light not only causing mixed colours, but selected waves, by interference with the actual waves (Tiefenwellen) from the colour-forming layers in the film, altering the colours. These surface waves were removed by O. Wiener by deviation, a thin glass wedge being cemented on and the polychromes viewed in a plan parallel trough filled with benzole. Prof. Rothé shows preparations by his method with the coatings in a wedge of variable thickness. Examined in monochromatic sodium light, they showed three systems of fringes, first Newton's colours of thin plates, secondly, surface waves or Wiener's fringes, and thirdly fringes parallel to the spectral rays. He finds that the Wiener fringes, as seen from the glass side, may be avoided by a suitable thickness of gelatine or a double layer. The spectra shown, if not as brilliant as some of Lippmann's specimens, or some shown by Lehmann of Jena, were of great purity. Sections made with the microscope showed a large number of silver lamellae. Prof. Rothé stating he has counted up to thirty, and that his studies in this, shortly to be published, lead to several different conclusions from those of Cajal.

ROYAL INSTITUTION.—On Thursday next (May 21), at three o'clock, Dr. Alexander Scott will deliver the first of a course of three lectures at the Royal Institution on "The Chemistry of Photography."

PHOTOGRAPHY IN TURKEY.—According to a report of the French Chamber of Commerce at Constantinople, the photographic trade in that capital is brisk and a large number of studios have recently been opened. The demand for apparatus and accessories of all sorts is good, more especially for the cheaper qualities. Amateur photography has become popular of late, and trade in apparatus and accessories is satisfactory and is increasing. A large number of amateurs have their plates developed and the pictures printed by professionals. A considerable amount of the trade in apparatus and accessories is in French and German hands, but the report says there is a fair demand for Paget English paper. Sensitised papers ("Solio" and "Platino Matt") placed on the market by the Kodak Co. have a good sale. The French Chamber speaks in high terms of the way in which the Germans push their goods by endeavouring to meet the wishes of the customers in every possible way, and by systematic advertising campaigns, and the Chamber expresses the opinion that to follow the methods of the Germans in this regard is the only way the manufacturers of other countries can hope to hold their own and increase their trade.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents have been made between April 27 and May 3:—

**TRIPOD ATTACHMENT.**—No. 9,271. Improved means for securing easels, camera stands, and other similarly portable articles to the ground. Winsor and Newton, Ltd., and Henry Bowser Wimbush, 17, London Road, Wembley, Middlesex.

**SILVER PAPERS.**—No. 9,275. Improvements relating to silver photographic papers. August Zimmermann, 24, Southampton Buildings, London, for Chemische Fabrik auf Actien vorm. E. Schering, Germany.

**APPARATUS.**—No. 9,349. Improvements in and relating to photographic apparatus. Alchanan Cohen, 69, King Edward Road, Hackney.

**CINEMATOGRAPHS.**—No. 9,404. Method of and means for showing cinematograph pictures with coloured backgrounds. Ernest Osman Brown, 53, Chancery Lane, London.

**STEREOSCOPE.**—No. 9,507. Improved stereoscope. Karl Lenck, 40, Chancery Lane, London.

**PHOTO-TELEGRAPHY.**—No. 9,518. Improvements in the electrical transmission of half-tone or line photographs. Thomas Thorne Baker, 12, Whitefriars Street, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

**CINEMATOGRAPHS.**—No. 23,396, 1907. The invention consists of apparatus for photographing and exhibiting cinematograph views of a panoramic form to include the entire horizon or any desired angle of it, the pictures to be photographed in sections, each including about 36 to 45 deg. of the horizon, and to be projected by a lantern on to a cylindrical screen, in the centre of which the lantern is fixed.

For segmental views, including only from one-fourth to one-third of the horizon, the pictures are taken on a film wide enough for two or three pictures side by side, each picture being a segment of the horizon of about 36 to 45 deg., which are projected on to the film by separate lenses placed at similar angles radially. To receive the pictures at right angles to the lenses, the film may be bent horizontally by passing through rollers, or if not bent, prisms may be used to bend the rays of the pictures to the required angle.

To take and to project pictures to include the entire horizon, or more than one-third of it, the same apparatus must be employed in duplicate or triplicate, each film to take its own two or three sections of the horizon, which is divided into about eight or nine sections, and for projection must be arranged radially around a central light, or separate lights may be employed for each apparatus. Thomas Walter Barber, 82, Victoria Street, Westminster, London, S.W.

**CERAMIC PHOTOGRAPHS.**—No. 24,214, 1907. The invention consists in (1) the use of a sensitising solution of honey or other sugar, nitro-cellulose dissolved in ether, or acetone with alcohol or other liquid, rendering the ether or acetone miscible with water and ammonium or potassium bichromate. (2) Coating with this solution, exposing under a transparency, applying a powder, washing and fixing to fix the colour.

The proportions of the constituents of the solution are of great importance, and are indicated by the following example:—

100 c.c.s. collodion solution (composed, for example, of 250 c.c.s. ether, 250 c.c.s. methylated spirit or alcohol, and 4 grams guncotton).

100 c.c.s. methylated spirit or alcohol.

2 grams ammonium or sodium bichromate.

4 grams honey or other soluble carbohydrate, about 5 c.c. water.

The powdered bichromate and the honey are preferably dissolved in the water slightly warmed, the spirit added, and then the collodion solution.

By sensitising the desired surface with this solution and exposing it under a transparency, the latent image obtained is taken up the powdered pigment or colour perfectly, and reproduces every detail and shade of the transparency.

When the surface thus treated with colour is washed with water, the carbohydrate and bichromate are at once entirely removed without in any way displacing the pigment, which is retained on the surface by the uniformly distributed collodion. The surface can then be at once fired to fix the pigment. The direct reproduction of the original image may thus be obtained.

The glass, porcelain, enamelled metal, or other surface is coated with an even film of the sensitising solution and dried, preferably by a gentle heat until the surface ceases to be adhesive to an object placed in contact with it. The image or design is then placed in contact with the sensitised surface and exposed to light.

After exposure the surface may be gently warmed for a few minutes, and a suitable pigment or colour is then dusted on and may be rubbed in with a brush. The powder will adhere to the film inversely as the action of the light has taken place. Thus it will attach itself to those portions of the surface corresponding to the dark portions of the original. The surface is then washed with water, whereby the soluble matters in the film are dissolved and removed, leaving the image in pigment or colour there. The surface is then dried and fired.

The invention may be applied to the reproduction of images of wood, metallic, or other surfaces in cases where it is not desirable to fix the image by firing. In such cases, when the surface is porous it should be enamelled or coated with a suitable ground to prevent absorption of the sensitising solution. The picture may be protected by varnishing or other suitable means. Manufacturers, 13, Fitzroy Street, and Edwin Lloyd, Limited, of Newman Street, Oxford Street.

The following complete specification is open to public inspection before acceptance under the Patents Act, 1901:—

**CINEMATOGRAPH.**—No. 8,963. Means for displaying animal pictures or the like. De Mare.

### New Trade Names.

**EVANITE.**—No. 301,299. Photographic apparatus included in Clay in metal and earthenware. Evans, Sons, Lescher, and Weller Limited, 56, Hanover Street, Liverpool; and 60, Bartholomew Close, London, E.C., wholesale druggists and photographic manufacturers and dealers. March 13, 1908.

**ARTURA.**—No. 299,215. Photographic developing and printing paper. The Artura Photo Paper Company, 1,500, Eastway Avenue, Columbus, Ohio, U.S.A., photographic paper merchants and manufacturers. January 1, 1908.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Development Made Easy.

"I have pretty well completed" (says Mr. Alfred Watkins, writing in "Photography and Focus" of May 12, of a new developer which his firm has just worked out) "a test of all the plates and films, development speed of each, and shall in future give this on the score card, in addition to exposure speed. The variation of time for different plates is very striking. I divide plates into seven groups, two and a quarter minutes being the average time, at 60 deg. F., with my developer for the quickest group, and eleven and a quarter for the slowest group. Of course, this can only be taken as approxi-



mate, as makes are not always uniform. The groups will be given by letters VQ, Q, MQ, M, MS, S, and VS, and the information will, I think, be useful to those who do not buy my developer. I expect to have it out in a month, as all plant and materials are ready. I have in preparation an adjustable thermo-calculator, for developers of different temperature co-efficients, to be made in metal."

### The Ozobrome-Oil Process.

This process (writes Mr. J. Parrack in "The Amateur Photographer and Photographic News" for May 12), which should prove of considerable advantage to workers in the oil-pigment and Bromoil processes, enables the operator to obtain any number of oil prints from single bromide (or gaslight) print. In practice it is a combination of the ozobrome process and oil printing. The bromide print is prepared in the same way as for ozobrome. Place the bromide print in clean, cold water. Next take a piece of oil pigment paper (or any other paper suitable for oil printing) and wet it in cold water. Then place it in dilute ozobrome solution, made by adding four parts of water to one part of concentrated solution. Allow the paper to remain in the solution two minutes. Lift it out and drain off the superfluous solution. Now draw the paper through clean water and bring it into contact with the bromide print. Take the two papers and squeeze them into close contact. Leave for about twenty minutes. When this time has elapsed place the prints in clean water and separate. So far the working has been the same as the ozobrome process, except that instead of pigment plaster oil-pigment paper has been used. The rest of the operation is the same as in oil-printing. Wash the paper to get rid of the ozobrome solution. Place the paper on the wet blotting pad, surface dry, and then may be developed up with any suitable developer. It is then dried and kept for further use. The oil print will, of course, be reversed, but as this process would be used principally in the case of enlargements, this is no drawback. If the operator, in making bromide enlargements intended for this process, reverses his negative he will obtain from it any number of oil prints the right way round. There appears to be no limit to the number of prints obtainable.

### New Books.

*Le-Mémoire Pratique de Photographie.* By L. P. Clerc. Paris: J. B. Baillière et fils. 4 francs.

This volume is a revised edition of the text-book by M. Albert Clerc, which for some years past has appeared under the above title. M. Clerc in re-preparing it for the amateur worker, has strengthened the portions dealing with lenses, shutters, and such important, but often disregarded, questions as principles of perspective, distortion, and depth of focus and field. In short, optical matters concerned in the making of a negative come in for a far larger share of notice than is usually the case in text-books. Processes of development and of positive printing are dealt with fully. M. Clerc, who contrives to write for the non-scientific reader in a way not to mislead him. Chapters on stereoscopic and colour photography conclude a very excellent text-book.

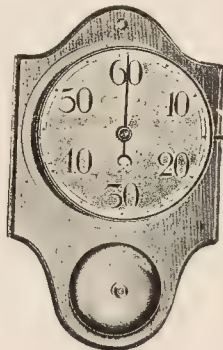
**ELECTRICAL INDUCTION-COIL CONSTRUCTION.**—Messrs. Percival Marshall and Co. have published a shilling manual on this subject, the pen of Mr. J. Pike, an old contributor to the "British Photographer," and a practised hand in electrical construction. Mr. Pike writes explicitly of the details and methods of building and winding spark coils, and his book should be of real value to those who employ such apparatus for X-ray or other purposes.

**EDINBURGH "COMPETITION."**—Messrs. John J. Griffin and Sons, Ltd., announce the offer of prizes of £3 3s., £2 2s., and £1 1s., in addition to consolation awards of 5s. each, for prints on their "Gold-softening paper." The contest is open only to amateur photographers who have hitherto not been successful in any competition.

### New Apparatus, &c.

The "Ensign" Signal Clock for Time Development. Sold by Houghtons Ltd., 88-89, High Holborn, London, W.C.

Messrs. Houghtons have here produced a dark-room clock with several good points of specially practical importance. The clock is made for signalling by an alarm bell of long or short duration, the expiration of any period of time from one minute to one hour. The design is ingenious. The act of setting winds the clock. All that is necessary is to insert the key in the centre of the dial and thus turn the finger downwards (to the right) from the sixty position. It can



remain in this set position for any length of time, and is started on its period by touching a lever on the right-hand side of the dial. The finger then returns to the 60, and on reaching it sounds the alarm. If for any reason the operation which is being timed has to be interrupted, the clock can be stopped at once by the right-hand lever and restarted when required.

The alarm adjustment, as we have just said, is a good feature of the clock. It can be made to give a short, sharp ring-ting, or wound so as to sound a prolonged signal. The dial of the clock is bold and clear, the instrument conveniently mounted for hanging in the dark-room, and the price 12s. 6d.

### New Materials, &c.

**"Albumat" Printing Paper.** Sold by Charles Zimmermann and Co., 9 and 10, St. Mary-at-Hill, London, E.C.

As its name indicates, this new paper, which is one of the brands long issued by Messrs Zimmermann under the trade mark of "Crossed Swords," owes its special qualities to albumen, and is in fact a modern revival of the matt albumen paper of more than forty years ago, with the important differences, however, that it is supplied in a sensitive condition ready for use, and is obtainable in a number of extremely beautiful surfaces, far exceeding the quality of those which printers of the sixties and seventies had at their disposal. Albumat, though an albumen paper, has nothing in common, as regards appearance and working, with the later albumen paper of the semi-glossy kind, i.e., the albumen process as it is worked at the present time. It is a paper of a quite matt or natural surface resembling a photogravure print as much as anything else, and, moreover, it is amenable to the production of a variety of very fine tones by the use of the gold and platinum baths, now customary in the manipulation of collodion-chloride paper. Thus, the paper does not involve the tendency to blister in the baths or crack in the final stages for the simple reason that the albumen vehicle of the silver salts is so conveyed into the substance of the paper that the handling of the prints is precisely that adopted in the case of plain salted paper. The difference in keeping quality of "Albumat," however, will be understood when it is stated that the makers guarantee it to remain ready for use for at least four months.

So much for the general properties of the new paper. The manipu-

lation can be described in a few words, and we can then pass to consider the various admirable varieties which are obtainable. A fine range of tones from warm brown to blue-black and black are produced by (1) Simple gold toning; (2) Platinum toning alone; or (3) Gold toning, followed by platinum. The recommended baths are:—

Water .....	20 ozs.
Acetate of soda .....	22 grs.
Carbonate of soda .....	4½ grs.
Chloride of gold .....	1 gr.

or

Water .....	20 ozs.
Sodium tungstate .....	3 grs.
Borax .....	45 grs.
Chloride of gold .....	1 gr.

and

Water .....	30 ozs.
Chloroplatinite of potassium .....	15 grs.
Phosphoric acid (1.120 S.G.) .....	½ oz.

which are used pretty much as with collodion papers, except that toning is very much more rapid than with papers of this class, and on this account care must be taken not to over-tone.

Exactly a dozen different varieties of "Albumat" are offered, all of a kind which are particularly fitted for the purposes of the professional photographer. The characteristics of these papers are not easily described, and therefore we may advise the purchase of the sample packet of one piece (6 x 4½) of each grade. We may, however, speak of the effect, as we see them in prints which we have made on these various descriptions of "Albumat." "Smooth," "fine grain," and "coarse grain" are the titles of three distinct surfaces of the paper. The first is a quite smooth paper, yet with the beauty of its natural surface. Nos. 1 and 2 are a thin and thick paper of this class, and No. 3 is a thick but cream paper of the same surface. The next degree in roughness of surface is the "fine grain," fine enough for cabinet work of the bolder kind, and very suitable for larger portraits. It is represented by Nos. 4 and 5, white and cream respectively. The rougher "coarse grain" (Nos. 6 and 7, again white and cream) is not a very rough paper. Both varieties are thick paper, eminently suited for the folder method of production, owing to the substance and flatness of the prints. The remaining five papers (Nos. 8 and 9) are white and cream varieties of a so-called "bank" paper of peculiar pebbled surface, giving an effect which is bold but distinct from the roughness of Nos. 6 and 7. The "half-tone" white and cream (Nos. 10¹ and 10²) possess a structure somewhat resembling a half-tone print, and are among the papers which most attract us from their novelty and delicacy, though the result of printing on them is perhaps harder to describe than in the case of any other of the papers. Lastly we come to No. 11, a Japanese vellum Albumat-sensitised, and with all the beauty of the material.

We have said enough, we believe, to show our professional readers in particular that the twelve varieties of "Albumat" supply the means of producing a number of attractive styles of photographic portraits, and that a trial of them should repay the photographer who is anxious to convince his customers of his ability to offer them something both excellent and different. We need only add that Nos. 2, 5, 10¹, and 11 are put up in packets, and that all the other brands are stocked by Messrs. Zimmermann in sheets at prices which vary from 25s. to 35s. per quire. Full particulars of the prices and sizes of the sheets are given in the "Albumat Circular."

**STUDIO DECORATION.**—Messrs. F. E. Jones and Co., of 22, Gray's Inn Road, London, W.C., have sent us some photographs showing studios decorated by themselves for several well-known photographers. Messrs. Jones make a special feature of the tasteful use of oak panelling, and the effect obtainable by this simple and not very expensive method certainly should encourage those who are anxious to give a handsome appearance to their establishments to put themselves in communication with Messrs. Jones. Photographs, such as we have before us, give a very fair idea of the effect obtainable, and Messrs. Jones are ready to give an estimate from plans of the rooms in which the work is to be done.

**BUSINESS BAROMETERS.**—Messrs. W. G. Systems, Ltd., of Craven House, Kingsway, London, W.C., send us specimens of the squared sectional paper issued by them for the charting of business returns,

expenses, profits, or other business moneys or items in a form which admits of variations being seen at a glance. The paper is ruled for daily, monthly, or three-monthly use, and the advantages of the material to both technical and business managers are sufficiently obvious to us to recommend inquiries, for samples and particulars to the W. G. Systems, Ltd.

## CATALOGUES AND TRADE NOTICES.

**THE TELLA CAMERA Co.**, of 68, High Holborn, London, W.C., have issued a list of second-hand and reduced apparatus and accessories which includes a large variety of hand and stand cameras, lenses, enlargers, lecture lanterns, etc., all of which the firm guarantee to be in perfect working order. The prices appended to the various items seem to be exceedingly reasonable, and photographers desirous of making changes in, or adding to, their photographic outfit would do well to procure a copy of this list of bargains from the above address.

**ENLARGING AND PRINTING.**—E. W. Bowes and Co., 16, Ethelred Road, Shepherd's Bush, London, W., have issued a very clear printed price list of their enlarging and printing work in bromide, carbon, platinotype, and of other trade work done by them. Messrs. Bowes undertake large and small commissions for professional photographers, and their electric plant enables them to guarantee prompt delivery. The list is sent free to bona-fide readers of the "B.J."

**RETOUCHING AND MINIATURE PAINTING.**—Mr. G. R. Henderson, 16, Ellison Street, Hebburn-on-Tyne, sends us a card of prices for miniatures on ivory-carbon prints, from photographers' negatives. The prices are moderate, and the work, as we expect of Mr. Henderson's studio, of high quality. The miniature being a profitable item in the photographer's, there is good reason to become acquainted with the firms making a special feature of its production.

**ROSS, LTD.**, 3, North Side, Clapham Common, London, S.W., have just issued an abridged list of lenses, cameras, and other apparatus of their manufacture, as fitted by them with one or other of the optical attachments. The list includes particulars of the large aperture lenses made by this well-known firm.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

SATURDAY, MAY 16.

Liverpool Amateur Photographic Association. Excursion to Llangollen.  
South London Photographic Society. Excursion to River Thames.  
Manchester Amateur Photographic Society. Ramble to Haigh Plantations.  
Haigh Hall, Wigan.  
Chelsea and District Photographic Society. Excursion to Greenford.

MONDAY, MAY 18.

Harrow District Photographic and Scientific Society. Demonstration, Kodak Limited.  
Bowes Park and District Photographic Society. "The Wonders of the Heaven as Revealed by Photography." C. P. Butler, A.R.C.Sc., F.R.P.S.  
South London Photographic Society. "Further Notes on the Oil Process." A. R. F. Evershed.

TUESDAY, MAY 19.

Royal Photographic Society. "Some Examples of Architecture in Ireland." Chas. H. Oakden.  
Hackney Photographic Society. "Lantern Slide Making." F. E. Roope.

WEDNESDAY, MAY 20.

Tunbridge Wells Amateur Photographic Association. Members' Lantern Evening.  
Central Technical College Photographic Society. "Some Points in the Development of a Photographic Objective." Val. H. Mackinney and H. C. Patey.  
North Middlesex Photographic Society. "The Use of Apparatus in the Field." H. Stuart.

THURSDAY, MAY 21.

Optical Society. "Telemeters." J. Cheshire.  
Midlothian Photographic Association. "Architectural Photography." E. Brown. "One Man Show." R. M. Readdie.  
North London Photographic Society. "Handwork on the Negative." J. Rattle.  
London and Provincial Photographic Association. "The Donisthorpe Process." Frank Donisthorpe.  
Harrow Photographic Society. "Printing by the Donisthorpe Process." F. E. Bill.



## ROYAL PHOTOGRAPHIC SOCIETY.

MEETING held May 12, the president, Mr. J. C. S. Mummery, in the chair. The Chairman announced that Mr. John Sterry, in consequence of taking a voyage to the Antipodes, had been compelled to resign the treasurership of the society. The council had elected Mr. Leslie E. Clift in his place, and had filled the vacancy thus created on the council by electing Mr. C. H. Oakden.

It was announced that the following had been elected Fellows of the society: Herr R. Dührkoop, Dr. Lindsay Johnson, Mr. Thomas Anny, Mr. Harry E. Smith, and Mr. K. J. Tarrant.

Mr. Furley Lewis gave a short address as introduction to a new exhibition of portraiture by himself. He explained that the portraits on the walls were not made for exhibition, but were portraits of mere men done by him in the ordinary way of business. His aim had to be, first, a likeness of his sitter, and he had further made it his study to obtain prints which represented the good qualities of photography as a medium. Mr. Lewis's short, but interesting, address was much enjoyed.

Mr. Frank Donisthorpe then gave a demonstration of the process of printing his name, already described in these pages. He explained the method of treating a negative to absorb a dye in the undyed portions, and showed the production of prints by contact without light from a negative treated in this way.

LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.—Meeting held on Thursday, May 7, Mr. R. Beckett in the chair. Mr. T. Wilkinson described a method of making a negative from a positive as follows. He took a negative and printed it in a printing frame, upon either the slow negative paper as issued by the Rotary Company, or the Wratten slow plate, giving the exposure required to make a positive. This was then developed in an M. Q. developer, rather darker than it would be in the case of the positive, washed. After washing it was exposed to light under water until the Watkins meter registered one tint, and then bleached in the following bleaching solution:—

Potass bichromate .....	150 gr.
Nitric acid .....	1 dr.
Water .....	10 oz.

It was washed, and given two baths of the following, in order to remove the bichromate stain:—

Soda sulphite .....	1 oz.
Potass metabisulphite.....	15 gr.
Water .....	10 oz.

The plate was redeveloped in the M. Q. developer. Wash and fix in an acid bath, and finally wash and dry. This, he said, gave a reversed image suitable for carbon printing, for an ordinary negative the same should be made in the camera. Enlarged negatives could, however, be easily and cheaply made by the method. He passed round slides and prints by the process.

Mr. Haddon suggested that sulphurous acid in the clearing bath did not do the work just as well and be cheaper, and he asked why the Wratten plate gave good results, whilst other brands of plates did not.

The lecturer said that he had used some seven or eight brands of plates and they all fogged in the second development. Mr. Haddon thought that this might be due to the fact that the one plate was developed with pure silver bromide whilst the other was made with iodide of silver; but Mr. Wilkinson said that he had obtained good results with wet plates.

Mr. Haddon said that the iodide could not be the cause of the fog, as the wet plates it would be present. He thought that a pyro developer would give good results, the lecturer's statement to the contrary notwithstanding.

Mr. Teape had worked a similar process for making reversed images and obtained good results upon three or four brands of plates, but with the faster brands even of the same maker he found that fog resulted. He had put this down to the presence of iodine.

BROMOIL EXHIBITION.—The present exhibition of bromoil remains open at the "British Journal" house until Wednesday, May 27. It will be re-opened on Monday, June 1, at the "Levee" of Messrs. John J. Griffin and Sons, Ltd., Kingsway, the pictures can be seen until June 20.

## Commercial &amp; Legal Intelligence.

CANVASSING FRAUDS AT LEICESTER.—Last week, at Leicester, Ernest Lay, a porter, was brought up on remand charged with obtaining 6s. by false pretences from Lily Gibbons, on April 2; further on obtaining 2s. from Louisa White on April 28; and 8s. from James Hender Harris on April 3 and 4, also with intent to defraud. Evidence was now called in the last two cases, the allegation being that prisoner represented himself as in the service of the Fine Art Association, Derby, and obtained money on account of photographic enlargements, when he had not been in the direct employ of the association at all, and was not authorised to collect accounts. He had been occasionally engaged by a collector of the association to carry parcels. Prisoner pleaded guilty, and the Chief Constable stated there were five previous convictions against Lay, there being also twenty-six other charges of a similar nature to the present.—In each of the two cases dealt with prisoner was sentenced to three months' hard labour, six months in all.

CANVASSING CASE.—A photographer's canvasser named William Richard Meare was charged at Barnsley last week with having obtained 6s. by false pretences from a Cudworth miner named Charles William Hayes on March 26 last. Defendant was employed as a canvasser by the American Fine Art Association, and on the date named he took an order for an enlargement from Hayes, receiving 6s. as deposit, together with a silver Albert and two medals, which he took on the representation that they were necessary for the proper completion of the picture. No picture was forthcoming, and it was afterwards found that the chain and medals had been pawned at Wombwell.

## NEW COMPANIES.

LONDON NEWS AGENCY PHOTOS., LTD.—Registered April 24. Capital, £1,000 in £1 shares. Objects: To carry on the business as a news, photograph, and commercial photograph agency, but not any business competing with that of the London News Agency, Ltd. No initial public issue. Registered office, 46, Fleet Street, E.C.

## News and Notes.

LECTURES ON PRINTING PAPERS.—A course of three lecture demonstrations on "Papers for Printing" is being given at the Bolt Court School on Thursday evenings from May 14 to 28, 1908, inclusive, by Mr. R. W. Sindall, F.C.S. The syllabus for the two remaining lectures is:—Paper for magazine printing; the suitability of esparto and wood pulp for these papers; their manufacture; points to be studied by printers—register, surface, bulk, transparency, discoloration, and other qualities; paper for half-tone printing; the manufacture of "art" paper; the causes which have led to the use of a coated paper; precautions necessary in printing; the durability of the illustrations. All lectures commence at 8 p.m.

PICTURE POSTCARDS.—At a recent meeting of the German Geographical Society the idea was advanced, for the first time, to employ picture postcards as means of instruction in the schools. The postcard industry has made enormous progress in the last few years, and in the last few months cards have been brought into the market, illustrative of natural history, political history, and for use in instruction in the German language, which have met with the hearty approval of professors and teachers of repute. According to the American Consul at Magdeburg, the school museum at Breslau has undertaken to form a collection of these cards, and for this purpose the authorities have requested the various publishers to forward them samples of their output, that it may be determined to what extent they may be used for purposes of instruction. Further, two teachers in Leipzig have established a central bureau for postcards of all sorts, intended for purposes of instruction or collection. They have also developed, and offered for sale, two practical systems for the display and filing of the cards. These gentlemen select and arrange the cards most carefully, according to pedagogical principles. Such prominent educationalists as Harms, Tischendorf, Rudolf Schmidt, and others have

endorsed the plan of using illustrated cards as an aid in instruction, and even official bodies anticipate favourable results from them.—*"Journal of the Society of Arts."*

THE SUBURBAN AND PROVINCIAL DEVELOPMENT ASSOCIATION, of 29, John Street, Bedford Row, London, W.C., have added illustrated guide books dealing with the districts of Chichester, East Grinstead, Horsham, Lewes and Seaford to the series which they are issuing as useful suggestions to those who may be desirous of either changing their place of residence, or of selecting cottages, etc., for week-end visits. Copies of the booklets, which are well illustrated and contain much useful information concerning the districts of which they treat, may be had, post free, by applying to the respective town clerks.

THE AFFILIATION COMBINED OUTING will take place on May 23. The rendezvous will be at Ayot, near Hatfield, on the Great Northern Railway. Tea will be provided at the Red Lion Hotel, Digswell Hill, at 6.30 prompt. Tickets, 1s. 3d. each, can be obtained from the Acting Secretary, Mr. H. Philp, 66, Russell Square, W.C. Day excursion tickets at a fare and a quarter, 2s. 3d., can be obtained at King's Cross and Finsbury Park Stations by the trains leaving King's Cross at 1.15 p.m. and 2.30 p.m. Members of the North London Photographic Society (distinguished by a white rosette) acting as stewards will be in attendance by the Booking Office at King's Cross and Finsbury Park, and also at Ayot, to furnish any information that may be required.

## Correspondence.

*\*\* Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*

*\*\* We do not undertake responsibility for the opinions expressed by our correspondents.*

### EXPOSURE IN ENLARGING.

To the Editors.

Gentlemen,—In your note of May 1, on "Exposure in Enlarging," you assume that my rule of exposure is "a theory worked out on paper," and that alone. I can assure you it is the result of some thousands of adjustments and some hundreds of exposures with a gradometer, using three different enlargers during the past three years. One, a "Koresco," I tested for daylight enlarging, and found the ratio of exposure to be as I state. It was after I had found this experimentally that I worked out, mathematically on paper, the proof that it should be so. Then I tested for gaslight exposures with the same enlarger, fitted with incandescent light attachment (Welsbach mantle), and an 8½ in. condenser, and using a quarter-plate gradometer. I found that with certain adjustments I got the same ratio of exposures, and then proceeded to work out, mathematically on paper, the reason why. The projector used in that enlarger was the ordinary cheap lens, working at  $f/16$ , and the aperture was smaller in diameter than the conjugate image of the incandescent light formed by the condenser up to a 15 x 12 enlargement. Then I tried it with a Dallmeyer stigmatic lens, working at  $f/6$ , with the same result. Next I took a cheap combination lantern, with 5½ in. condenser, and later a similar lantern, with 5 in. condenser, fitted to take a Sanderson quarter-plate camera. These I also tested, using the same Dallmeyer lens as projector. The conjugate image of the incandescent light was larger than the aperture up to a 15 x 12 enlargement. When adjusted for a 21 x 16 enlargement the full aperture was larger than the evenly illuminated portion of the conjugate image of the light, and the disc at full aperture was not evenly illuminated. I stopped down to  $f/8$ , and the disc was then evenly illuminated. I continued to stop down to  $f/16$ , and there was still even illumination. Then as I continued to stop down illumination fell off. At the smallest aperture the illumination was bad. But I also noticed that in the centre of the conjugate image of the light there was a perpendicular bar of com-

parative darkness with a forked top, obviously the image of the support which carries the mantle. I am afraid to suggest that this might have something to do with the uneven illumination at the aperture. Hence in writing last week I was careful to suggest that the writer of the "Ex Cathedra" note should stop down until he got even illumination only, not indefinitely. I regret that I guess as to the aperture he used was incorrect. But I think he will find his Sin. R.R. working at  $f/8$  also transgressed the essential condition of my "theory," and that the diameter of the work aperture was greater than the diameter of the evenly illuminated portion of the conjugate image of the light. If he stops down until the evenly illuminated portion of the image just covers the aperture he ought to get even illumination of the disc. I get it with my lantern. If he does not get it with his it must be the fault of the lantern, not the fault of the "theory."

With regard to the case of small and powerful lights, I do not see that my rule of exposure will hold good for any light and any lantern. I suggest it will, under the conditions laid down. But at present my anticipations in that respect is a "theory," though "theory" which I hope to prove by practical demonstration in the case of Nernst and arc lights, as I have proved it in the case of the incandescent mantle.—Yours faithfully,

JOHN NIXON.  
Rydal, Ingleside Grove, Blackheath.

## Answers to Correspondents.

*\*\* All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 2A, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.*

*\*\* Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.*

*\*\* Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & CO., 2A, Wellington Street, Strand, London, W.C.*

*\*\* For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 2A, Wellington Street, Strand, W.C. undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, &c. Two unmounted copies of each photograph must be sent with the fee.*

### PHOTOGRAPHS REGISTERED:—

- J. H. Smith, 1, Waller Hill, Skipton, Yorks. *Photograph of Skipton Militia Band.*
- Mrs. H. C. Sutherland, Cooleville, Clogheen, Cahir, County Tipperary. *Photographs of Kittens.*
- E. R. Yerbury, 1, Hanover Street, Edinburgh. *Two Photographs of the Lord C. J. Guthrie.*
- G. H. Morgan, 90, Shakespeare Street, Southport. *Photograph of Carlisle United Football Club, First Team, 1907-8.*
- H. Watson, 435, Langsett Road, Sheffield. *Photograph of a Combined Photograph and Drawing of the New Soldiers' Home, Langsett Road, Sheffield.*
- J. W. Fyfe, 27, Whitcombe Street, Aberdare, Glamorganshire. *Photograph of Welsh International Association Football Team, 1907 and 1908.*
- J. L. Hart, 52, Nantwich Road, Crewe. *Two Photographs of Wm. E. Harris Professional Footballer.*

Owing to the demands on the space in this section, a number of replies are held over until next week.

B. E. W. (Bradford).—Thanks for letter. We shall have something to say on the subject shortly. You can plate-mark prints in an ordinary rolling press in this way. Get a metal plate the size required and place it on the bed of the press. Place the mounting print in position on it, and on that lay two or three thicknesses of printers' blanketing, and pass the whole through the press. This will give you a very good plate mark.

PUTTY FOR GLAZING STUDIOS.—Will you kindly give me the name of the firm who supplies putty for glazing studios—it does not do



! You mentioned it some years since in the JOURNAL, but I not trace it.—NERO.

"We have no recollection of the name of the firm mentioned me years since." However, in practice, nothing is better than nary putty, if it is made with good raw linseed oil. We d advise you to make it for yourself, as that sold at the oil s is often made with common cheap oils, not linseed. It is necessary to knead whiting with the oil to the consistency ired.

BROMIDES.—I have an order in to print and tone a batch of ide cards similar to enclosed. Could you oblige me by letting know, through your journal, process of toning. I am in the t of using the sulphide process, but find the colour much r than sample.—BROMIDE.

ie tones vary a good deal with different papers, but we should hat you can get a tone such as that of the card you send by hypo-alum method, which is that largely used by commercial urers of cards.

QUERY.—Enclosed please find rough sketch of a building ally built as a carpenter's workshop. As it is now unl thinking of converting into a studio. I would be glad to y your suggestions re lighting, especially if you think a top is necessary, and also if you would block up any of the three ews, and which? As you will see, the windows all face west, ll have to reglaze with ground glass. Could the place be used e modern style without top light, or is top light imperative? modern style, what alterations in lighting would be necessary? ide windows are three in number, each measuring 90 inches 0 inches high, and come to within 3 feet of floor. There is a foot of brickwork above windows to get to the slate ing. I would be glad if you would let me have a reply to n the next issue of "B.J."—H. J. LE BRUN.

the sketch shows the side light to the ridge of the building so low we do not see that you could get standing figures evenly d. We should suggest that you introduce some top light, y glazing part of the roof, half the slope, commencing five feet from the south end, and ending about 14 feet from end. The foot of brickwork above the windows had better moved when making the alterations, as that, if left, would up the light at an important part.

P.O.P.—Nearly all P.O.P. and postcard makers advise when g with the sulphocyanide bath that the prints be well d to get rid of all free nitrate. I should be glad to have opinion on this advice. My experience is that such is pre al to the toning. The longer the wash the worse the results. t, one of my friends does not wash at all.—DELTA.

believe that all who have investigated the toning of silver are agreed that the silver nitrate should be washed out. a we are not prepared to say why this washing should be ary before the sulphocyanide bath. We are inclined to that others' experience is contrary to yours, and that many wash the prints because they consider the washing to e the ultimate tone. A good tone is more or less a matter onal opinion.

—The best reply we can make to your queries is to sug at you send your young friend one or two copies of the " from the small advertisements in which, on pages ii. and e can judge better of her prospects here than in any other

ING PAPER.—Will you please give me a formula to make ing paper, glossy or matt, and if the same formula will cream crayon paper. I am experimenting on a small coat-chine, and would like to try a self-toning paper.—W. C. ula are to be found only in patent specifications, and we no more than refer you to recent issues of the "Almanac," abstracts of these latter have appeared, viz., 1906, p. 816, 07, p. 785.

ENOL.—I thank you for diamidophenol formula in this "B.J." (1) Will this keep in a well-stoppered bottle; is the bisulphite, which I saw in a formula as "liquid ite," metabisulphite or sodium bisulphite?—H. S. P. C. es, it will keep in the strong stock solution for a fairly

long time. (2) Sodium bisulphite,  $\text{NaHSO}_3$ . Metabisulphite is a different substance.

POSITIVE FROM NEGATIVE.—I thank you very much if you will tell me if there are any means of making a negative into a positive, "without contact printing or using a camera," by treating it chemically.—SIMPLEX.

If the negative is a thin and somewhat under-exposed one with quite clear shadows, an easy means of producing a positive from it is to bleach it in mercury bichloride solution, wash thoroughly, and apply a *very* weak (about 1 grain per oz.) solution of sodium sulphite for a few moments. Thus treated, the negative has the appearance of a positive when viewed from the glass side. It is dried and backed up with black velvet from the film side.

FOGGED NEGATIVES.—I have been taking a few curious things in India on my tour in this country with my master, and generally the work is outdoors. I always take two plates of each subject, and invariably I find plates with these kinds of marking on them; one plate is unaffected, while the other is. Sometimes both are affected, and sometimes both are good. Please inform me the cause and remedy, if any. Climate has nothing to do with it. Even in cold climates I had markings. Two plates developed in same developer, one had marking, other none. Pyro soda at 90 deg.

There are two reasons why we cannot help:—(1) The negatives —packed between cardboard only—arrived in a thousand pieces; and (2) you give us no clue to your method of working, or the materials you use. We would assist you if we could.

LANTERN LENS.—1. I have the usual lantern for projection, but would like to make the distance between the lantern and screen much less and keep the picture still the large size. Can you inform me how I may do so?—MOVR.

1. You need a lens of shorter focus. If you said what focus your present lens has we could advise you, but you can judge for yourself by referring to the table of lantern distances in the "Almanac." 2. We cannot trace the receipt of a query on the printing of P.O.P. by artificial light. An enclosed arc lamp is the best means, the prints requiring from five to fifteen minutes. If you use a weaker light, say incandescent gas, you must develop, and the process is not very satisfactory.

WASHER.—Apparently the stains are due to imperfect fixing and washing. As you have not mentioned the paper used, the method of toning, or given any data whatever, we cannot answer you further.

REWOG.—The process is a trade secret. We do not know it.

RENOVATING FRENCH POLISH.—My cameras, mahogany, and stand have become very dull through the French polish having lost its brightness. Is there anything I can apply to brighten it up a bit, as I cannot afford just now to send the things to the makers to be repolished?—MARCUS.

There are many French polish "revivers" on the market, and they may be had at any of the oil shops. The following is a recipe: Linseed oil, half a pint; spirit of camphor, 1oz.; vinegar, 2oz.; butter of antimony (tri-chloride of antimony), ½oz.; ammonia, ½oz. Although this is a very old recipe, it is a very good one, as we know from having used it. Before the reviver is used the work should be thoroughly cleaned by washing it with soap and water.

BREAKING AN AGREEMENT.—Three years ago I entered the service of — and Co., on a three years' agreement, at a progressive salary. They have now served me with a notice to leave at the end of the first year—the first of next month. The reason, they say, is that business is too bad to keep me on.—OPERATOR.

If the agreement is rightly framed and properly stamped, you cannot be compelled to leave. The falling-off of business is not a valid reason for breaking a properly-made agreement. If you are really discharged before the termination of the agreement, you will have good cause for action for damages for wrongful dismissal.

LENS QUERY.—I recently bought, for 15s., at a pawnbroker's, a lens by Dallmeyer, marked "Actinic Triplet." The front lens is smaller than the back, and there is a still smaller lens in the

centre of the tube. The back lens is somewhere about 3in. in diameter. I bought the lens because Dallmeyer's name is on it, and I concluded that it was good for some purposes. I shall be indebted if you will be good enough to inform me what they are and what size plate it will cover?—J. K. SIMPSON.

The triplet is an old form of lens introduced many years ago for similar purposes to the rectilinear lens, which has quite superseded it now. It is slower in action than the RR, but still it produces good work. As the focus of the instrument is not stated, we can give no idea as to what size plate it will cover. On reference to an old price-list, however, we see that a lens with a back diameter of 3½in. will, with the full aperture, cover 10x8, and when stopped down 15x12. When the centre combination, which is a negative, is removed, it can be used for portraits of the half-plate size, and is then nearly as rapid as an ordinary portrait lens.

**DAMAGED GLASS POSITIVE.**—We have an old collodion positive brought to us to copy, and restore if possible. The picture itself seems all right, but is covered with minute cracks or fissures, which do not seem to show so much when looked at in some lights as in others. Can you kindly tell us the best way of dealing with it, as it belongs to a good customer, and if we can get a satisfactory copy it may possibly lead to an order for an enlargement at a pretty good price. Awaiting the favour of reply in an early issue.—J. and Co.

Without seeing the picture we cannot advise definitely. However, in all probability it is the black varnish on the back of the plate that has cracked. If that is the case the matter is simple. Scrape it off the glass and apply fresh, and the picture will be as good as at first. Sometimes, however, the black varnish was applied on the front of the picture, in which case we fear little can be done, as, probably, the collodion film, as well as the varnish, has cracked. Sometimes another coat of black varnish will improve matters, but this treatment is more or less risky. Supposing the varnish is on the face, the best thing to do is to place a piece of black velvet on the picture and then copy it from the glass side. Often, when this is done, the cracks are not very apparent in the copy.

**REVERSED PICTURE.**—I sent a portrait negative to one of the advertisers in your paper to have a 20 x 16 bromide enlargement made from it. When I received it I was surprised to see that the portrait was reversed. What should be the right side was the left. I returned it with the request that another should be done to replace it. I received a reply that mistake had been made, but as the enlargement was a portrait it did not matter, and at the price they did their work it would mean a loss to them to make another. They, however, said they would do another at half-price. Ought the people to make any charge through their mistake?—R. S.

This is a simple thing on which we should have thought any photographer would not require advice. You should refuse to accept the picture and pay for it, and demand the negative back.

**DAMAGED MIRROR.**—I have entered into an arrangement with an engineering firm here to take photographs of the machines they make for their catalogues, but the negatives must be reversed, as regards right and left. I purchased a reversing mirror and obtained satisfactory pictures with it. In time it became tarnished and I attempted to polish it, according to the directions given. But directly I rubbed it with the polishing pad the whole of the silver came off the glass. I have sent it now to be resilvered, and shall be glad if you can tell me how the mirror can, when necessary, be repolished without this trouble, as I am told they can be repolished many times?—C. WADE.

It is clear that the silver surface was damp when the polishing was attempted. When in that state the silver film is but slightly adherent to the glass, though it is firmly so when quite dry. In future, before beginning to polish the mirror place it at some distance in front of the fire, for a time, so that all moisture is driven off and the glass is made quite warm. Then it may be polished without fear of damage. When out of use mirrors should be protected from the air; they will then retain their brightness for a long time. They should always be stored in a dry and warm place.

**RIGHT TO PHOTOGRAPH.**—I shall be very grateful for your opinion on the following little matter: Last week I set my camera up on the road before a very pretty old house. Just as I had exposed the plate a gentleman came running out and asked what I was photographing his house for. I told him it was for postcards which I was publishing. He asked me for my name and address which I gave him, thinking I might get an order from him. I then got into a passion at what he called my impudence in photographing his place. He then told me that if I dared to publish the pictures he would at once place the matter in the hands of his solicitors, and adding that to prevent "this sort of nuisance" some time ago he had the house photographed and made the picture copyright, so that any other pictures of it would be infringements of it. An early reply will oblige.—J. KEBOURN.

Evidently the gentleman is under a misconception as to his supposed rights, or he is trying to bluff you, possibly the latter. The making of a photograph of the house copyright does not make the house itself copyright. Anyone is free to photograph the latter and do what he likes with the pictures. You cannot be restrained from publishing your photographs, however your property may be threatened.

**MAKING CARBON TISSUE.**—I wish to make some carbon tissue my own use, as I cannot get the particular colour I want by purchase. I shall be glad if you will inform me if the formula given in Wall's book on the carbon process is the same as that employed by the best makers of the tissues now on the market. If not, you give me it?—T. A. WALTHES.

This is a query we cannot answer, as we are not in the secret of the various commercial tissue manufacturers. The formulae given in the book are typical of those that have been published, and it may fairly be assumed that they will answer. Of course, commercial firms do not publish what they have gained by years of experience and research, they naturally keep that to themselves. We should say that you would find it far better to buy the tissue than attempt to make it yourself in small quantity, and you will be hard indeed to please if, amongst the scores of colours and tints now on the market, you cannot find one to suit you.

**CARBON PICTURES ON JAPANESE PAPER.**—In the "B.J." of January there is an article on producing carbon prints direct on Japanese paper without its being wetted. I am anxious to make such pictures and I have tried, but with very little success and with a waste of this expensive paper. But I should say at once that I have not followed the instructions you gave in their entirety because I have used the ordinary flexible support instead of indiarubber support you mentioned. I find that in applying gelatine to the picture that the light tones wipe off. Is there any way of avoiding that, as I do not want the trouble of making rubber support?—A. F. WILKINS.

In the article it was specially mentioned that the trouble referred to would generally arise if the usual flexible support were employed and we do not know of any way of avoiding it. The preparation of the rubber support involves but little trouble, and with this there is no difficulty whatever. We expect that if you desire to produce these pictures with certainty you will have to employ rubber-coated paper as the temporary support.

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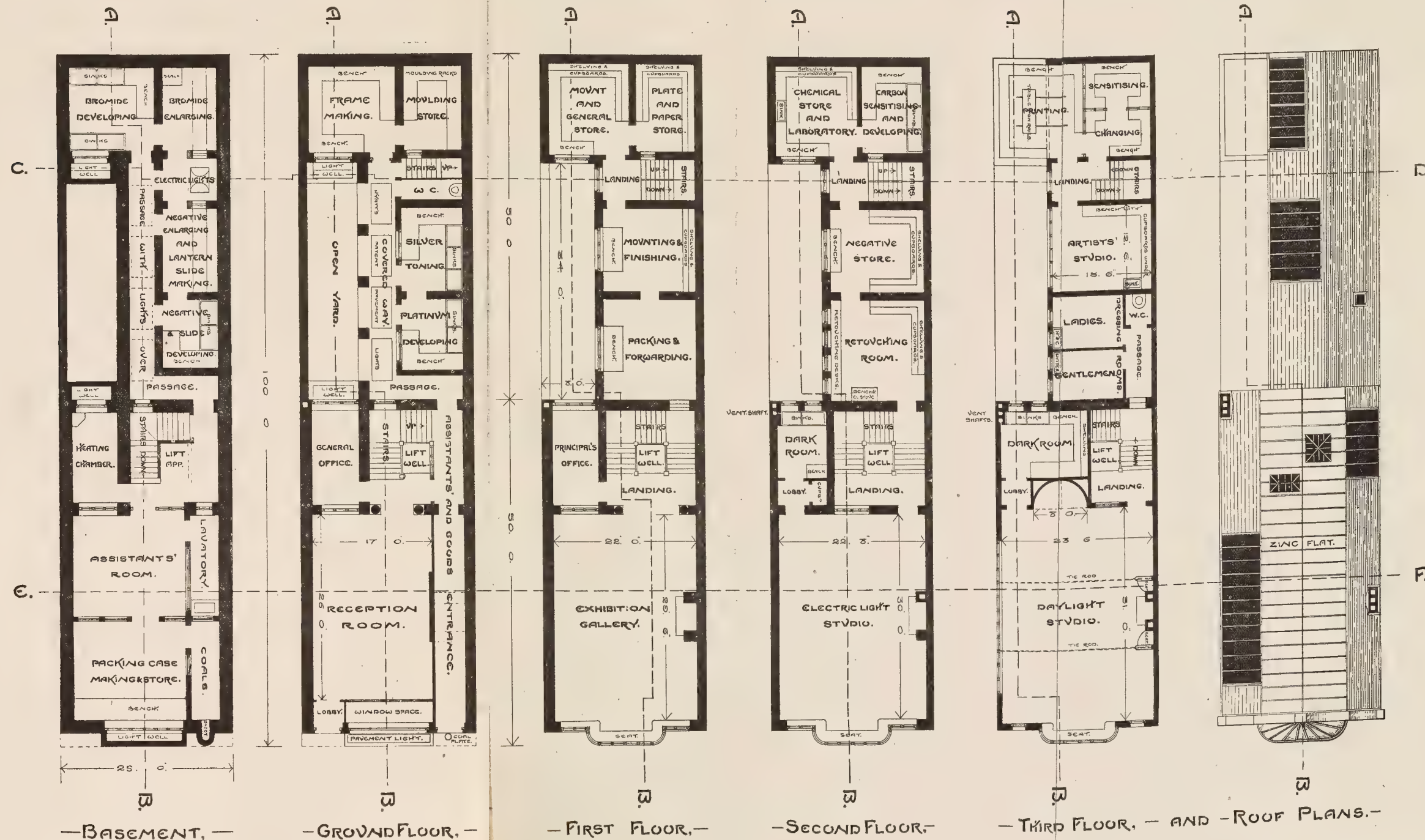
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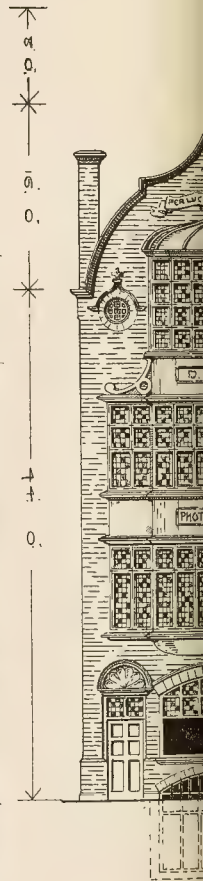
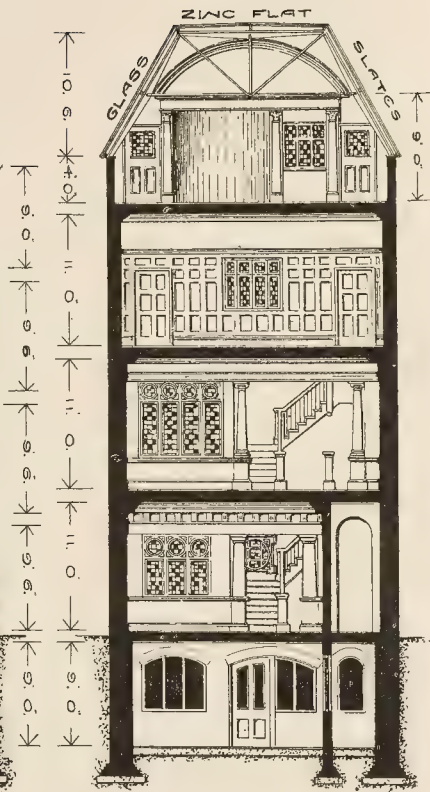
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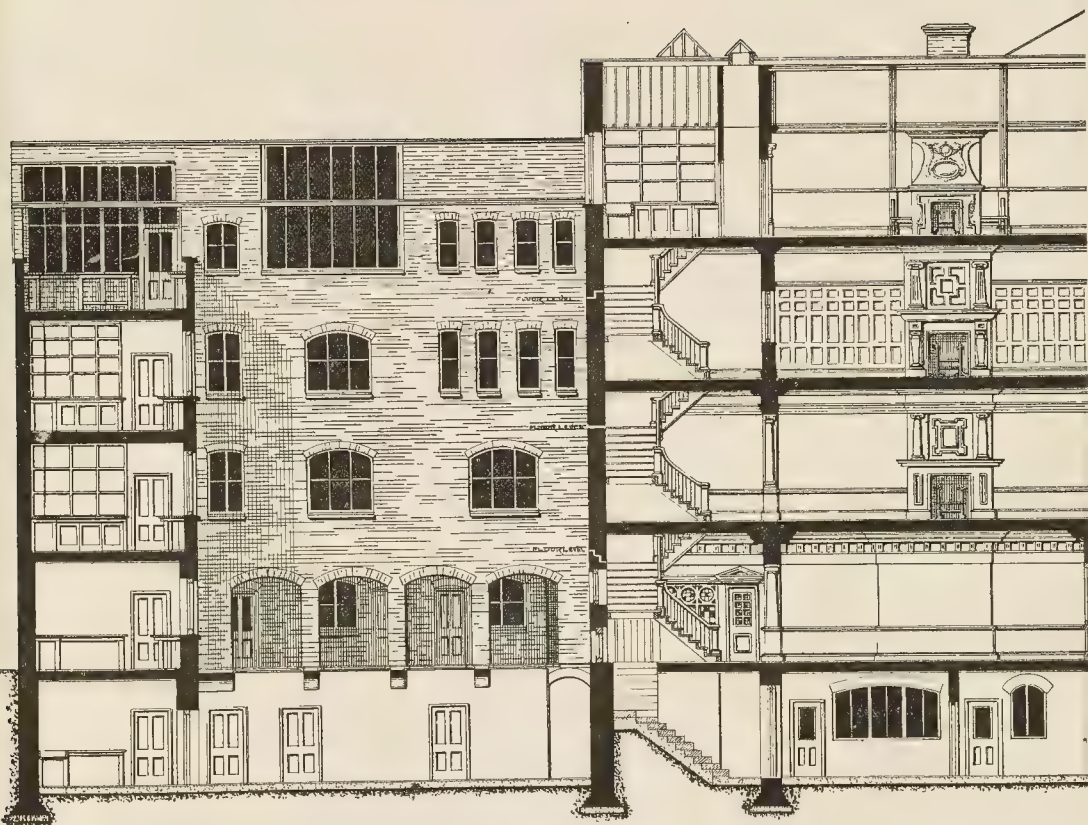
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# PHOTOGRAPHIC PREMISES



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# THE BRITISH JOURNAL OF PHOTOGRAPHY.

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## SUMMARY.

**Bromoil Exhibition.**—The present exhibition of bromoil prints at the house of the "British Journal" will close on Wednesday May 27. It will be re-opened on Monday, June 1, at the "adevous" of Messrs. John J. Griffin and Sons, Ltd., Kings- where the pictures can be seen until June 20.

**Modern Studio.**—Mr. Drinkwater Butt's articles on this subject, mentioned in our issue of March 27, conclude on p. 395-6.

**Our leader** this week contains some useful hints with regard to repair of broken negatives. (P. 391.)

**Our commerce** some articles by David J. Howell on Canada as a for photographers on p. 393.

**An important improvement** in the ozobrome process worked out by Mr. Manly is described on p. 392.

**The use of the camera for making business photographic records** the use of contractors and manufacturers is dealt with in an article commencing on p. 396.

**An important paper on the colour-filter and the isochromatic plate** in stereo-graphic photography, by Mr. R. J. Wallace, commences on p. 398.

**An article on the sizes of stereoscopic prints**, by L. Stockhammer, appears on p. 400. We comment upon it on p. 390.

**Photographic Chemistry.**—The syllabus of Dr. Scott's lectures at Royal Institution will be found on p. 406.

**Another free photograph case** is reported in our "Commercial Legal Intelligence." (P. 406.)

**A new retouching medium** is described by a correspondent on p. 407.

## EX CATHEDRA.

### The Photographic Convention.

By the time these lines appear the full programme of the Brussels meeting of the Photographic Convention will have been published. Its pages show the completeness of the arrangements for the convenience of Conventioners, and the excellence and variety of the excursion and literary fixtures. We are glad to learn that the applications for membership up to the present constitute a record among recent meetings, and that without a doubt the Brussels meeting is assured of a success which will be a fitting appreciation of the hospitality of the Association Belge, to whose initiative the selection of the Belgian capital as a meeting-place is due. Sir Cecil Hertslet has himself taken a great interest in the arrangements, and, with Captain Van Berger and M. Van der Kindere, has done a great deal in the preparation of the week's programme.

\* \* \*

### The Colour Exhibition.

In transferring its annual exhibition from autumn to summer, the Society of Colour Photographers has no doubt done well. It has certainly shown its courage in holding its second exhibition within six months of the first, but the support both of its members and of other colour workers turns out to have justified this course of action. The exhibition of last September-October brought together a representative collection of screen-plate colour transparencies, among the earliest to be seen in this country. The forthcoming show will amount to a demonstration of the later and more perfect results by the Autochrome process, and will in addition show the continued progress in three-colour work on paper. In response to many requests, the exhibition will remain open every evening of the week until 8 p.m., a convenience to the public which has been made financially possible by charging the sum of sixpence for admission to the exhibition.

\* \* \*

### On Scrapping Pictures.

According to a newspaper report, M. Claude Monet has created a sensation by destroying a number of his own paintings that he did not consider worthy. It is stated that the pictures represented 'three years' labour and a probable market value of £20,000. Whatever the value of the pictures, the occurrence is an instructive one. It is by no means unusual for a painter who has some respect for his work to destroy the result of, perhaps, many months' work, because he does not think it good enough, and because he cannot see any way of improving it. The total amount of what ordinary persons would probably regard as fine works of art annually destroyed by painters would probably astonish the general public if they could only get some idea of it, but it is greatly to be feared

that the destruction of a finished photograph is a thing that seldom happens, however bad it may be. The manner in which a photographer will cling to a piece of rank rubbish in the way of a photograph is painful at times. His only excuse is often that he cannot secure another negative of the subject, and the idea that a bad picture is worse than none at all never seems to occur to him. Many photographers could by stringent weeding out of their bad results produce a small collection of really good work that would enhance their reputation and be worth seeing. By keeping the bad samples they simply lower the value of the whole collection, and lose credit. The example of M. Monet may convert some of them, but we fear the movement will not spread as far as it might, for, after all, it is mainly a matter of training. An artist is trained to look upon bad work as more or less criminal, or at least immoral; therefore he has little compunction in destroying it.

\* \* \*

#### Effects of Monocular Relief.

Prof. Gustave Michaud, in the "Scientific American," has recently drawn attention to some effects of monocular relief that he seems to think demand a new explanation. Taking a simple geometrical figure, such as a circle, he draws upon it lines in various directions, and considers that by so doing he has introduced a certain amount of what he calls artificial distortion that gives an appearance of relief to the whole diagram when it is viewed with one eye or through a pinhole. The explanation is, however, much more matter-of-fact. All that he really does is to introduce lines that give a more or less accurate effect of perspective, and it is fairly well known that a drawing in perspective of a simple object, especially when correctly shaded, will show very obvious relief when viewed monocularly from the right view-point. The effects that he obtains are due to nothing more than a style of drawing that more or less simulates a true perspective effect, and in some cases he appears to aid the effect by a rough attempt at shading. Suppose we represent a sphere by a circle. This will show no effect of relief; but if we add to it lines representing meridians a spherical effect is imparted at once, even if the meridians are not quite correctly drawn. On one of his diagrams he has drawn curves that resemble two sets of great circles at right angles to one another, and the crowding of these circles near the margins has introduced an appearance of shading, the result of all which is that an effect of a hemisphere is obtained when we view the drawing with one eye from a certain distance. Sometimes he uses a pinhole to assist the illusion, but this only aids when the right viewing-point is very near the paper, as it is in some of his examples. This is the true explanation of the action of the pinhole, though he has evolved a different theory that we cannot quite follow, and of which we cannot obtain any experimental confirmation.

\* \* \*

#### The Size of Stereoscopic Prints.

On another page we publish an article by M. L. Stockhammer, in which the advantages of short-focus lenses and small wide-angle views are fully set forth. There are, however, one or two points raised in the article that require further consideration. The objection to long-focus lenses is that the large images produced overlap one another to such an extent that a very small field of view is left. It is stated that the more the lenses are separated the less do the two fields overlap, and the greater is the width of image permissible; but, in saying this, the author seems to have forgotten some important points. Unless an extra long plate is used the amount of image saved in the centre of the plate is lost again at the ends, so that little or

nothing is gained. As a matter of fact, if the subject near object, more of the image is lost, because mounting the prints they must be placed nearer other than if less widely separated lenses had been used. Then, again, the writer states that the width of the images is limited by the separation of the eyes, but with prismatic stereoscope this is an unnecessary limitation. Prisms permit the use of wider prints as a wider mounting separation is required. As we have before explained the proper separation to be observed between corresponding distant points is the separation of the eyes added to the width of one prism, which amounts to nearly the same with most people when  $\frac{3}{4}$  in. prisms are used. How these discrepancies in the author's arguments more or less balance each other, and the objections he has to his apparatus with long-focus lenses are only too well known in fact. We do not, however, think that his remedy is altogether the best one possible. It is, no doubt, the best for the single-plate cameras and the "Brewster" type of stereoscopes in ordinary use, but such types of apparatus are by no means the most desirable ones that could be adopted. By the use of reflectors both cameras and stereoscopes could be modified so as to render large images serviceable, and it is on these lines that we should be inclined to look for improvements. The Wheatstone stereoscope was a far superior instrument to the refracting stereoscope that Brewster claimed so much for, and can be seen from the article in our issue of April 22. The Dixie method of stereoscopy, both cameras and stereoscopes can be revised in such a manner as to render the use of large views quite feasible. So long as we keep the present type of apparatus M. Stockhammer's arguments in favour of short-focus lenses will hold good, but there is no specially valid reason that we know of for keeping to this type at all.

\* \* \*

#### The Packing of Negatives.

Breakages due to the careless packing of negatives are pretty frequent, and just recently we have received complaints to the effect that retouchers are very prone to be careless in this respect. A correspondent complains that retouchers who advertise for work return negatives, which have been entrusted to them to see what they can do, simply wrapped up in a piece of paper, so that they are their owners smashed into fragments. Our correspondent remarks that in such cases they do not get any work, and this is the very point, one would think, the culprits themselves should have thought of in the beginning. There is no excuse for such carelessness, for it is a perfectly simple matter to pack a negative so that it will pass through the post safely. An ordinary sound plate-box well stuffed with soft paper, and stiffened with a few pieces of boards that photographers always have handy, will be found to be if the whole is well wrapped in corrugated packing. A wood box is not a difficult thing to find, or even a very expensive thing to purchase, if the safety of a valuable negative is in question. In cases such as the ones quoted by our correspondent, the owner can and should take the precaution of sending his negatives to the retoucher in a safe box that can be used for their return. If he insists that the negative is to be returned in the same package then the retoucher will be left without any excuse for the loss. It is, however, only fair to add that this is a case of carelessness is not confined to retouchers by any means. We ourselves have had considerable trouble with our photographic secretaries. We have sent them valuable negatives packed in special wood boxes, but we have seldom seen those boxes back again. Generally the negatives have re-appeared in cardboard and brown paper packings, in spite of the precautions we observed



ending them away. This kind of thing renders one reluctant to run risks, and it is distinctly unwise policy on the part of those responsible.

## BROKEN NEGATIVES AND THEIR REPAIR.

NEGATIVES, as everyone knows to his cost, occasionally get broken in the printing frame, and often in other ways. When one breaks in the frame the reason, usually, is that the rebate of the latter is uneven, for the glass at present used for dry plates is rarely sufficiently unequal to cause a defect. If, as is more likely, the frame is the cause of the fracture, it should at once be discarded or broken, so as to avoid future trouble. However, it generally happens, owing to the "cussedness of things," that when a negative gets accidentally broken it is a valuable one, commercially, or one that cannot be retaken. In such an event it is worth going to considerable trouble to effect repair, and the process, after all, is not so difficult a matter as some seem to imagine it.

We will, therefore, give instructions as to the way by which even badly broken negatives may be made at least serviceable, and, to professionals, often still profitable in the way of future orders. In some instances the negative may be made in every way quite as perfect as if it had not been broken at all. If, for example, a negative gets cracked in the printing frame, it is more than probable that the gelatine film is not broken through. In this case the matter is a very simple one to deal with, as the uninjured part can be removed from the broken glass intact and be put on to another plate, when it will be quite as good as the original.

In this case the first thing to do is to place the negative carefully so as to avoid breaking the film—lay it upward on another plate a size or two larger. The next thing is to harden the film with formalin or chrome to prevent its expansion when removed. This is best done by putting the two plates in 10 per cent. formalin for ten minutes or a quarter of an hour; but before doing that it is well to cut through the film an eighth of an inch from the edges of the plate with a penknife. After treatment with the formalin the plate is slightly rinsed under the tap and immersed in a dish of water to which a few drops, per ounce, of hydrofluoric acid has been added. This, it should be mentioned, must be contained in an ebonite or celluloid tray and not in porcelain or glass. After a few minutes the film will be seen to be leaving the glass at the edges, and then by gently rocking the tray backward and forward the film may be floated off, and the pieces of broken glass and the other plate removed. The acid water is then drained off and the tray filled with clean water once or twice, to remove any fluoric acid. A clean glass plate is then slid into the water and the film floated in position upon it—avoiding air bubbles—and the water then slowly and evenly withdrawn in contact, the film being held to the glass at the upper corners between the thumb and fingers. It will be well to have at hand a small camel-hair brush to smooth down the film if necessary, but that is rarely required if the manipulations are neatly performed.

The plate, with the attached film, is then reared up to drain, and dry spontaneously. In some cases the film when dry will adhere firmly to the glass, if that be perfectly clean and the film has not been unduly hardened; but that cannot be relied upon, therefore it is better that the new glass be always coated with an adhesive. The best for our present purpose is a solution of gelatine—say one ounce in a pint of water. The plate is floated over with a thin coating of this, which is allowed to set firmly, and then the film is floated on that instead of the original glass.

the bare glass there will be no risk of its splitting off at any future time. Should the film, through insufficient hardening, expand during the stripping, it can be brought back to its original dimensions by immersing it in a dish of methylated spirit.

There is an alternative method of removing the film from the glass which some may prefer to the one just described. It is to soak the plate in a weak solution of washing soda for five or ten minutes, or until the film is thoroughly permeated; then slightly rinse and put into dilute hydrochloric acid. In this way carbonic acid gas is evolved between the glass and film, and the latter becomes liberated. On the whole, however, we ourselves prefer the fluoric acid method. Another method of removing the film is described on page 808 of the "Almanac" for the current year, and is particularly easy in execution.

In the foregoing it has been assumed that the negative has been cracked only into two pieces, and that the gelatine film has not been broken through. But it may happen that the damage has been more serious, and that the glass has been broken into several pieces. In such a case as this it will be obvious that it is impossible to properly join the pieces of film after they are detached from the glass, particularly if they have expanded in any way. Therefore they must be placed and secured in position before removal from the plate. The pieces of negative should be neatly arranged in position on a glass plate larger than the negative, say a whole-plate for a half-plate negative, and secured with narrow strips of gum-paper. It goes without saying that they must be very accurately joined. A good way of doing that is to press the edges of the fractured plate against a straight edge, say the side of another plate, for if the edges are perfectly true the other portions will be true also. If the negative is in many portions it is a good plan to secure, with gum paper, two strips of glass at exact right angles to each other on the large plate, into the corner of which the pieces can be pressed while being secured. The exact right-angle can easily be secured by putting a half-plate on the larger one, and then cementing the strips against two sides of it. When the whole of the pieces of the broken negative are got into place, and are firmly secured, the edges of the fractures should be closely examined, and if any little points of the film seem detached from the glass they should be touched on the under side with gum and pressed in contact with it, so that they will not become separated later on.

We will now assume that the negative is neatly joined and firmly fixed to the large glass. This is now placed on a levelling stand, or is otherwise levelled, say by wedges of wood, and some very thick enamelling collodion poured on, so that it is an eighth or three-sixteenths of an inch thick. The whole is then allowed to rest, undisturbed, till the collodion has thoroughly set and become firm, though not dry. This will take an hour or two, or more, according to the temperature. Next the film is cut right through to the glass, round the edges, with a sharp knife. The plate is now put into water and hydrofluoric acid, as described above, and kept rocking so as to facilitate the removal of the collodion solvents that may be remaining. In a short time the edges of the film will begin to show signs of loosening from the glass, but it is well not to hurry the separation, or some small piece of the gelatine film may possibly become detached at the edges of the fractures. When the film has come off we have the pieces of negative securely held by the collodion. The film should then be lifted out and put into a dish of clean cold water. If a good body collodion has been used and applied thickly as directed, it can now be freely handled, of course with some care. If not it must be lifted out on

another plate. After rinsing, the film is ready for attaching to another glass, and that is done in the same manner as described above. It may be as well to mention here that the gelatine-coated plate, when immersed in the water for the transfer, may carry with it some minute airbells. These should be carefully removed with a flat camel-hair brush before the lifted film is brought in contact with it, as they cannot afterwards be easily got rid of.

It will be noticed that nothing has been said in this case as to hardening the negative film before stripping. In this case this is not necessary, as the collodion film, which is unaffected by water, holds it so firmly that no expansion takes place. If the negative was only broken into two or three pieces, and the work is neatly carried out, the fractures will scarcely show at all. If, however, they do, they must be touched out with pencil or brush.

## THE COMMERCIALISATION OF OZOBROME.

In a circular of instructions just issued by the Ozobrome Company the announcement is made of important improvements in the Ozobrome process, the sum and substance of which should be of the greatest interest to workers of the process, and particularly to those who employ it for commercial purposes. The Ozobrome Company have in their literature laid considerable stress upon the natural advantages afforded by their process for the commercial production of carbon prints and enlargements, particularly the latter, and their materials have, no doubt, been subjected to considerable experiment by professional photographers and the many firms who undertake enlarging and printing work for owners of studios. Simple and speedy as the ozobrome process is, there has in the past been one feature which, from the professional point of view, was a drawback to its constant practice. This lay in the necessity of renewing the pigmenting solution when producing a large number of pictures of perfectly uniform character. It was found that while the first three, four, or five ozobrome prints treated in a pigmenting bath were perfectly uniform, the quality was liable to fall off to some slight extent in the case of later prints passed through the same pigmenting bath. The necessity of having to renew the bath, apart from the question of cost, was an obvious inconvenience to the worker undertaking the process on a considerable scale, and it is therefore of considerable interest to find that Mr. Manly has worked out a modified procedure which disposes of this drawback. The new working method entails only the slightest modification of the present procedure, and costs practically nothing more than at present. It consists in using a weak bath of hydrochloric acid instead of water for the preliminary soaking of the pigment tissue. The latter is then transferred direct into the pigmenting solution (one part of stock solution to four of water), and the subsequent process, including contact with the bromide print, conducted as before. Apart from the regularity which this modification, when worked according to a system, gives to the process, it also allows of the method being adapted to originals of different characters, so that the ozobrome result from a weak or from a hard bromide print can be corrected to a considerable extent. The difference in result is due to the absorption by the gelatine of the tissue of a definite quantity of acid solution. The following working instructions are taken from the new circular just issued by the Ozobrome Company. The method, it should be observed, has involved a modification of the pigmenting ozobrome solution, and all solutions applicable to the new procedure are numbered 701 and upwards. Those with a lower number should be worked according to the old instructions—that is, using a preliminary water-bath for the soaking of the tissue.

### Acid Bath.

Pure hydrochloric acid...	1 drachm. ....	5 cc.
Water .....	25 oz. ....	1,000 cc.

This is a half-per-cent. solution, and it should be made up exact measurements, as the proportions are important. The pigment plaster is placed, face upwards, in this solution, and is kept beneath the surface during immersion, a mop camel-hair brush being suitable for this purpose. As a guide to the time of immersion the following table may be taken:—

	Immersion of plaster.	
	Seconds in acid bath.	Seconds, pigment bath.
For a normal bromide print with a good range of tone .....	30	90
For a bromide print that is weak and grey .....	10 to 20	90
For a bromide print that has strong black shadows and harsh contrasts	40 to 60	90

On removing the plaster (tissue) from this acid bath it is allowed to drain thoroughly, and is then transferred, face upwards, to the pigmenting solution, where it remains for the time of one and a half minutes. It is then removed, allowed to drain, and drawn, face downwards, twice across the surface of a bath of clean water. The bromide print lies face upwards, and the sheet of tissue is brought, film downwards, in contact with it so as to avoid air-bells. The two sheets are then removed from the water together, squeezed, left in contact the necessary time, and the remainder of the process is then proceeded with in the well-known manner, either of Method 1 or 2, of the ozobrome process. The first, it will be remembered, gives a pigment print above the bromide image, whilst the second gives a pure pigment print by transference to single transfer paper.

To test this modified ozobrome process, we selected a bromide print showing plenty of fine gradations in the high-lights, and the result was a very marked success. The process worked without a hitch from start to finish, and all the gradations were beautifully preserved. We employed the second, or transference method, and treated the bromide print as a normal one, giving thirty seconds in the acid bath and ninety in the ozobrome bath. We have not yet had time to test very thoroughly the keeping qualities of the modified ozobrome solution, but it is evident already that they are far superior to those of the bath used in the original process. Mr. Manly is to be congratulated on what is certainly a very important improvement in this most useful process.

**PHOTOGRAPHING SUSSEX.**—Mr. J. C. Stenning, of Bexley, Saffrons Road, Eastbourne, has undertaken the Local Secretaryship of the Photographic Record and Survey of Sussex Association, and will be glad to give all information and assistance to those who may be willing to help in the work of obtaining photographic records of Sussex.

**MR. ERNEST WILLIAMS**, who has filled the position of manager of the photographic department of Messrs. Spiers and Pond for the last four years, has transferred his services to Messrs. A. Gamage, Ltd., of Holborn. His early training in chemistry and long experience in the photographic trade will doubtless ensure him success.



## CANADA AS A FIELD FOR PHOTOGRAPHERS.

[We are so often asked about the present conditions in Canada as they require to be known by a photographer with thoughts of going to that country, that we may direct special attention to the following article, written at our request by a Canadian reader of the "B.J." familiar both with the country as a whole and with the photographic business.—  
— "B.J."]

A great deal has been said and written of the vast extent of the Dominion of Canada. As the literature issued by its Government and railways goes into this fully, it will not be necessary to describe it. One or two facts, however, should be kept in mind. Canada is a land of great distances. It takes about a week to traverse it by express train, and it is almost as great a variety of climate as Europe. To give an idea of its resources and possibilities, it will be best to divide the country in sections.

The Maritime Provinces, Nova Scotia, Prince Edward Island, New Brunswick, have not attracted as much attention from newcomers as have the provinces to the west, yet they have made steady progress. In addition to their fisheries, lumbering, shipping, the growth of iron and steel industries, and the development of coal fields, are perhaps the more recent outstanding features of their progress. Some parts are attracting an increasing number of summer tourists, notably the Annapolis valley in Nova Scotia, the most famous apple orchard country in Canada, and known to tourists as "the land of Evangeline." Nova Scotia, the principal city is Halifax, the capital, with a population of 40,000. It is a seaport, open all the year, and a winter port for the Canadian mail steamers. It is a thorough English city, and regarded by western Canadians as being somewhat sleepy. Sydney, where the great steel and coal industries are centred, has a population of 9,000.

In New Brunswick, St. John (40,000 population) is the largest city, being the winter port of the steamers of the Canadian Pacific Railway, and where they have built extensive docks. The city has every prospect of substantial growth. Fredericton, the capital, with a population of 7,000, and Moncton (9,000) are the other important places.

The province of Quebec, being almost wholly occupied by French-speaking people, who are perhaps less aggressive than English of the other provinces, offers very few attractions as a place of settlement for the Anglo-Saxon from over the States. Quebec, the capital of the province, is considered the most picturesque and quaint city in America. It attracts a great number of tourists, who sometimes come in such numbers to exceed the large hotel accommodation. It is the summer resort of several trans-Atlantic lines of steamships, and has recently experienced a revival of business and growth. Less than a quarter of its population of 70,000 are English-speaking people.

Montreal, some 200 miles further up the river St. Lawrence, is the metropolis of Canada. It has a population of nearly 1,000,000, of which about two-thirds are French. Though a university city, with many English and French colleges, it has more and larger manufacturing industries, and a greater amount of shipping, than any city in Canada. The head offices of the two great railway systems are situated here, and each contains a fully equipped photographic department. Some of the large manufacturing plants employ a photographer for their work exclusively.

### Central and Western Canada.

It is in the central and western parts of Canada, however, that the greatest progress and development is taking place, and to these provinces the greatest attention is attracted. The western part of Ontario has been well settled for many years, the majority of farms have substantial buildings and richly cultivated fields. Many of these homesteads have been in the possession of their owners for several generations. The

cities and towns are of considerable size, and in many there are manufactories of various kinds, whose products are sent all over the Dominion, or exported.

Ontario at present is the chief manufacturing province; its capital, Toronto, is a city of 300,000 population, almost wholly English-speaking. It has a large university and many colleges, there being 5,000 students in attendance. There are many and extensive manufactories. The latest directory of the city showed sixty-three photographic establishments. Most of these are one-man studios, the proprietor doing all the operating, and employing one or more assistants.

The other principal cities are:—London, population 35,000; Hamilton, 55,000; Ottawa, the capital of the Dominion, population 70,000, partly French; and Kingston, 25,000, the conditions being somewhat like Toronto on a smaller scale. Hamilton, perhaps, has more industrial concerns than the others.

The northern and western part of the province, usually termed New Ontario, is largely undeveloped. Great interest at present centres in the extensive and valuable minerals recently discovered. Cobalt silver ore of marvellous richness has attracted the world's attention. This region is about eleven hours' railway journey from Toronto. Already the more adventurous photographer has been "cleaning up" good money there. North of this, large areas of good farming land are being opened up by the building of railways. To the west of this territory is a wild and rough country, much of it mineral-bearing, and largely forest-covered. All this north country has long, rigorous winters, but bright, warm summers that attract great numbers of people from older Ontario and the United States.

At the head of the great lakes are the twin cities of Port Arthur and Fort William. They will eventually form a large city, for all the lake traffic to and from the Great West begins and ends here. It has large terminal facilities for three railways, among these being some of the largest grain elevators in the world. At present the photographic possibilities have been largely discounted, and competition is keen. Back of these cities, and to the west, large lumbering and mining operations are being carried on; Kenora, a thriving place, being their centre, and the most western town of prominence in Ontario.

### The Wheat-Growing Districts.

Manitoba is the first of the prairie provinces, and the beginning of the great wheat-growing lands that stretch through to the Rocky Mountains. Its capital, Winnipeg, is the first city of Western Canada, the growth and progress of which has been so rapid, and yet substantial, as to be nothing short of marvellous. Its citizens are very much impressed with the achievement, and no comparison or eulogy, however flattering, is received by them with other than the utmost complacency. There is a great amount of business done; every year sees an increasing number of manufacturing industries established. The city has many nationalities among its inhabitants, but the English-speaking races are very largely in the majority. Its population has nearly trebled in the last five years, and is now somewhere about 125,000. There were about twenty photographic studios in the city in 1907. The province of Manitoba is fairly well settled, and many thriving towns are located on its extensive network of railways, Portage la Prairie (5,000) and Brandon (11,000) being the most important.

Two new provinces (Saskatchewan and Alberta) lie between

Manitoba and the Rocky Mountains. The first in the westward journey is Saskatchewan, with an area of nearly 230,000 square miles, being 700 miles from south to north, and over 400 from east to west. Wheat-growing, ranching, mixed farming, and lumbering in the north, are the special industries of the province. The principal towns are Regina (7,000), the capital; Moose Jaw (7,000), Prince Albert (4,000), and Saskatoon (2,500). There are a number of lines of railway under construction, and new towns are springing up continually. Alberta has even greater area than its sister province, containing over 280,000

square miles. It has perhaps the greatest possibilities of any of the western provinces, having a great variety of natural resources. In addition to wheat-growing, cattle-raising, mixed farming, and great lumbering possibilities, it has rich mineral deposits, coal, gold, silver, and other minerals; oil and gas have been found in many districts. It has some good-sized towns, the most important being Calgary (15,000), Edmonton (12,000), Strathcona (3,500), and Medicine Hat (3,500).

DAVID J. HOWELL.

(To be continued.)

## OZOBROME AS A METHOD OF INTENSIFYING NEGATIVES.

A NEGATIVE that requires neither intensification, reduction, nor retouching is the desire of every photographer. But how seldom one gets it. It need not be said, however, that these after-processes detract from the value of the picture. Nay, they oftentimes enhance it.

When intensification has had to be resorted to it has been customary to use solutions of which mercuric chloride or uranium formed the basis. But to these can now be added another. It may not be new, but, so far as I know, it has not hitherto been published. The story of its discovery (if it is one) may best be told in a personal way.

In the beginning of November I cycled out to a haunt of mine for the purpose of securing a picture of a few scattered trees against a sunset. In this quest I was successful. The sky was beautiful when the photograph was taken, but the after-glow of sunset was a "poet's dream." My way homewards lay along the banks of a river, and, as I had several unexposed plates, I dismounted at various points on the roadway and prospected on the river bank with the view of finding a suitable composition in which to include the magnificent aerial display. It was not until home was nearly reached, however, that a suitable one was found, and by that time passing vehicles had their lamps alight. Reds were predominant, and a long exposure on a rapid isochromatic plate with screen was necessary to get even a trace of colour values. As little movement was taking place, two minutes' exposure, with an Aldis anastigmat working at  $f/6$ , was allowed. It was far too short, and when the plate came to be developed with a normal pyro-soda solution, it was 15 minutes ere the faintest image appeared. The plate was then washed and placed in a stand development tank filled with rodinal, 1 in 75. Here it was left for two hours. It was then examined, and, though the picture was there, and some representation of the cloud effects, it was a mere ghost of a negative. After rinsing, fixing, washing, and drying, it was placed among

the "wasters," with the regret that so much time had been devoted to it.

### Intensifying a Ghost Negative.

Some time afterwards, when working ozobrome, the thought struck me that it might be possible to impart some life into this ghost by the process. A sheet of sepia tissue was selected. It was sensitised in the ozobrome solution and under water was brought into contact with the negative. Having squeezed them into closer fellowship, they were left in juxtaposition for ten minutes. At the expiry of that period they were plunged into a dish containing luke-warm water; and when the backing paper was released, development was carried out by gently laving with a teaspoon. In a short time the negative was free from all superfluous colour, and the faintest trace of an image was left. When it was re-developed with amidol, however, a great transformation took place, and a negative of printing density was procured. It did not come up to exhibition standard—far from it—but it allowed one to illustrate, in a faltering way, it is true, the prevalent atmospheric conditions. It also demonstrated clearly the fact that ozobrome could be successfully used for intensification.

Some of the pigments may be quite unsuitable for this purpose, and the various shades will not give the same result. But the latter fact may be a strong point in its favour. Different degrees of under-exposure or insufficient development could be treated with different colours—viz., an extreme case of under-exposure by a dark pigment, and a slight case by one of a lighter hue.

The introduction of ozobrome has put a valuable implement in the hands of photographers, and the knowledge that it can be used in the way indicated may save many a picture where an error in exposure would have otherwise militated against its successful reproduction.

WILLIAM FINDLAY.

SHOPS AND THE LONDON BUILDING ACT.—The London County Council on May 12 discussed the Building Acts (Amendment) Act, 1906, in its relation to shopkeepers. The matter arose on a suggestion by Capt. Fitzroy Hemphill that the Act was not being adequately enforced in regard to the provision of means of escape from fire. Thirty-four lives had been lost since 1896 which would have been saved if the Act had been enforced. Mr. Howell Williams, however, took the view that if many of the provisions of the Act were applied it would press most harshly on small traders. There was scarcely a building in London which complied with all the technicalities of the Act, and its principal object seemed to be to provide officials with a means of wringing fees from traders and ratepayers. Mr. Edward Smith, M.P., called attention to the danger from fire caused by the custom in London of building single storey shops in front of houses several storeys high, and suggested that such shops ought to be provided with fireproof roofs. Mr. F. Goldsmith, Chair-

man of the Building Act Committee, promised not to apply the Act in too strict a fashion whilst making full use of it to abolish death traps.

A CORRECTION.—In reference to the notice of Mr. Swaine's new studio in Bond Street, which appeared in our issue of last week, we would wish to correct one statement in reference to the time with which Mr. Swaine was with Messrs. Lafayette. Mr. Swaine was with Messrs. Lafayette for a period of twelve months.

### CONVENTION LYRICS. No. 3.

Writes that charming young lady of Ghent  
(To know her, oh! how I long),

"Your poetry's great

But allow me to state

Your French is most horribly wrong."

But how does one pronounce G-H-E-N-T?



# THE MODERN NOTE IN THE DESIGN AND FITTING OF PHOTOGRAPHIC PREMISES.

[This article concludes the series by Mr. Drinkwater Butt that began in our issue of March 27.—Eds. "B.J."]

## VIII.

Access to the basement is obtained by a stone staircase, situated under the main one, and opening from the assistants' corridor. At the foot of these stairs, and for the convenience of the said assistants, an apartment for their use as a cloak room, and leading from it is a lavatory fitted with hot and cold water for washing purposes. This is not being a suitable position for a sanitary convenience, the lavatory for the assistants' use has been placed by the back staircase, under the covered way, where it receives light and air directly from the open. The assistants' room and lavatory receive some borrowed light both from front and back, but would need to be principally lit by electricity, which, however, would not be in use for any long time during the day.

Better situated as regards its lighting is the front portion of the basement, which has, therefore, been appropriated for the packing, making and storing room, and which, as will be seen from the plan, elevation, and section A B, has a well illuminated bench beneath a large window, the latter being partly above the pavement level and partly in a light well, lined with white glazed tiles; as would also those in the yard, one of which affords light to the heating chamber, where would be situated the furnaces and boilers for the general hot water supply and heating of the whole establishment. The coal store in connection with this will be found alongside the packing case room, where it can receive its supplies by a glazed coal chute and shoot direct from the street, as shown on the ground floor and basement plans.

The lift might be either an electric or hydraulic one, as found most convenient; in either case its motive apparatus finding a place under the main stair well, in the angle of the basement stairs, as shown.

Passing round it, we find ourselves in a passage, lighted, as shown on the basement and ground floor plans, by pavement lights in the floor under the covered way above, and leading to the enlargement making and developing rooms. These have been put in the basement, because they do not require any daylight illumination, and because they would there be most free from the vibration which is so frequently caused in the upper parts, especially of town buildings, by the passing of heavy traffic. For this reason also these rooms have been placed as far back as possible from the street, and with their solidly built foundation walls and concrete floors should be immune from the trouble referred to.

As will be seen, there are two of these apartments, one devoted to bromide work and the other to the making of enlarged or reduced negatives, and lantern and other transparencies. Each has its own developing room, fitted with benches and sinks, hot and cold water, and red, yellow, and white electric lighting, to suit the operations to be performed in them. The developing rooms would be shut off from the enlarging ones by double doors, as also the enlarging rooms from the electric light chamber between them; while safe ingress and egress are also similarly provided for by the separate doors leading into the corridor. The electric light chamber would, of course, contain the large arc lights for enlarging purposes, the enlarging cameras being fitted against the walls in the enlarging rooms on each side, in line with the sets of rails which are shown on the floors for carrying the enlarging easels. The whole basement could be lined throughout with white glazed bricks, in the front rooms and passages, for increasing the illumination, and in the developing rooms for promoting cleanliness.

Going up again to the ground floor of the back building, we find ourselves in the covered way, which affords convenient access to all the ground floor rooms and to the staircase to the upper portion, and, by means of the pavement lights in its floor, gives light to the corridor below.

Next, we have the silver toning and platinum developing rooms, in convenient proximity to each other, and, although connected, each having a separate entrance of its own. Both are lined with white glazed bricks, both fitted with benches and Doulton sinks, and both also having concrete and cement floors, slightly sloped to central

drains for the carrying off of splashes, easy cleaning down, etc. Each would also be fitted with coloured electric lights for night work, but as the operations carried on in them can also be executed by tinted or subdued daylight, they are also provided with windows, which would have sliding shutters of glass or fabric, and which are protected against too much light by their position under the shadow of the covered way.

At the end of the latter are the frame-making shop and the moulding store, the former situated where it will get a good light upon its window bench, and the latter being placed in the angle, where it can only receive borrowed light through its own glass door and from the staircase, because the good lighting of such a store is not essential, and an electric lamp, to be switched on and off as required, to place or remove the lengths of moulding in or from the racks, would be quite sufficient.

Ascending the stairs, which, as will be seen from the plans, and from the Sections A B and C D, are very well lighted all the way up, we come, on the first floor, to the packing and forwarding, and mounting and finishing rooms. In some respects these would have been better on the ground floor, as there being nearer to the reception room and the goods entrance, but in the space at our disposal, and in view of other conditions, this was not possible, so they have been placed in the present position, where they enjoy the advantage of a better light than they would otherwise have done, and where they can still be reached from the reception room, the general office, and the goods entrance passage, by the door upon the second half landing of the main staircase, as well as by the back staircase from the other work rooms. They would be fitted with benches, shelving, and cupboards, as shown.

On the other side of the stairs are the mount and general store, and the plate and paper store, the former being given the daylight position and the latter that in which only borrowed light from the staircase is possible. Even this illumination could be easily blocked out with a shutter of red or yellow fabric, when it was desired to open or examine plates or paper by a non-actinic light. In this position also plates and paper could be quite safely stored away from chemical or other fumes and emanations, such as might be found in some other parts of the establishment. Benches and shelving would be provided as shown, and the doors of both these rooms be fitted with duplicate keys for the use of the principal and of the storekeeper, whose business it was to take in, give out, and account for their contents.

Ascending to the second floor, we find, over these rooms, the chemical store and laboratory, and the carbon sensitising and developing room. The former of these is a very convenient place to have, inasmuch as in it all chemicals in bulk can be kept under lock and key, and where their fumes and emanations are well away from plates and silver paper. In it chemical apparatus, scales and weights, measures, etc., would be always ready for use in compounding all developers, solutions, etc., in an absolutely correct and uncontaminated condition. Such a room is also very useful when it is desired to do any special experimental or testing work which cannot be conveniently carried on in the midst of the ordinary routine proceedings of a large commercial establishment. It would be fitted with sink, benches, shelving cupboards, etc., as shown, and have a good light from its large window. Next to it we have the carbon sensitising and developing room, placed in the unlighted angle of the site, because the operations to be therein performed are independent of daylight, and would all be done by the coloured electric light which would be fitted, though some borrowed daylight could be obtained for cleaning or other purposes by the usually shuttered window on the stairs, as seen on the plan and the Section C D; benches, Doulton sinks, drying cupboards, racks, etc., to be fitted as shown or required.

On the other side of the landing we have the negative store and the retouching room. These are naturally kept together, and thus high up in the building, for the sake of obtaining a good north light for the windows of the latter, under which runs a bench, to accom-

modate four retouchers, one at each window opening. The bench under the window of the negative store would be used for work on the back of the negative, and similar processes, while on the small bench in the retouching room would be fixed an electric stove, to facilitate varnishing without dust, for the more easy elimination of which latter the floors of these and other work rooms would be also covered with linoleum, to allow of easy and thorough cleaning. On the walls of these apartments would be fixed shelving, as shown, to accommodate negatives of all the standard sizes, of which there would be space to hold many thousands; while provision should also be made for the orderly keeping of the indexed and illustrated registers which should accompany every well-kept stock of negatives and render them easy of finding and identification.

On the next floor above is the artist's studio, kept right at the top in order that it may receive the best possible north light to its side and top windows, as shown on the plan, the Section A B, and the roof plan. Here would be done the finishing of all enlargements, colouring, miniature painting, etc. A convenient bench, with cupboards under, runs round two sides of the room, with a small useful sink in the corner for washing hands, brushes, etc.

The rest of this floor is occupied by the printing department, including the sensitising and changing rooms, which are enclosed by orange glazed partitions under the slated portion of the roof, and

the printing place proper, part of which, as will be seen by the plan and by the Section A B, is under the glass roof and part in the open. The latter portion is enclosed by a dwarf wall, round which is a bench for printing frames, while in its centre is a printing table running on rails, so that in the event of a sudden shower it could be immediately pushed in under shelter of the glass roof as shown.

Having now completed our description of the building and stated the reasons for placing the different apartments in the positions they occupy, both as regards the general planning and their relations to each other, thereby, I hope, elucidating some of the general principles of the subject, it now only remains to note that the present structure has been designed for execution in red brick with stone dressings, with the exterior woodwork of oak, left from the tool and well oiled. The leaded glazing of the casements and fixed lights would be in steel or gun metal frames, and the ogee roof of bay in copper. The scroll and motto, "Per luce vivamus," would be in cut brick, with the letters gilded to match the gilt copper of the device of the flaming sun above; while the symbolical figure of Light crowning the gable would be of stone, carrying a copper gilt electric torch, which could be switched on when the electric light studio was in operation, as a general advertisement at night. The cost of thus erecting a building of this extent and fitting it as shown on the drawings may be roughly estimated at £3,500. DRINKWATER BUTT, F.R.P.S.

## THE CAMERA ON THE JOB.

[An article in "System" on the value of photographic records in business, the purposes they can be made to serve, and systems used by contractors and manufacturers for securing and keeping them.]

A RECORD of every important detail of business—a record that has a meaning and a use—that is one of the purposes of system.

Business to-day is developing a new kind of record—automatic, accurate, incontrovertible: the photograph. To manufacturers and builders, to engineers and contractors, who are carrying out the same constructive enterprises of the day the photograph is coming to be a most important record.

To these men, who are accustomed to handling reports, drawings, profiles, and blue prints, from one end of the day to the other, it is a positive relief to have a superintendent send in along with his report a photograph of the work as it actually stands when the report is made. And then, too, it verifies the report. Even the superintendent with the best of intentions is likely, at times, when the work has dragged, to convey the idea in a written report that more has been done than is actually the case. A photograph cannot very readily be made even to imply an untruth. And if the superintendent knows that a photograph must be taken at a certain time, he will put forth his best efforts in order that it shall show as great an amount of progress as possible.

The Arnold Company, of Chicago, on all its work takes photographs at uniform intervals of two weeks. These are all made in a uniform size of 8 x 10 inches, and with progress blue prints of the same size they are fastened with eyelets in a heavy paper cover. These covers have printed on the outside the name of the job, date, name of customer, and location. Several sets are made up for each date. The covers are printed in quantities, the printer changing the date for each set. One of these sets is kept in the files of the main office, and one set at the office on the work. One set is also sent to the person for whom the work is being executed, or to each of them if there are more than one. A few are kept on hand for emergency and to show to prospective clients.

### The Usual Method of Securing Photographs of Work.

A contract is made with a local photographer in each place where work is to be prosecuted. This contract specifies the exact size plates and prints are to be, colour, style of finish, and mounting, price for plate, and price for prints. The plates in all cases remain the property of the company, and the photographer is not allowed to sell copies without permission. This is readily granted in most cases, however, and brings an added income to the photographer; he is also allowed to place his imprint on the back of each photograph. For these reasons an advantageous rate can usually be secured from the photographer.

Where photographs are 10 x 8 inches or larger, most contractors prefer to have them mounted on muslin, with a hinge and extension for binding. Sometimes this is done on the smaller sizes, though these are more frequently printed on ordinary paper and mounted in an album, such as can be secured of almost any dealer in photographic supplies.

One of the higher refinements of photographic work has been worked out by one of the engineers of this company in connection with the construction of the shops of the St. Louis and San Francisco Railroad at Springfield, Missouri. Here, instead of a hit-and-miss system of taking anything which seemed to be of value from an desired point, the company established four points on the job from which all views are taken.

The ground on which the shops are being located is a rectangular piece about forty acres in extent, and has a considerable diagonal slope. At each corner of the rectangle a substantial but inexpensive tower was erected, the four of varying heights above the surface of the ground but all uniformly thirty feet above the grade on which the buildings were to be placed. The buildings were to be six feet high, so that a camera placed on any one of the towers would cover the buildings without distortion.

### Photographs taken with the Accuracy of a Surveyor.

A point was established on each of these towers, and an arrow of direction. The photographer was required to adjust his camera to these each time an exposure was made, almost as accurately as a surveyor would adjust an instrument in striking a line. These stations are lettered A, B, C, D; the proper letter is put on the negative in connection with the serial number. These photographs taken from the same identical points each time, enable one to see the building grow before his very eyes, almost like the film of a moving picture machine. In addition to the views taken from the towers, detail photographs were also taken of important parts of the construction.

The method in use by the Frank B. Gilbreth organisation has long since proved its efficacy. It consists of a set of private instructions published in a little book called "A Field System," which contains all the regulations and instructions of the organisation to its employees. The uses of photographs other than their merely casual and incidental application, are stated as follows:

"For keeping office employees in touch with varying conditions which from time to time obtain on the various jobs.



for indisputable records of the condition of adjoining buildings before starting work, and after its completion.

Photographing cracks over doors and windows and in other places to show whether or not any settlement has taken place, due to the construction work involved.

For records to be available in case of a law suit or other discord and misunderstanding.

For advertising purposes."

Various other rules, as follows, indicate the methods of procedure in photographing, which have been found to be most advantageous in obtaining the pictorial record desired:

In all cases pictures should be taken of the men while at work, not as though idle and posing for a picture. On out-of-town work, negatives should be mailed to the New York office, and the negatives should be promptly sent to the regular photographer employed by the firm.

All negatives should be dated and numbered. Prints should be mounted, and Velox paper should be used for all prints. The method to be used on all photographs is as follows: the proper contract number, serial number and date being inserted in the place indicated:

By the regular photographer: A 31-32-5-16-06; by the employees on the job, when taking photographs which are developed by the regular photographer: A29-J 32-4-20-07; by the regular inspector or others: A 28-B-5-20-06.

Photographs should be marked in no other way. If possible, keep outsiders out of the picture. As soon as a film is taken, mark on the outside of the wrapper that surrounds it the contract number, date on which the picture was taken, and the name of the person taking the picture, sending the film, thoroughly wrapped up so as to exclude the light, to the regular photographer. Special stress is to be put on the advisability of obtaining photographs of conditions at the scene of any accident. Unless otherwise directed, at least one roll of film should be taken on each job, each week, and all pictures on film should be taken the same day.

After the film is removed and sealed, the contract number and date of taking photograph should be clearly written upon it.

Care must be taken to use the 'J,' 'B,' or other serial letter, so as not to duplicate the numbers on pictures already taken."

### **Smallest Details are Recorded in the Form of Pictures.**

These pictures show in detail how the forms were made, even to numbering on the forms. They show as well the construction of the columns, which splice plates were riveted in the shop and which were riveted in the field, and the condition of staging and its proximity to the adjoining structures. Some of the columns shown in the Gilbreth photographic files were 7½ tons in weight, and by means of such photographs it is accurately shown how long the columns rested on the ground before being set in place. They also show the condition of the work, and consequently whether or not the contractor was able to take care of these columns immediately after delivery.

In its working application, the Gilbreth method of photographic record has been found through its check upon the work of the employees, to prevent damage to owners, to adjoining property, and to the contractor's interests, and to prevent legal disputes, as well as furnishing the data necessary to settle them without delay.

Many engineers and contractors require two classes of photographs to be taken on all pieces of work: construction photographs, which are kept for record of the method and progress of the work; and what may be termed "publicity photographs," kept for showing the class of work the firm is engaged in, thus influencing prospective clients, and for advertising purposes.

Among firms following this method are Dodge and Day of Philadelphia. Each of their superintendents of construction is provided with a film camera taking a photograph 5 x 4 inches. At regular intervals photographs of the work in progress are made, a placard giving the name of client and date having been placed on the work.

The film is returned to this office, and two prints of each negative are made by the firm's photographic department. The films are kept on record in that department. Consecutive numbers are given each plate, regardless of what job it comes from; each job is given a letter, which is prefixed to the number. One print is kept at this office and one print is sent to the superintendent on the work. The

print in the office is properly filed under the letter and date in a cover provided for that purpose.

### **Photographs Aid in Publicity and in Securing Business.**

The publicity photographs are taken on 10 x 8 in. size by the firm's regular photographer, at such intervals during the course of work as will ensure interesting pictures. These plates are given consecutive numbers, and a blue print of each plate is kept on permanent file in the home office.

While this primary purpose of these photographs is a record of progress and as publicity material, they are valuable evidence in case of disputes; and, more, they often act as a sort of police power in the prevention of litigation. The knowledge on the part of a sub-contractor that the general contractor has dated photographs of the work on which he has been employed, will tend to discourage the presenting of unjust claims. Cases of dispute which have come up, and which would otherwise have gone to court, have been satisfactorily settled when the photographic records were referred to.

If a company employs its own photographer, there is an advantage in having a man who has some knowledge of engineering. In fact, some concerns consider an insight into engineering problems of more value than an expert knowledge of photography. For securing its photographic records the George W. Jackson Company, of Chicago, had in its employ a man of some technical training who is an amateur photographer. He is engaged continually in visiting the different pieces of work which the company has in hand, and in addition to the photographs which he takes he is able to report on any features of particular interest or answer intelligently any questions which the pictures may suggest to the engineers of the company. Each piece of work is visited about once in two days. The photographer immediately develops his plates and makes prints on developing paper, so that when Mr. Jackson comes to his office each morning he finds on his desk a photographic representation of a large part of the work as it looked the day before. The photographs are preserved in albums, with a notation under each.

In the factory the camera can be adapted to an endless variety of uses, limited only by the ingenuity of the manager in applying it and the skill of the photographer in working out practical applications. Here the photographer in a large number of cases is a regular employee having rooms assigned to him in the plant, and occupying a permanent place on the pay-roll.

In the shops of the Power and Mining Machinery Company of Milwaukee the first machine of a new design or type is always photographed when assembled, and photographs of it are sent to the different agencies to keep them informed as to what is being manufactured.

Some of the firm's customers, especially those who are located in foreign countries, demand that each machine be photographed to show that it was assembled. These different machines are photographed individually and from different points of view, so as to distinguish one from the other. Photographs of these different views of different machines are mailed to the customer and are invaluable when erecting the machines.

### **The Increasing Demand for the Camera in the Factory.**

This company also photographs drawings which are sent in to figure from and which must be returned with quotations. By this method the manufacturer insures himself against the customer substituting another drawing of more expensive construction, and can refer to the photograph at any time a question arises as to methods of figuring, and other matters, before the contract is closed.

Similarly for protection photographs are taken of the surroundings of a machine when an accident has taken place. This is always done before the parts are disturbed, so that it may be used as evidence in court. These photographs have very often indicated that the person hurt was at fault.

General drawings and special details of machinery on price book pages may very well be photographed in order to facilitate explaining the construction of the firm's manufactured goods to the customer. This saves the annoyance and trouble of carrying around large blue-prints which must be folded or rolled up, and which, after being used several times, become torn.

Photography can very advantageously be used for preserving and

duplicating confidential records. The Power and Mining Machinery Company reproduced their price list in this way. And in view of the fact that this price book must be revised very often, it is also found to be economical and more convenient, besides more rapid, to typewrite the pages on ordinary commercial paper, and then photograph them down to the proper size sheet for the price book. In this manner a large amount of information can be crowded on a small sheet (necessary because the book is made pocket size) and the characters are very clear. By doing this work themselves instead of handing it to a printer they are absolutely sure that the price sheets do not get into the hands of competitors, as the number of copies is kept track of in the photograph room.

The Allis-Chalmers Company attempts to secure a complete set of views for each installation of equipment made. These are used in the sales department as aids in planning tentative lay-outs for prospective customers.

Every salesman knows that if he can show a customer just how a thing is going to look when completed he has gone a long way toward awakening the interest which leads to a sale. Especially is this true in an elaborate lay-out of electrical apparatus, about which the purchaser sometimes knows little and feels a large degree of uncertainty. The publicity department of this company also makes extensive use of the photos of completed installations. Articles are

prepared by the department's technical writer describing the equipment in detail. This article is mimeographed, and a copy, together with a set of the views, sent to a large number of publications likely to be interested. The Allis-Chalmers Company has developed an advertising function of photographs to the utmost.

Photographs of important pieces of work are taken as progress through the shop, as, for instance, the group of views of a steam turbine in different stages of completion. They are used to familiarise those in both the mechanical and business departments with the work which is being done, as well as to assist in accomplishing the other work which have already been mentioned. Copies of all photographs are filed in a vertical file in the photographic department. For this purpose they are mounted on a piece of white 6-ply cardboard  $8\frac{1}{2} \times 11\frac{1}{2}$  inches in size. The prints are attached only at the top edge, as pasting over the entire surface would inevitably cause warping of the cards, making them very inconvenient to handle in the file. The upper margin of the card is printed with suitable blanks for records, as shown in the reproduction. They are the most part, indexed under the name of the installation—"Patapsco," "Kern River," and the like, and as well as being cross-indexed for the kind of equipment, as "Steam Turbine," "Dynamos." E. S. HANSEN

## THE COLOUR-FILTER AND THE "ISOCROMATIC" PLATE IN ASTRONOMICAL PHOTOGRAPHY.

[The following paper, by Mr. R. J. Wallace, read before the American Association for the Advancement of Science, is primarily addressed to astronomers, but as it is a scientific and most lucid exposition of the principles of orthochromatic photography, it affords a fine space for it in our columns, and we commend it to the study of any who may have been confused by some of the indiscriminate writings on the subject of which there has been no lack during the past few years. We are indebted to Mr. Wallace for certain of the diagrams which illustrate his paper.—Eds., "B.J."]

THE new era in photographic science, opened by the introduction of the (so-called) isochromatic plate and its accompanying colour-filter, was pregnant with significance to astronomers in general throughout the world, for hitherto while the application of photography to the recording of results could be attained only by the possession of an expensive correcting lens, the simple combination of a colour-filter and isochromatic plate not only fulfilled all requirements, but did so more perfectly.

It requires but little consideration to arrive at the very logical conclusion that, whether an individual be equipped with but rudimentary photographic knowledge or an extended experience, successful results are more or less a matter of "accidentals." Natural causes compel that this must be so, i.e., the unsteadiness of the earth's atmosphere, and consequent "bad seeing." Every astronomer knows that during the period of an observation there are moments when the image appears to "steady down" and detail "flashes out," only to be again lost in the ensuing "boiling." In the case of a large image like the moon, these moments of steadiness can be watched for and taken advantage of when they occur; but, naturally, it is the exposure of plate after plate, or the exposure of portion after portion of the same plate, that gives results, because it is obvious that, given even fairly good seeing, the development of a large number of exposures taken consecutively throughout the period must result in some that are much better than others, since the better ones utilise the light during a momentary steadiness. It follows, therefore, that the steadier the air, the greater the percentage of good images, and the greater the number of exposures, the better the chance for success.

Assuming the possession of a telescope, a colour-filter, and camera-box, together with a plentiful supply of plates and a modicum of manipulative photographic knowledge (which is not synonymous with a knowledge of photography), there are but few things less difficult than obtaining results in so far as the operator is concerned; the only element of uncertainty introduced being the atmospheric disturbances, over which he has absolutely no shadow of control. The focus is fixed by star-trails at any time prior to the exposure, and, once determined, it remains constant except for temperature, which by contraction or expansion of the metal parts of

the telescope, or change of figure in the objective, shifts the plane nearer to or farther from the objective. Several settings, however, at varying temperatures provide points upon which, if erected a focal curve, the casual observation of which, before or during work, instantly indicates the exact focal setting.

It is an almost incomprehensible fact that while the principles underlying the use of colour-filters and "isochromatic" plates are very thoroughly understood by all students of photography, yet astronomical circles generally the most vague and visionary ideas are entertained, and this, too, in many cases, by the very individuals who are making constant use of both. It is unfortunate that data relative to the subject is almost wholly scattered throughout the photographic and other journals (mostly European), and so it has been written by so many people, that to attempt the correction and necessary editing of the material would be a task herculean. The purpose of the present paper, therefore, is to attempt to set forth connectedly the principles governing their use.

In the adjustment of a colour-filter to a visual refracting telescope the point of first consideration is the correction of the lens colour, i.e., the "colour-curve." Generally speaking, the curve from  $\lambda 5400$ - $\lambda 5900$  represents the portion most nearly flat, viz., where the rays approximately come to the same focus, while the points of different wave-lengths lie at a gradually increasing distance apart. As a typical example of a visually corrected objective, the colour curve for the 40-in. telescope is shown in Fig. 1.

If all light-rays passing through the objective were to converge to a focus at the same plane, then of course the colour curve would be represented as  $f$ , and when photography was attempted it would simply be sufficient to place in that plane a photographic plate whose selective sensitiveness it would not be necessary to consider.

Strictly speaking, there is only one point upon the curve where  $v$  is directly coincident with  $f$ ; but generally speaking, and in practical consideration, a much greater extent is permissible, this extent being limited by the diameter of the confusion circles, which themselves are dependent upon the angle subtended by the object.

In the case of the 40-in. telescope the angle subtended at the visual focus equals almost  $3^\circ$ . Considering the light-ray at  $\lambda$



indicated on the figure by an arrow) as forming a point source at plane of the plate at  $f$ , it will be seen that the different focus points of different wave-lengths will be spread out into confusion circles of greater or less diameter as the rays cross nearer to or further from that plane. Light, therefore, of  $\lambda 4800$  and  $\lambda 6700$  will spread out from a point source into a circle whose diameter is about  $0.7$  mm. As the intensity of the light is diminished in inverse proportion to the surface, it follows then that a light-intensity of unit value at its focal point must possess a weakened photo-chemical value according to the distance the plate is removed from that focal point. Hence it cannot produce the same effect on a photographic film unless the time of exposure be proportionately extended, such extension from investigations by Abney,<sup>1</sup> Schwarzschild,<sup>2</sup> Mees and Sheppard,<sup>3</sup> and others, being represented by  $I \times t^p$  the value of the exponent<sup>4</sup> being less than unity, and varying with different plates. In all probability it also varies with the wave-length.<sup>5</sup>

The value or amount of this weakening of the light is, however, dependent upon another factor, and that a most important one, the sensitiveness of the plate to the wave-length in question.

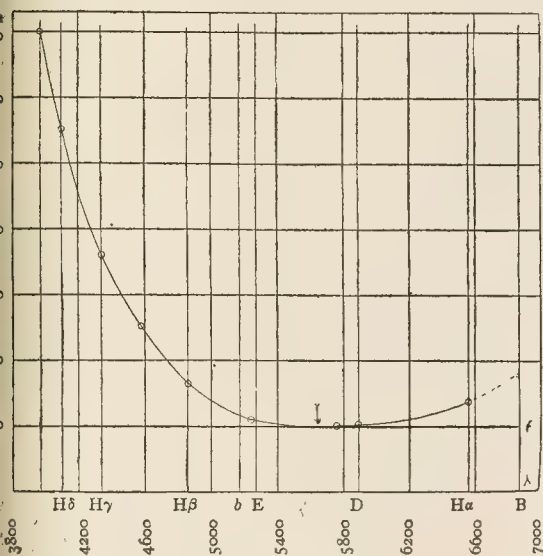


Fig. 1.

portion of the colour curve which approximates a straight line in the very region to which the ordinary photographic film is directly insensitive, and hence enters the isochromatic plate. It is an interesting coincidence that it is just thirty-four years that the first publication was made in English of Dr. H. W. Vogel's discovery on photographic sensitiveness to rays of longer wave-length than the blue, by the introduction to the emulsion of sundry dyestuffs and also the first use of a colour-filter. Vogel's original announcement was made just one month prior. It does at first sight appear somewhat strange that, in spite of the almost immediate and since continued activity of the plate-manufacturer, commercial "iso" or orthochromatic plate of to-day is practically but a very slight advance upon the primary discovery. It is nevertheless a disagreeable fact.

The difference in selective sensitiveness between the ordinary and the isochromatic is plainly shown in Fig. 2, which illustrates graphically the sensitiveness curves of a Seed "27" and a Cramer instantaneous Isochromatic."

It will be noticed that the "iso" plate possesses a secondary maximum at about  $\lambda 5600$ , which is approximately even in intensity from  $\lambda 5300$  to  $\lambda 5700$ , a most convenient coincidence, as this region corresponds precisely with the flat portion of the objective colour curve. It results, therefore, that if the isochromatic plate be placed in the plane of  $f$ , the secondary sensitiveness of the plate and the focus for the yellow-green rays are coincident. It is of course true that all of the wave-lengths between, say,  $\lambda 5200$  and  $\lambda 5900$  do not come to *precisely* the same focus, but they do so with practical identity.

The strong maximum at the blue end of the isochromatic plate

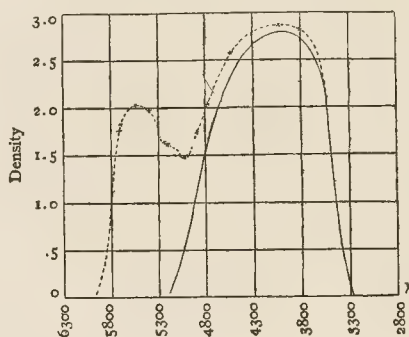


Fig. 2.

is an unfortunate condition which up to the present has not been susceptible of much improvement. It does not exist from lack of effort to remove it, because both the plate-manufacturer and the independent investigator have devoted much time to its subjection, but without satisfactory results; for while it has been possible to lower it by the introduction to the film of otherwise inert dyes whose absorption corresponded with the blue maximum, yet it has

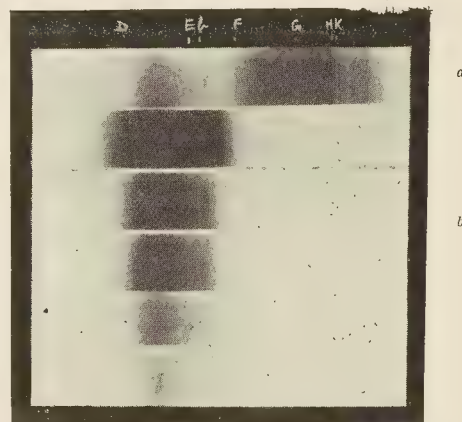


Fig. 3.

a. Cramer instantaneous isochromatic unscreened.  
b. Cramer isochromatic increasing exposures through colour-filter.

been at the expense of speed, which is thereby greatly lowered. The Cramer "slow iso" is typical of such a plate.

It might at first thought be considered possible (and several astronomers have attempted) to make use of such a stained plate in astronomical photography; but it must be remembered that, although the sensitive film may be so loaded with dye as effectually to filter out the over-active blue-violet rays from the light transmitted by it, yet on the surface of the film the particles of silver bromide are covered with a layer of dye of extreme attenuation; hence there would always be action by the blue-violet light

<sup>1</sup>Proc. Roy. Soc., 54, 143, 1893.

<sup>2</sup>Astrophysical Journal, 11, 89, 1900.

<sup>3</sup>Theory of the Photographic Process, p. 214.

<sup>4</sup>Where  $I$  = intensity, and  $t$  = time of exposure.

<sup>5</sup>A. Becker and A. Werner, "Das photographische Reziprozitätsgesetz für sensibilisiertes Gelatin bei Erregung mit Licht verschiedener Wellenlänge," Zeitschrift wissenschaftliche Photographie, 5, 382, 1907.

although in a lessened degree, which would result more or less in submergence of the sharp image under a veil of confused out-of-focus light of comparatively great actinic energy. The out-of-focus red light at the other end of the curve need not be considered, as the plate is insensitive to radiations of this wave-length, even with very prolonged exposure. The only practical method for the elimination of this out-of-focus blue-violet light is by the employment of a colour-filter which will absorb it before reaching the sensitive film. It is axiomatic that pure monochromatic light acting upon the plate will produce the sharpest image.

Not only is it impossible to construct colour-filters to transmit true monochromatic light, but even if it were possible they would be valueless, because the light transmitted would be too feeble to be effective. They are constructed, therefore, to absorb all wave-lengths shorter than from about  $\lambda 4600$  to  $\lambda 5400$ , depending upon the class of work for which they are to be used. It is necessary, generally speaking, to have a colour-filter with a closer approximation to monochromatism when engaged in the photography of faint detail. This is a point well understood by all experienced photographers, and approximate monochromatic light-filters in photo-microscopy have been used a greater number of years than I would care to go on record as quoting. Such filters

have also, for some time, been a regular article of commerce. There is a great deal of uncertainty relative to the absorption of a certain colour-filter, and it may as well be stated now that photographic absorption of a colour-filter, with a certain plate, depends upon the exposure which that plate receives. Increased exposure means increased extent of action. This is true of all filters (see Fig. 3).

The best position for the colour-filter is immediately in front of the sensitive plate. In such position it is known that it displaces the image by a distance equal to  $t \left( \frac{\mu-1}{\mu} \right)$  when  $t$  is the thickness and  $\mu$  refractive index; hence it is necessary, for this cause at least, to determine the position for a new filter before exposure is made. For critical work it is necessary to determine focus separately for two colour-filters, even should they possess practically the same absorption, because in manufacture, no matter what amount of care is used, small differences are unavoidable.

If the filters possess different absorptions, then it requires more than a primary knowledge of that and the objective's colour curve to know that the focus must necessarily be different.

ROBERT JAMES WALLA

(To be continued.)

## ON THE SIZES OF STEREOSCOPIC PRINTS.

(From the "Photo-Revue.")

M. LIHOU, President of the French Stereo Club, in a recent article on the "Æsthetics of Stereoscopy," well said that "the beauty of stereoscopic prints is intimately connected with their size." And, further, addressing himself to those who adhere rigidly to the same size, he adds a caution as to falling into a groove when following this branch of photography.

It is easy to show that in adopting the square form of stereoscopic prints, obtained with lenses the focus of which exceeds about 4 inches,

The images obtained will then be  $a, b$ , and  $c, d$ . Taken in these conditions they will partially coincide with each other, and be limited at their point of contact by the line  $h, e$  (the line of separation), which thus compels us to dispense with the two portions of the image  $e, c$ , and  $e, b$ . The points of view being in  $o, o'$ , should be equal to  $o' e$ , and  $o f$  to  $o e$ , so that the parts  $o, g$ , and  $g d$  will be also sacrificed. There remains, therefore, the portion of the image included in an angle of 26 deg.—namely,  $f e a m$ —the width of which corresponds to the separation of the lenses. Under these circumstances the whole height at disposal, equal to the line  $a b$ , can be given according to the subject, instead of limitation

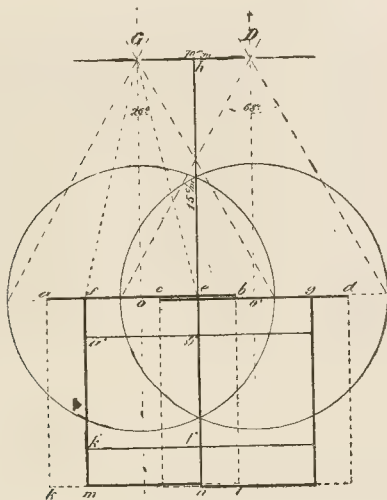


Fig. 1.

the photographer is compelled to sacrifice part of the image in the direction of breadth, and he usually, by his own will, dispenses with an equivalent portion in the direction of height, so that of the total image,  $a, b, k, l$ , Fig. 1, given by the lens, only the square centre  $a^1, b^1, k^1, l^1$  is retained, the rest being rejected. If, in the interests of the whole, we are able to gain in height what is lost in breadth, we should employ every possible means to gain this end. Assume that the two lenses,  $G, D$ , placed at a distance apart of 70 mm., and each of the focus of 6 inches, cover an angle of 58 deg., the diameters of the fields will then be about  $6\frac{3}{4}$  inches, and the squares falling in this circular field will have each side about  $4\frac{3}{4}$  inches in length.

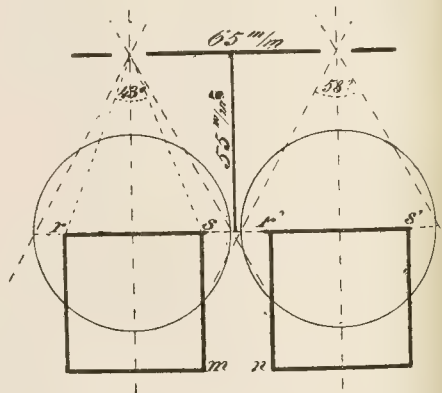


Fig. 2.

height to the dimension  $a^1 k^1$  actually adopted. The print obtained will be  $f, e, n, m$ . The more the lenses are separated, the less do the two fields overlap, and the greater the width of the image is permissible. This latter will be limited by the separation of the eyes, which should not exceed 70 mm. ( $2\frac{3}{4}$  inches), otherwise it is difficult to unite the two pictures. From Fig. 1 it will be understood that the separation of  $2\frac{3}{4}$  inches is the most suitable for most sizes, and why also the space left between the two pictures of a stereograph has no object, in fact. There being an image at  $e, e, b$ , our desire is to utilise the whole of it and not to suppress it. Quite otherwise is it in the case of small stereoscopic prints obtained with the apparatus fitted with lenses of from 2 to  $3\frac{1}{2}$  inches.



where the square fields given by the lenses do not overlap. In the case of a focal length of 55 mm. (about  $2\frac{1}{4}$  inches), and a field of 55 deg. (Fig. 2), the images  $r, s, r^1, s^1$ , will have a diameter of squares inscribed in circles, and will measure on each side about 45 mm. (about  $1\frac{3}{4}$  inches). We shall consequently be able to see before our eyes the entire images, having an angle of about 45 deg., and not two truncated images, giving us an angle of only 22 deg. as in the preceding example. The shape will necessarily be rectangular, although by the use of masks we can obtain a shape of height in reference to the width as may be necessary, without loss at the expense of part of the image.

space  $m, n$ , between the two images can be varied without affecting their size. And the separation of the lenses can be modified to suit the user's eyes to 63 or 65 mm. The perspective in this will be better and the result obtained more natural. The advantage of the small apparatus is undeniable, apart from the very compact form which the small size gives to it. The wide angle of view is, however, of the greatest interest. If, by increasing the focal length of the lenses, we increase the height of the images, we will increase their breadth at the same time, and the images will then square up to the point at which they meet, after which the height alone can be increased in proportion to the covering power of the lenses, whilst the angle of view included in the direction of the view will decrease in proportion. The maximum focus giving sharp prints which join exactly is about 9 cm. (just over  $3\frac{1}{2}$  inches), and the angle of view of 58 deg. The diagonal being 4 inches, the height will be 7 x 7 cm., if the separation of the lenses is 70 mm. judgment the 9 x 15 plates, or 10 x 15, should give the best results for mounted stereoscopic prints. We say 15, in order to facilitate mounting, the print should have a width of exactly 7 cm. of 11 or 12 cm. focus will thus allow of the camera being made in a very portable shape, and the prints will be from 9 to 10 cm. (inches) high.

Eye-pieces of stereoscopes generally in use cover much too small an angle, with the result that when viewing prints which are less than 7 to 8 cm., the distortion is visible to the detriment of the result. Another drawback is the impossibility of viewing with the eye-piece the prints obtained of size 9 x 18. As the height of the pictures increases, their points of view being no longer on the same plane as the lenses, the upper part is greatly distorted. It should be possible, however, to remedy this defect by providing an adjustment of the apparatus by which a panel carrying the two lenses could be moved up and down, an addition to the stereoscope which would allow of prints of any size being observed.

L. STOCKHAMMER.

## Exhibitions.

### THE PORTRAIT WORK OF FURLEY LEWIS, F.R.P.S.

A photographer is so clever at his work that the risk of failure is unknown to him, his exhibited results are likely to suffer from this, and that is, the dreaded dead-level. A dead-level of excellence is only one degree less uninspiring than a dead-level of mediocrity, because, in all things, the unco' guid cannot come to the sympathies of those who struggle and sometimes fall. As we round the gallery at 66, Russell Square and contemplate the masterly photography of Mr. Furley Lewis, one almost longs to go from the high standard. In this one respect Mr. Lewis is at a disadvantage. His works are all of one style—all but a very few of ladies; their scale is, generally speaking, the same, and the method of presentment similar. In spite of this, nevertheless the exhibition is admirable, simply because, in these several instances, one sees that a fine taste has proved all things and kept all things.

There are no rash attempts at singularity, no wild experiments in colour, mounting, scale, lighting, definition, and so on, which in other exhibitions have sometimes evoked more than pleasure. An unexceptionable method having been adopted, it is thenceforward adhered to. That Mr. Lewis is a professional, rather than an amateur, may be due in part to that fact. He is a Bohemian artist, whose attitude to his work is almost unique. A goodly sprinkling of the portraits are evidently never taken as profitable commissions. His more the rendezvous of people of interesting temperament in a reception-room of a commercial portraitist. No doubt

many other photographers would be glad of the same free and easy methods of work and the same immunity from the worries of a properly conducted commercial establishment, and under such conditions many might perhaps be found to do equally admirable work. But there is not room for many such, and, after all, the fascinating personality of Mr. Lewis is a business asset denied unfortunately to all but a very few.

Of the well-known faces in the photographic world which figure here the majority of visitors will be able to judge from their own personal knowledge. It will be seen how very cleverly the character of each is suitably kept in view in the posing and lighting. Compare, for instance, the portraits of the very first two on the list, Rev. F. C. Lambert, and F. J. Mortimer. But of one or two others who are not photographic celebrities, the writer of this can add his unhesitating testimony as to the successful seizure of the quintessence of the sitter's personality. In the portrait of the gigantic Niels M. Lund, for example, the strength of the painter is felt as much in the hands as in the head, and even his coat has a force that belongs to its wearer. Another painter, the late H. G. Moon, is shown with even more intimate knowledge and understanding. His strong, keen, and kindly face is a triumph of powerful modelling, and his nervous hands are made much of. The pose is at once animated and restful—a pause between the puffs at his pipe whilst he listens to a friend's remarks. This is perhaps the finest thing in the exhibition; its breadth and choice lighting could not be surpassed. The silver-haired Dr. Howard Barrett, energetic and precise; the genial Oscar Arndt, with fuller locks of the same brilliancy; the homely and rugged face of Prince Kropotkin, each of these are veritably to the life, and in no way whatever beautified for commercial expediency. Not even the little picture of the photographer's own wife and child owes its charm to anything but pure and unadulterated photography.

In the portrait of Mrs. Lund there is a departure from the generally adopted method; for the lady's head is lit from behind and above, being itself in a flat tone, delicately differentiated from the tone of the background, and edged with light upon the hair, neck, and shoulders. This is a very lovely essay in light. "Colleen" also is a delightful study of a head of unmistakable Irish beauty. It has a fascinating tilt backwards, being in profile. The beauty of this as a mere print, apart from its subject, is noteworthy.

The visitor should not omit to study the fine profile of Terence O'Brien and the splendid expression and mastery of a difficult pose in Reginald Dance. Mr. Furley Lewis is to be congratulated upon the quiet and dignified excellence of all his portraits.

F. C. TILNEY.

THE Manchester Amateur Photographic Society have opened an exhibition of 120 oil prints in the society's rooms in Market Street. Mr. S. L. Coulthurst shows a charming lakeside view which resembles an etching very closely, and Mr. Harry Holt (Rochdale) and Dr. A. T. Lakin have portrait studies. A close examination of Mr. C. F. Stuart's (Liverpool) "Young April" will repay the beginner who desires to rise above the commonplace in composition and rendering of atmosphere. Another Liverpool exhibitor, Mr. J. D. Johnson, reaches a high level in his "Snow in the City." Mr. J. W. Atherton (Tudmorden) might be more successful if his impressionist ideas were less deeply ingrained in his work. Three pictures are shown by Mr. G. E. H. Rawlins, to whom may be credited the introduction of the oil-printing process. Miss Stevenson's "A Portrait" is one of the best things in the exhibition, although probably more attention will be called to the colour work of Mr. E. Warner (London), who in "Fowey Ferry" has treated his subject charmingly.

The Manchester Corporation have asked the society to get an exhibition together in Queen's Park. This probably will be opened in Whit-week, and will form the first official recognition of photography as "an art" by the municipal authorities.

THE Morpeth Y.M.C.A. Camera Club's third exhibition was opened on May 14 in the lecture hall of the association. The judge was Mr. Charles F. Forster, F.R.P.S., Liverpool, and his awards were as follows:—

#### OPEN CLASSES.

Class A.—Bronze plaque, "The Deserted Mill," Harry Lindoe, Sunderland; bronze plaque, "A Lowland King," J. W. Whitehead, Alva, N.B.; bronze plaque, "The Solace of Old Age," O. C. Wilmot,

Sunderland; diploma, "Well Caught!" Alfred Taylor, Whalley; diploma, "Profile," Sydney H. Wood, Darlington; diploma, "Study of a Head," W. F. Holdsworth, Beckenham, Kent; diploma, "Departure of the Mauretania," W. Coats, Junr., Tynemouth.

Class D (Lantern Slides).—Bronze plaque, "Song Thrush," G. A. Booth, Preston; diploma, "Native Café, Tunis," Ald. G. B. Bainbridge, Espley Hall.

Class C (Federation Class).—Federation plaque, "To Wait an Answer," Easton Lee, Newcastle; bronze plaque, "Dawn," Harry Lindoe, Sunderland; diploma, "The Foy Boat," Harrôp P. Wight, Gosforth; diploma, "A Bit of Newlyn, Penzance," J. W. Gladson, Sunderland.

#### MEMBERS' CLASSES.

Class D.—Bronze plaque, "River Mists," Harry Dixon; diploma, "The Heights, Madeira," Ald. G. B. Bainbridge.

Class E.—Bronze plaque, "Puzzled," L. A. Loades; diploma, "Landing the Catch," J. T. Harrison.

Class F.—Bronze plaque, "Roses," L. A. Loades; diploma, "Flower Study," J. T. Harrison.

Championship (Members' Classes).—Harry Dixon.

Winner of Monthly Competition held during past session.—Harry Dixon.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents have been made between May 4 to May 9:—

MATERIAL.—No. 9,666. New or improved material or substance for photographic or like purposes. Ilford, Ltd., and Frank Forster Renwick, 8, Quality Court, Chancery Lane, London.

COLOUR SCREENS.—No. 9,693. Improvements in or relating to the manufacture of colour screens suitable for photographic and other purposes. George Sydney Whitfield, 46, Lincoln's Inn Fields, London.

CINEMATOGRAPHS.—No. 9,699. Improvements in apparatus for producing and displaying cinematographic photographs. Max Hansen, 256, Portland Street, South Norwood, London.

CINEMATOGRAPHS.—No. 9,711. Automatic light cut-offs for machines for projecting cinematographic pictures. Vincent Edward Horsman, "Cratfield," Grove Road, Wallasey, Cheshire.

CINEMATOGRAPHS.—No. 10,014. Improvements in mechanism employed in the production of cinematographic and microscopic pictures, and dark slide for carrying sensitive photographic plate for taking impressions. Henry William Hamblin Palmer, 43, St. Martin's Lane, Charing Cross, London.

#### COMPLETE SPECIFICATIONS ACCEPTED.

These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

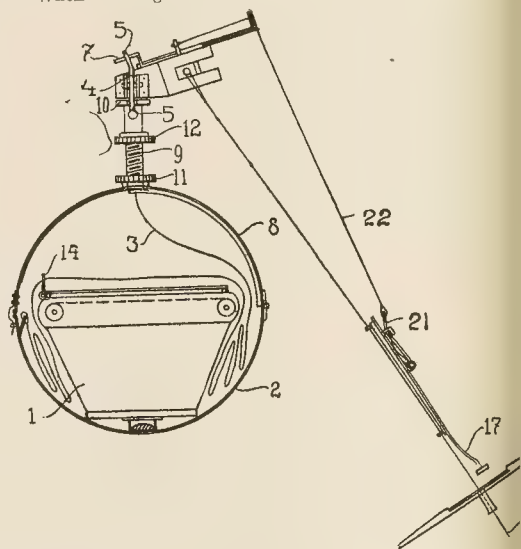
KITE CAMERAS.—No. 18,399. 1907. The invention consists of a photographic apparatus which can be let fall from a kite or other aerial support, and a photograph taken during the fall. The apparatus is thus free from the influence of the body from which it falls at the moment the exposure is made.

The apparatus is used in the following manner, it being assumed that the photograph is to be taken from a kite. To the kite is secured the holder 4, the levers of which engage under the handle plate 10, and thus connect the holder and the camera. By loosening the clamping nut 11 the handle can be moved in the slot and thereby the object glass is placed at any desired angle. The direction in which it is desired to photograph is fixed by turning the camera with the bottom portion of the handle in the union 12, and thereupon clamping it.

After the shutter mechanism of the camera has been cocked in well-known manner, the cord 3 is passed through the eye 14, connected to the shutter mechanism, thereupon the two parts of the casing 2 are closed, and the kite with the device suspended to it allowed to rise. The apparatus in that position is shown in the figure.

After the kite has reached the desired height a runner is up on the holding cord 15, and presses against the member 17. runner consists of a simple disc 16, which can be moved by the On the holding cord the member 17 connected to a locking mechanism is suitably secured, and against this member the runner 16 is pressed. Thus the locking device of any desired form is released, upon the plate 7 is drawn back by a spring arranged in the locking device.

When the length of cord 3, loosely arranged in the casing



extended and begins to move through the eye 14 the shutter is released and the plate is exposed during the free fall.

The oscillations or the movements of the kite cannot have any effect on the camera falling free in the vertical direction, that a sharp and clear picture is obtained.

The movement of the apparatus in the vertical direction the exposure of the photographic plate does not affect the picture taken if the exposures are sufficiently short. Georg Bruno, 32 Residenz Strasse, Strehlen, Dresden, Germany.

CINEMATOGRAPHS.—No. 14,493. 1907. The invention relates to the production of reduced cinematograph pictures by photographing the successive pictures of an ordinary cinematograph film through a microscope on to a sensitised plate or film, to which means are given such that the reduced series of pictures is produced in a spiral, or in spirals, or in a ring, or in concentric rings on the plate or film. Bessie Kate Brown and Theodore Brown, Villa Road, Brixton, London.

CINEMATOGRAPH-PHOTOGRAPH.—No. 9,391. 1907. The invention consists of a cinematograph film, which is adapted to be synchronous with a concordant record of sounds, provided with two photographic pictures, one of the sets representing place, events, characters, the deeds of said characters or suitable items of interest relating to a song, musical production, the like, and the other set representing the expressions, of a singer or other performers. George Robson, 21, Rochdale Road, Leyton, Essex.

#### New Trade Names.

VINDONISSA.—No. 300,336. Chemical substances and compounds used in photography and colours for typographic and lithographic impressions and impressions on metal, artists' colours, blacks, siccatives, or dryers, varnishes included in Class 1, like articles included in Class 1. Chemische Fabrik Brugg & Co., near Brugg Station, Brugg, Canton Aargau, Switzerland, manufacturers. February 10, 1908.

DEVICE.—TWO ROMAN SOLDIERS.—No. 300,337. Chemical substances and compositions used in photography, and colours for typographic



photographic impressions and impressions on metal, artists' lamp-blacks, siccatives, or dryers, varnishes included in and the like articles included in Class 1. Chemische Fabrik Actien-Gesellschaft, near Brugg Station, Brugg, Canton, Switzerland, manufacturers. February 10, 1908.

RED BALL BRAND).—No. 301,289. Chemical substances used in manufactures, photography, or philosophical research, and anti-corrosives, but not including white lead and not including any of a like kind to white lead. Stevenson and Howell, Ltd., and Works, 95A, Southwark Street, London, manufacturing. March 13, 1908.

—No. 301,644. Chemical substances used in manufactures, photography, or philosophical research, and anti-corrosives, but not including paints and not including any goods of a like kind to Devices, Ltd., 150, King's Cross Road, London, manufacturing. March 24, 1908.

—No. 302,189. Chemical substances used in manufactures, photography, or philosophical research, and anti-corrosives. The Nobles and Hoare, 3, Cornwall Road, Stamford Street, S.E., varnish and japan manufacturers. April 11, 1908.

—No. 302,190. Chemical substances used in manufactures, photography, or philosophical research, and anti-corrosives. The Nobles and Hoare, 3, Cornwall Road, Stamford Street, S.E., varnish and japan manufacturers. April 11, 1908.

—No. 302,192. Chemical substances used in manufactures, photography, or philosophical research, and anti-corrosives. St and Harding, Mansion House Chambers, 11, Queen Street, and Alpha Works, Millwall, London; and Phoenix and Temple Gate, Bristol, white lead, paint, colour and manufacturers. April 11, 1908.

—No. 301,509. Photographic cameras. Edward James Feilden, smont Road, Springfield Park, Acton, London, W., chief agent to a public company. March 19, 1908.

—No. 301,114. Photographic materials included in Class 39. Ltd., 56-61, Clerkenwell Road, London, E.C., dealers in photographic materials. March 7, 1908.

—No. 301,313. Pictures, photographs, and photo- mounts, made of paper or cardboard. Herbert Arthur son and Edward Rowlandson, trading as Hutchinson and son, 12, Phillimore Terrace, High Street, Kensington, W., photographers. March 13, 1908.

## Analecta.

*from our English weekly and monthly contemporaries.*

### An Autochrome Exhortation.

Photographers have been seeking (writes Mr. J. C. in "The Amateur Photographer and Photographic News") to eliminate the element of colour from their mental pictures, and to look upon nature as a colour-blind man would be looking for their pictorial results on fine composition, light and shade, and beauty of tone. The various photographic exhibitions all over the world testify to their success. By the indefatigable energy and genius of the Brothers Lumière photography has been enriched with a new and beautiful characteristic of which is the wonderful rendering of nature to which we have for so long turned a blind eye. The trouble is that in most cases photographers are unprepared to use the new and wonderful power. Those who have been most successful in eliminating colour from their consideration often know too well that it is now within their reach. The first of all photographers who were able to obtain Autochrome pictures have been to ransack larder and garden and the brightest and most varied coloured objects they could find. These, fearfully grouped upon a scarlet or bright cloth (with an actinometer hidden from view behind one corner), were tremblingly focussed and exposed till the actinometer told that they were properly cooked. May one who has suffered from blindness and monochromatic vision for many years, and whose colleagues in affliction the necessity of treading this new and brilliant path; remembering that harmony

is as important in colour as in tone, while a discord is more painful in the former case; that contrasts of colour are as valuable, in the right place, as contrasts of light and shade, and even more telling; and that finally, although in a colour picture scheme is the first essential, yet composition and light and shade have also to be considered.

### Drying Negatives.

Glass negatives may be dried quickly in two ways (says a writer in "Photography and Focus" for May 19)—by spirit or by heat. The negative should first be allowed to drain "surface dry," and its back and edges should be wiped quite dry. It is then placed in a dish and covered with methylated spirit. After remaining for three minutes in this, it is drained and transferred to a second bath of spirit for a couple of minutes, and then put up to dry in a warm place. It will stand more heat than if it were wet with water. In this case the drying is rather deceptive, and the negative may appear surface dry, yet still be sticky enough to adhere to the paper in the printing frame. It is well to let it have as long again to dry as it appears to take. One bath of spirit may be used, but in such a case the drying takes longer. The spirit may be kept for this particular purpose, and poured back in the bottle afterwards. In such a case, finely powdered plaster of Paris should be kept in the bottle, which should appear about a quarter full of the plaster, and when the spirit is poured back it should be well shaken up. The plaster extracts some of the water which the spirit has acquired from the negative. To dry negatives by heat, the film must first be made insoluble. To effect this, after the last washing it should be put in commercial formalin 1 oz., water 5 oz., for three minutes. It may then be momentarily rinsed under the tap and dried in front of the fire. A simple method of drying by heat is to place the negative, after the treatment with formalin, in a dish of boiling hot water for a minute, and then to put it in a current of air. The heat acquired from the water causes it to dry in a minute or two. These methods, however, never result in quite such good negatives as when the drying has taken place naturally.

## New Books.

"Die Milchstrasse." By Professor Dr. Max Wolf. Leipsic: Johann Ambrosius Barth. Price 4 marks.

Professor Max Wolf has produced an attractive volume in which is given a short description of the Milky Way. It is illustrated by a series of beautiful photographs taken at the Heidelberg Observatory with a wide-angle lens. These are presented in ten plates, showing the most prominent regions of the galaxy, all taken with a small lens with a large field, thus giving more close approximation to what is seen with the unaided eye than the usual large scale photographs. The short discussion of the various theories of the construction of the stellar universe is illustrated by photographs of the more prominent spiral nebulae, and large scale pictures of a few of the richest regions.

"The Nature Book." Part I, May 23, 7d. nett. Cassell and Co., La Belle Sauvage, London, E.C.

This is the first part of a new publication that is to be completed in twenty-four fortnightly parts, and, from this first number we should judge that it will be a work highly appreciated by photographers. It is devoted, as its title indicates, to Nature study and is well illustrated with photographs and reproductions of water-colour drawings. The quality of the illustrations can be judged by the fact that among the numerous contributors are Messrs. Douglas English, Martin Duncan, Richard and Cherry Kearton, Walter Crane, J. Lomas, Henry Irving, and J. J. Ward. The paper used is of good quality and the reproductions therefore show up excellently. The present number contains an introduction by Walter Crane, and the first parts of articles on "How to Know the Wild Animals," "How to Know the Clouds," "How to Know the Wild Flowers," "How to Know the Birds," and "How to Know the Trees Growing in Great Britain." This list of titles fairly well shows the field that the book will cover, and when we realise that each of these subjects is illustrated in a detailed fashion that is quite unfamiliar in the ordinary Natural History book the value of the work, as a whole,

can be appreciated. Mr. Henry Irving's photographs of wild flowers are worth special mention, as examples of what such illustrations should be. The full page illustrations include a fine example of Cherry Kearton's work and a reproduction of a water-colour drawing by Mrs. Allingham.

"Annuaire Général et International de la Photographie." Plon, Nourrit and Cie., Paris, 1908, 6 francs net.

This is the 17th year of this annual, and this volume is conducted on the same lines as previous issues. As usual, it treats the reader to a hors-d'œuvre in the form of a comedy in one act before proceeding to the more serious task of reviewing the year's work in photography. Numerous tables, recipes, and formulæ are collected together in the third part of the book, and though the information concerning English societies and publications is by no means up-to-date, the annual, as a whole, is a useful and excellently got-up work of reference.

"The Photo Miniature," Nos. 87 and 88. Tennant and Ward, New York, and Dawbarn and Ward, London.

The March number of "The Photo Miniature," No. 87, is devoted to "Bromide Enlarging Made Easy," and it treats the subject in very clear and lucid fashion, covering the ground very completely in a small number of pages. Numerous useful tables are given, and this number of the Miniature should be a very useful one to many photographers. The April number of the Miniature is No. 88, and this treats upon "Defective Negatives, with Practical Remedies." This is not simply a book on intensification and reduction, as its title might seem to imply, but one treating of a number of familiar troubles due to sundry causes, such as drying marks, developer stains, stains from packing and sundry chemicals. Scratches, cracks, etc., are also dealt with, and altogether the book is one of a rather novel and very useful kind.

"Handbuch der Praktischen Kinematographie," von F. Paul Liesegang. Liesegang's Verlag, Leipzig, 8vo, 302 pp., 125 illus. 8 marks, bd. 9 marks.

The work before us is—an eminently practical one, intended mainly for the instruction of operators of exhibition machines. The subject is very clearly explained, as might be expected from an author of Herr Liesegang's repute, and a very good outline of the general mechanical details of typical present-day machines is given with impartial consideration, the Liesegang machines receiving no undue prominence. The book is written on special lines; no historical matter is included, nor is any account of the various uses of the cinematograph given. The space thus saved is devoted to a description of the optical system, including variable focus lenses, and to a sixty-page account of all practical methods of lighting, both these subjects being treated from the users' point of view rather than from a theoretical one. The taking of negatives, the making of positives and the care of films, all find a place, while the chapter on flicker and its relation to shutter-aperture and brilliancy of light is written in a very practical way. The book, indeed, is not intended for the constructor or inventor, but rather to give that general information respecting the actual working of commercial machines and how to get the best out of them which has hitherto only been transmitted by word of mouth to purchaser or operator. Indeed, the work might well have borne the sub-title "The Cinematograph Operator's Handbook," and we believe it to be the first German work of that type.

**A PHOTOGRAPHIC RECORD BOOK.**—At a meeting of the Colwyn Bay Town Improvement Association, held on the 14th inst., it was decided to establish and preserve at the Town Hall a photographic record book. The idea is to procure not merely photographs of the many picturesque spots in the district, but photographs showing the development of the town at various times, interesting public functions, old buildings and improvements, all kinds of photographs, in fact, which will in the future have any historical interest. Amateur photographers who have prints of local interest are invited to contribute to the portfolio. The name of the donor will be recorded under each print if desired, together with requisite particulars. Prints should be sent to The Secretary, Town Improvement Association, Town Hall, Colwyn Bay.

## New Apparatus, &c.

**SILVERINE FRAMES.**—Messrs. John J. Griffin and Sons, Ltd., send us a specimen of their "Silverine" frames, which have the effect of finely frosted silver. They are decorated with



relief, and are specially recommended for dark black-and-white sepia prints. The sizes and prices are as follows: Midget, C.D.V. or  $\frac{1}{4}$ -plate, 9d.; cabinet or  $\frac{1}{2}$ -plate, 1s. 1d. The frame obtainable with the opening oval, round, or rectangular.

## New Materials, &c.

The New Watkins' Speed List: Watkins Meter Company, Hertford.

We have received a copy of the new speed card referred to in "Analecta" last week. This differs from the old list in that the development speed is given as well as the exposure speed. Development speed is denoted by letters, which signify a number of minutes' development at 60deg. F., according to the following table:—

Development Speeds.					
V.Q.	Q.	M.Q.	M.	M.S.	S. V.S.
$\frac{1}{2}$	$\frac{2}{3}$	$\frac{3}{4}$	$\frac{4}{5}$	$\frac{5}{7}$	$\frac{7}{11}$

These times are intended to apply to the special Watkins developer, which will shortly be issued. A novelty is proposed in the form of a thermo-indicator attached to the bottle, so that changes can be made for the actual temperature of the workroom. It is pointed out that, while other developers will require different development times, yet the ratio between the different groups of plates will remain the same, so that the table of speeds is useful in all cases, whether the special developer is used or not. There is no doubt that a system of development, based on temperature, is the most satisfactory in use, and Mr. Watkins' system will no doubt speedily prove its value.

**The Castell Pencil.** A. W. Faber, 149, Queen Victoria Street, London, E.C.

Mr. A. W. Faber submits to us a sample of a new "Castell" pencil of very high quality. The Castell pencils are supplied each, or 3s. 6d. per dozen, and, having had the opportunity of using them for some little time, we can fully confirm the manufacturer's statements as to quality, durability, and smoothness of work. Probably some of the harder grades will be of great service in retouching. It can be obtained in sixteen grades, from 6B to Nos. 7 and 8H are intended for lithographic work on stone.

**Illingworth's Cream Crayon Smooth Bromide Paper.** T. Illingworth and Co., Willesden Junction, London, N.W.

Messrs. Illingworth have introduced a new brand of their bromide paper, which is likely to be appreciated. It has a very pleasant "natural" surface, not dead smooth, and has only just sufficient gloss to obviate the dull matt effect generally given by such papers. The paper is rapid, and yields excellent blacks, and in our own tests we can recommend it to the attention of those who like a surface that is neither matt nor yet glossy.



# CATALOGUES AND TRADE NOTICES.

**THE PRISM.**—The current issue of this beautiful miniature album contains an article on "Flower Portraits." "The Prism" is obtainable from Messrs. A. E. Staley and Co. for 1d.

**PHOTOGRAPHIC MATERIALS.**—Mr. E. J. Thom, of 63, St. Paul's Churchyard, London, E.C., has issued a list of the various photographic materials which he is in a position to supply, amongst which are a large variety of printing papers, mounts, backgrounds, and other accessories. In fact, most photographic requisites from printing machines, blocking, and stamping presses, etc., down to small articles as postal wrappers may be obtained from Mr. Thom at the above address, who will supply full particulars as to prices, etc., upon application.

**CITY SALE AND EXCHANGE,** of 54, Lime Street, London, E.C., has issued a copy of their latest list of second-hand photographic apparatus. The list includes particulars of a large variety of hand cameras and lenses, which are offered at considerably reduced prices, and include goods by most of the well-known makers. A copy of the list, which is well worth perusal, will be sent free on application to the above address, the firm also stating that other apparatus will be taken in whole or part exchange for any article selected from their list.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

SATURDAY, MAY 23.

**Middlesex Photographic Society.** Outing to Ayot (combined outing of affiliated Societies).  
**Camera Club.** Excursion to Hull.  
**London Photographic Society.** Affiliated Societies' outing to Ayot, near field.  
**North Photographic Society.** Affiliated Societies' outing to Ayot, near field.  
**Photographic Society.** Excursion to Claygate.  
**Stereoscopic Society.** Outing to Wake Valley.  
**Urban Photographic Society.** Affiliated Societies' Outing to Ayot, near field.  
**Photographic Society.** Excursion to Bilton, Dunchurch, and Thurlaston.  
**Photo Art Club.** Excursion to Fetteresso.

MONDAY, MAY 25.

**London and District Photographic Society.** "Time Development." W. F. E. R.  
**London Camera Club.** "Stereoscopic Photography." W. H. Trigg.

TUESDAY, MAY 26.

**Photographic Society.** "A New Method of Securing Uniformity in Bromide Printing." Thomas Manly.  
**Photographic Society.** "Trimming and Mounting." A. J. Linford.

WEDNESDAY, MAY 27.

**Technical College Photographic Society.** "The History of Colour Photography." R. C. Gale.  
**Camera Club.** Portfolio Evening.  
**Middlesex Photographic Society.** "Gum Bichromate." C. Wille.  
**Urban Photographic Society.** "Pictures from Holland." Stanley E. Ham.

THURSDAY, MAY 28.

**North Photographic Society.** "Bromide Printing and Toning." E. G. R.  
**London and District Camera Club.** Members' Evening.  
**London and Provincial Photographic Association.** "Sinop Demonstration." Yerbury.

### ROYAL PHOTOGRAPHIC SOCIETY.

General meeting on Tuesday, with the president in the chair, Mr. H. Oakden gave an extremely interesting lecture on architecture in Ireland. He began by a historical—or, rather, pre-historical—survey of the subject, and showed a fine set of slides illustrating the national architecture from the most primitive cromlech-houses, tumuli, and round towers up to quite modern buildings. The audience showed a marked appreciation of the lecture, which was quite a valuable one from an archaeological and historical point of view.

**LONDON CAMERA CLUB.**—Mr. W. F. Slater, F.R.P.S., representing the Kodak Co., Ltd., read a paper last week on "The Theory and Practice of Time Development," having particular reference to the new and highly ingenious Kodak tank. An unusually large number of members attended. It is not too much to say that the tank was a model of lucidity and arrangement, and must have

afforded the beginners a valuable lesson, a series of glorified kindergarten models materially assisting towards a comprehension of the principles underlying the subject chosen.

A very strong case was made out for "time development for a fixed period," and had Mr. Slater contented himself with claiming that the Kodak system was capable of producing a far greater percentage of good results than those obtainable by the ocular method all present would have cordially agreed with him, so far as the system was applicable to the less advanced worker, and would probably have admitted, as quite open to argument, that the expert on an average might equally benefit by adopting it. The lecturer, however, went very much further than this, and in effect undoubtedly contended that development for a fixed period was capable of doing, in every case and under all conditions, everything that variations of time or modifications of the developer could achieve. Highly controversial points were raised at every turn and dealt with summarily, and even dogmatically, in favour of the system advocated. A comparison was also drawn between films and plates as regards relative cost and time of working, which by no means found acceptance. It would perhaps not be fair to give the entire purport of the animated and incisive discussion which followed, because at its close there was insufficient time to enable Mr. Slater to reply fully; indeed, he said, it would take an entire evening to do so. It would be equally unfair not to mention that one and all congratulated him on his lecture, although a general opinion was expressed that he had seriously weakened an excellent case by overstating it. Mr. E. A. Salt tried in vain to get the lecturer either to admit or deny the influence of a bromided developer, applied, in the first instance, in cases of known over-exposure. Dr. Mees pointed out that the work of Messrs. Hurter and Driffield, Mr. Watkins, and Dr. Sheppard and himself, was based on the assumption of correct exposure. Very few negatives in their entirety were, he stated, in this region. Messrs. Hurter and Driffield, in their second paper, had dealt with a bromided developer, which was most useful in cases of known over-exposure. Rules for under-exposure were complicated. For most snapshots one rule generally held—viz., "pushing development was equivalent to exposure." On the other hand, if portions of the negative had been correctly or fully exposed then, of course, prolonging development would make such parts too dense. He had shown years ago, at the Croydon Camera Club, that if two plates were taken, one fast and one slow, and an exposure given, under-timed for the fast plate, and also assuming the whole plate to be under-exposed, then the capability of the slow plate to stand forcing in development would more than compensate for the extra speed of the other. In reference to Mr. Slater's remarks as to the time taken to develop plates, a friend of his had exposed five gross during a recent trip on the Continent. According to the lecturer, their development should have occupied 150 hours. It did not. The president (Mr. J. M. Sellers) said that the Kodak system made no allowance for variation of subject; in strictness different sorts of subjects required varied periods of development. Mr. F. W. Hicks agreed. Snapshots on the sea and in the streets would certainly require different times. Mr. H. P. C. Harpur showed a satisfactory picture from a negative which necessarily had to be grossly under-exposed. It had been developed for three-quarters of a minute. Temperature of developer 80 deg. Fahr. Mr. W. H. Smith said that if two negatives were taken, having the same relative contrasts, but one very dense, the other of normal density, they would not give similar prints, in one process at least (presumably platinum-type). With the former the light might have just sufficient power to get through the most opaque portions, but the darkening of the paper underneath seemed to arrest further light action.

During the evening Mr. Long handed round a most successful autochrome of a group of flowers, which seemed to lack nothing in brilliancy or truth of colour rendering. When exposed the plate was over ten months old.

**THE AFFILIATION.**—At a meeting of the Executive Committee, held on Friday evening last, the resignation of Mr. Sterry from the position of treasurer, an office he has held for many years, was received with great regret, and Mr. Leslie E. Clift was appointed treasurer pro tem. The vacancy thus caused on the committee was filled by the appointment of Mr. C. Churchill (Woolwich P.S.).

The acting secretary reported that the Red Books were now in the hands of the affiliated societies. A vote of thanks was accorded

Dr. Evershed for the work he had undertaken in editing the Red Book this year, and it is hoped the value of the new edition will be duly appreciated. Several new lectures of considerable interest will be shortly ready for circulation.

The half-yearly meeting of the delegates will be held on Wednesday, June 17, at 6.30 p.m.

It was reported that the arrangements in connection with the outing to Ayot on May 23 were now quite complete, and an enjoyable day was anticipated.

**LONGRIDGE CAMERA CLUB.**—The following officers have been appointed:—President, Rev. R. W. Berry, A.T.S.; vice-president, Mr. J. Monk; secretary, Mr. J. Robinson; treasurer, Mr. H. Cross; auditor, Mr. Marshall; committee, Messrs. Dewhurst, Marsh, Crook, and the officers ex officio. The subscription has been fixed at 5s. per year.

**BEDFORD CAMERA CLUB.**—The third annual meeting was held at Deacon's Rooms. The Secretary reported that the membership is rapidly increasing, and that he held a substantial cash balance, although expensive fixtures had been purchased during the year. Mr. F. H. Langdon-Davies, a member thoroughly acquainted with the technical and pictorial sides of photography, was unanimously elected president, Mr. W. Deane, Mr. B. Schon, Dr. Willmer Phillips, Dr. Harvey Goldsmith and Dr. J. E. Morris were made vice-presidents, Mr. W. D. Simpson, hon. sec. and treasurer, and Mr. W. Norman Blake, hon. lanternist were re-appointed, and the following were chosen as the committee: Messrs. C. P. Anthony, J. Beanland, H. B. Wells, J. Shepherd-Smith, Charles E. Craddock, E. F. Buttfeld, W. H. Hodge, H. S. Brawn, G. Cocking and E. T. Fell. A new and important feature will be introduced into the club's programme for the coming season solely for the benefit of novices in the form of lectures by leading members, dealing with such subjects of elementary photography as exposure, development, printing, toning, enlarging, etc., and lasting from 7.45 to 8.15, when the ordinary meetings will commence. This will enable beginners to gain a knowledge of the groundwork of this interesting hobby. The first meeting of the new year will take place on Monday, May 25, when enlarging will be demonstrated. A local competition for prints will be held in the autumn, and the exhibition proper will take place early in 1909.

## Commercial & Legal Intelligence.

**ENLARGING FEES.**—Mr. A. S. Davis, 134, Cheapside, claimed £9, the balance of £11, for two photographic enlargements executed for Mr. Bhumgara, 135, London Wall. Mr. Croon Johnson, plaintiff's solicitor, said that the price was agreed at £5 10s. each, and the defendant paid £2 on account. Now the defendant said he wanted the photographs enlarged on the platinotype basis, but that was not stipulated until after the order was booked. Defendant said there was no doubt that the order was for the photographs to be enlarged in platinotype. Plaintiff said he was still willing to do them in platinotype. The Judge thought that was the best way out of the difficulty. Plaintiff, he added, would pay the defendant's costs.

**THE FREE PHOTOGRAPH BUSINESS.**—Mrs. Agnes M. Ball, of Hawes Road, Bromley, sued J. Misener, whose address was given as "The Studio," 17, Lewisham High Road, to recover 17s. 6d. Plaintiff said that defendant's representative called on her and said they were starting a business in Bromley, and with a view to advertising themselves he would give her a free enlargement of any photograph she liked to produce. After a certain amount of talk she gave him a photograph to be enlarged. It was very much against her will, but the man said it would be so kind of her to do it to assist him. After she had consented to have the free photograph the man said: "I suppose if you get a photo you will give us the order for a frame?" and witness said "Yes." Subsequently someone else called from the defendant and showed her a proof of the enlarged photo, with which witness was quite satisfied, and then he proceeded to speak about the frame, which, he said, would cost 16s. Witness said she was not accustomed to pay so much for a frame, and he said he would make it for 14s., and it would be of

English oak, English gold, and plate glass. She was induced to give the order on the faith of that representation; more so she wanted to get rid of the man. George William Earle, a photographer, said the frame in question was only common deal. It was exactly the same thing in stock, and he produced a specimen frame supplied by the defendant would cost 3s. 6d. It was of English gold, and the glass used was of the ordinary common type would not cost more than 4d. The outside value of the frame and glass complete would be 3s. 6d. His Honour said it was unwise on the part of people to encourage these men by giving orders. He was told this was somewhat of a test case for the protection of the public. He could hardly believe that there were many innocent people about who believed that a photograph could be presented to them free of charge, but it appeared that the plaintiff did believe it, and so he assumed that other people would do so. Plaintiff had made out her case. The idea in this case was to get an exorbitant price for the frame. Judgment was given for plaintiff for 17s. 6d. (14s. for the frame and 3s. 6d. carriage) and costs.

**RECEIVING ORDER.**—A receiving order has been made against Ralph Winter Thomas (trading as the Western Camera Company) residing at 28, Burghley Road, St. Andrew's Park, Bristol, carrying on business at 69, Stokes Croft, Bristol, as a photographic dealer.

**DIVIDEND.**—A dividend is to be paid in the bankruptcy of Percy John Swain, photographer, of 37, Earlam Road, Norwich, carrying on business under the style of John Percy at 2A, Place, Norwich. Claims should be sent by May 30 to the Receiver, 8, King Street, Norwich.

## News and Notes.

**PHOTOGRAPHY AT THE ROYAL INSTITUTION.**—The syllabus of Alexander Scott's lectures to be given on May 28 and June 4 at the theatre of the Royal Institution, Albemarle Street, is as follows:

May 21.—The chemical and physical actions of light on elements and compounds—Application of these actions to the measurement of the quantity, the quality, and the intensity of light—The spectrum and its chemically active rays—Definition of rays—Effects produced by different colours—Early attempts to produce chemical changes so as to reproduce pictures—Experiments of Wedgwood, Herschel—The photographic processes of Nicéphore Niépce, Daguerre, and Fox Talbot—The chemistry of the salts of iron, chromium, etc., with especial reference to the photographic processes of the present day.

May 28.—The Daguerreotype, the wet and dry collodion, compared with the gelatino-bromide plate—Negatives and positives—The nature of the latent image—Development of the latent image—Sensitising agents—Solarisation and reversal of the image—The image—Intensification and reduction—Theory and practice of silver, platinum, carbon, and gum-bichromate processes for producing positive pictures.

June 4.—The action of dyes on a gelatino-bromide plate and iso-chromatic plates—The rendering of various colours in tone—Can coloured objects be represented in their true colours by purely photographic methods?—Processes of colour photography—Lippman, Sanger Shepherd, Lumière, and others—Production of pictures on the photographic plate by agencies other than light.

**THE LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.**—Ernest Human, the hon. sec., asks us to say that owing to the proprietorship at the Olde Napier Tavern, it has been found necessary for the comfort of the members to obtain new meeting rooms. The meetings will for this reason be held, on and after Tuesday, May 21, at "The Apple Tree and Mitre," 30, Cursitor Chancery Lane. The new rooms are only two minutes' walk from Chancery Lane tube station, and are easy of access from all parts of London. On Thursday, May 28, a demonstration of the new process is to be given by Mr. S. G. Yerbury, and visitors are offered welcome to this, as they are to any of the meetings of the Association.



## Correspondence.

Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

We do not undertake responsibility for the opinions expressed by our correspondents.

### SUNDAY LABOUR.

To the Editors.

Gentlemen,—I venture to write you on a subject which appeals much to a certain class of workers in photography, viz., the vast amount of Sunday labour. Leaving the subject alone from religious point of view, Sunday labour in any form, unless absolutely necessary, is a blot on our national civilisation, and ought to be rigidly suppressed by law. There is, I believe, a very old law against this violation of the Sabbath, making such an offence punishable by a fine, but I have never heard of a photographer being proceeded against. We managers and operators work long enough during the six days, usually from nine till eight, to deserve the Sabbath ourselves. Then, I ask, what are we paid for Sunday labour? Or do we get in return for having our Sunday broken into?—thus preventing us from seeking a change of scenery. We get the so-called half-day, which usually means closing at four or five instead of eight o'clock, and our Sunday duty may be anything from four to eight hours. As a broad-minded Englishman, I do not blame any man for making as much as he can by fair means. What I propose is: If a photographer feels it is necessary to open his studio on Sunday, he should be prepared to do the operating himself, and not employ an assistant of his hard-earned rest. If all photographers complied in each town and refused Sunday work, unless in an exceptional instance, Sunday patrons would soon find time to do their own best on their early-closing day, and no one would be the wiser. I wonder how many football enthusiasts there were who missed seeing the recent English Cup Final? I repeat, the law ought to step in and stop Sunday trading by a fine for the first three offences, and for the fourth, which I may call imprisonment without the option of a fine would be a penalty.

SIX DAYS.

### RETOUCHING MEDIUM.

To the Editors.

Gentlemen,—I have pleasure in introducing to readers of the "B.J." a somewhat original formula for retouching medium which dries very rapidly, with a smooth hard surface, giving an excellent finish to the pencil. As my business is connected largely with photography and varnishes, I have made several experiments, eventually arriving at the following:—

Pure American turpentine .....	1½ ozs.
Oil of spike .....	½ oz.
Male resin .....	1 oz.
Raw linseed oil .....	8 min.
Serebene .....	20 min.
Essence of pear .....	½ oz.

The two latter are used for their quick drying propensities. If the medium is too thick, it may be diluted with more turpentine. Only the smallest possible amount is required to be spread over the negative, and those parts to be retouched, and it is best applied with the finger.

Yours faithfully,  
A. T. HALL.

### PUTTY FOR GLAZING STUDIOS.

To the Editors.

Gentlemen,—I am sure "Nero" will find what he inquires about in your week's issue of the "B.J.," a putty that does not dry hard, and is written by W. Carson and Sons, Grove Works, Battersea.—Yours faithfully,  
JOHN TERRAS.

To the Editors.

Gentlemen,—I notice in to-day's "B.J." a query as to "Putty for glazing Studios." This probably refers to a letter of mine on the subject, in which I told you that I had had my greenhouse reglazed by W. Carson's Plastine. I may tell you that my greenhouse is still perfectly sound.—Yours faithfully,  
J. E. GUBBINS.

## Answers to Correspondents.

- \* All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.
- \* Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.
- \* Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., 24, Wellington Street, Strand, London, W.C.
- \* For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.

### PHOTOGRAPHS REGISTERED:—

- A. Ridley, High Street, Tenterden, Kent. Photograph of the National Sanatorium, Benenden, Kent.
- C. Spence, The Studio, Station Road, Dunbar. Photograph of a Ship Tossed on the Rocks, called "After the Storm near Dunbar."
- E. McGeachie, Studio, Pier Road, Dunoon, N.B. Photograph. Dunoon Grammar School Continuation Class, 1908. "Faust."
- W. H. Hutchings, Vine Villa, Hepburn Road, Stokes Croft, Bristol. Photograph of Fred Archer, John Porter, and Racehorse, Ormonde.
- E. Clapham, 30, Byrom Street, Todmorden. Photograph of John Wm. Crabtree, Captain of First Team, Todmorden Cricket Club.
- J. MacLachlan, 23, Stewarton Street, Wishaw. Photograph of the Rev. W. Stott.

**COPYRIGHT.**—With reference to a question of ours re copyright you were good enough to answer in the issue of February 21, we beg to mention that our firm was not paid in the first instance for taking the photograph. We at a subsequent date, however, supplied the gentleman who granted permission with several copies (to order), and for which he paid at the same rate as the public—i.e., any other customer. The present owner's agent annoys us by questioning our right, and asserting that the permission of thirty years ago could only be valid during the lifetime of the owner who granted it. We certainly object to surrender our rights, and are anxious to be sure of our ground. Your reply will be esteemed.—  
MCISLE.

The copyright, being yours to begin with, cannot become somebody else's through the death of the sitter. There is nothing in the Copyright Act to suggest such a thing. You had better point out to the agent that copyright lasts for the life of the "author," and seven years after his death, the author in this case being the one who photographed the deceased gentleman.

**FABRIC.**—The most practical process is platinum or kallitype, as directed in the current "Almanac." The chief point is the thorough sizing of the fabric, preferably with arrowroot. We advise you to get Duchochois' book, "Photographic Reproduction Processes," published by Hampton and Co., 12, Cursitor Street, E.C. (2s. 6d.).

**THE COPYRIGHT UNION.**—Kindly inform us through your valued journal if the Photographic Copyright Union still exists, as we have not heard of it for some time.—  
LLEWYLLA.

The Union is still in existence. Address the Secretary (Mr. H. Gower), at 22 and 23, Soho Square, London, W.

**WALES.**—It varies within wide limits. You cannot obtain a better idea than from the small advertisements in each issue of the "B.J."

**LENS FOR GROUP.**—I wish to photograph a group, about 800 in number, in a large hall (daylight). Could you kindly inform me which lens would be the best for taking the above, say, on a 15 by 12 plate, to cover well, without stopping down to any great extent?—  
OSBORNE.

We do not see that you can do better than employ a R.R., or a lens of the anastigmat type of about twenty inches focus. If the

hall is not long enough to permit of a lens of so long a focus being used, you will have to get a shorter one. Then an anastigmat will be the best, as it has great covering power in proportion to its focal length.

**COPYRIGHT.**—At an agricultural exhibition just held in this district we were granted the sole right of photographing in the showyard by paying a royalty. The day previous to the opening another firm came into the yard and took a photograph of a stand to the order of the manager of same. Not being acquainted with the law on this matter, we should be glad to know if we can do anything in the matter, either with the photographer or the secretary. Also, can we claim anything from the journals publishing photographs taken by their representatives with hand-cameras? We should be glad of a reply.—*SUSSEX.*

So far as we understand, the photograph was not taken to the order of any of the show authorities, but to that of one of the exhibitors. If you were there at the time the picture was taken, you should have prevented it, by appealing to those with whom you arranged for the sole right. We do not see that you can do anything in the matter now, beyond trying to get the show people to throw off some of the fee you are to pay—for any damage you may have sustained. You can do nothing with regard to the photographer, or the journals that may make use of the photographs.

**CAMPO.**—According to your statement, the people have slightly departed from the agreement, but we do not see that you have sustained any injury thereby, or such as you could recover damages for, particularly as there is no copyright in the pictures.

**FOG CAUSED BY DARK SLIDE.**—I am forwarding for your inspection a plate which, previous to development, had been left in a dark slide for about a fortnight. I should be much obliged if you could give any explanation of the general fog, and suggest any remedies. The plate was probably in a fresh condition. The slide was loaded, and the plate developed (pyro-soda Ilford formula) in complete darkness. The slide, which, as far as I can determine, is completely light-tight, is of metal, and has an aluminium shutter. Any suggestions you can make will be much appreciated.—*ERN. A. LYNN.*

A fortnight in a dark slide will fog most plates. Probably in your case the aluminium shutter helped in the fogging action and caused the spots.

**PZZLED.**—You can obtain elementary general text-books on photography at any booksellers, or write to Hazell, Watson, and Viney, or to Dawbarn and Ward, for a list of the books they publish.

**IGNITING FLASH POWDER.**—We should esteem it a favour if you would kindly inform us the best and simplest means of igniting flash powder by electricity, either from the direct current or from an accumulator. Full particulars will oblige.—*FLASHER.*

Put a short piece of very fine platinum wire in the circuit and bury the wire in the flash powder. A very small battery will be sufficient. See page 377 in our issue of May 15.

**COPYRIGHT QUERIES.**—A man asked me how much I would take a dozen views and do a finished silver print from each for, him to take the risk how many were good, so that he could copyright them if he wanted to or not, and also that I should not use the negative for anything else. I told him by word of mouth only 15s. per dozen. Now I have done the work and supplied the prints and he has paid me. Now, the thing I want to know is: 1. Who holds possession of the negatives if he copyrights the prints? 2. Who holds possession of negatives if he does not copyright the prints? 3. Can he demand the negatives in any way to give work to anybody else to do from them, or do I keep them myself? 4. If he did not copyright them should I be allowed to use them in any way or sell them?—*GEORGE CHAPMAN.*

In reply, 1. You do; the negatives are the photographer's property unless there is a special agreement that they are to be given up. 2. Whether the pictures are copyrighted or not makes no difference. 3. He can, of course, "demand" them if he likes, but he cannot enforce the demand. 4. Certainly not. You have

been paid for the work you have done, and there is at the end of the matter so far as you are concerned. You have no whatever to use the negatives for any purposes of your own, if the pictures are not made copyright.

**T. W. DIEBLE.**—If you agreed, when accepting the engagement, to work seven days a week the week ends on Sunday night. I absented yourself from work for two days, the pay for two days can be legally deducted. If you give notice to the notice should expire at the week end, namely, on the Sunday night. Practically, according to your statement, you did commence work till Monday morning, so that your week ends on the Sunday.

**LENS QUERIES.**—I shall be much obliged if you would kindly answer the enclosed queries in your next issue. I use a set of "Vademecum" lenses (card enclosed) but have some difficulty in regard to portrait subjects, and would ask for information on the following points: (1.) Do you advise a single lens for portrait work? (2.) If so, of what focal length when using a half camera for (a) head and shoulders, (b) three-quarter length, (c) full length, (d) groups; (3.) Would one lens do for all above? (4.) If a doublet should be used kindly say what combination.—*EDWARD R. PLOWMAN.*

1. A single lens may be used for portraiture, but, to obtain a sufficiently good definition for this class of work, it will require considerable stopping down, when it will be slow in action. 2. (a, b, c, d) One of about twelve or fourteen inches focus will give a pleasing perspective. 3. Yes, if the studio is long enough to enable the groups to be taken in it. If not one of shorter focal length must be employed. 4. Either the 75 and 65, or for groups 65 and 55.

**REDUCTION OF OVER-INTENSIFICATION.**—I recently over-intensified a negative by the bichromate method and should be greatly obliged if you could tell me the best method of correcting the fault. The actual formula used was:—

Potass bichromate .....	100 gr.
Water .....	10 oz.
Hydrochloric acid .....	50 mins.

and the redeveloper used was amidol.—*OPERATOR.*

Bleach again in:

Potash bichromate .....	10 gr.
Water .....	1 oz.
Hydrochloric acid .....	40 mins.

Let the bleaching solution act very thoroughly, and then soak in a 10 per cent. solution of potash metabisulphite until image nearly white. Then redevelop. You can use 5 per cent. hydrochloric or sulphuric acid in place of the metabisulphite if preferred. These acid solutions all act very slowly, and the process cannot be hurried.

**X. Y. Z.**—From what you say the prints are probably not permanent, and may go off in a month or two. We advise you to use the combined baths, as given in the "Almanac," p. 818. We are sorry that the answer to your query was crowded out of last week's issue.

**\*\* NOTICE TO ADVERTISERS.**—Blocks and copy are received for the approval of the Publishers, and advertisements are inserted absolutely without condition, expressed or implied, as to what appears in the text portion of the paper.

## The British Journal of Photography

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## SUMMARY.

Exhibition of the Society of Colour Photographers opens on Friday next at the house of the "British Journal." This exhibition will be open daily from 10 a.m. to 8 p.m. (Saturdays 10 to 5), charge of sixpence admission will be made.

D. J. Howell, in the concluding portion of his article on "As a field for photographers," discusses the qualifications which should be possessed by a photographer going to that country and gives some timely advice on living and clothing and the value of an outfit. (P. 411.)

Watkins has placed on the market a ready-made single-plate developer, together with data which permit the user to alter the peculiarities of commercial plates and the temperature developer when working by time. (P. 413.)

Draw attention in an editorial to the practical arguments for and against the time system of development. (P. 410.)

Lumière and Seyewetz, as the result of experiments on the use of dry plates with a mixture of ammonium chloride and hyposulphite, have come to the conclusion that though fixing is made more quickly, there is greater danger of unstable combinations being formed. (P. 417.)

American contemporary, in an article intended for photographers, draws attention to the profitable use to be made of printed postcards by photographers. (P. 419.)

German experimenters have recorded the results of subjecting plates to the action of potassium salts. (P. 420.)

Give the results of recent experiments by Drs. Stenger and others on the colour-sensitising of collodion emulsion. (P. 418.)

Mainly demonstrated his modified method of ozobrome at the meeting on Tuesday evening last. (P. 425.)

First of three lectures on the chemistry of photography was given at the Royal Institution on Thursday of last week by Dr. J. H. Scott. (P. 421.)

Among the patents of the week are an automatic folding camera, a reflex camera, and a collapsible lens-hood. (P. 422.)

## EX CATHEDRA.

### The Colour Photography Exhibition.

On Monday next, June 1, the exhibition of the Society of Colour Photographers will open at the offices of "The British Journal of Photography," and will remain open until Saturday, June 27. The exhibition, it will be found, demonstrates the continued progress being made in photographic methods of three-colour printing. Of particular interest are the prints by the pinatype process from Autochrome originals sent by M. Didier. These are the first results on paper from Autochromes to be publicly exhibited. The Transparency section includes a great deal of new work by the Autochrome process. The fruit and flower studies, which formed much of the first work on Autochrome plates to be exhibited, have largely given place to results showing what can be done in landscape and portrait colour photography. Herr Dührkoop sends some examples of his Autochrome portraits, and there are also a number by M. Meys, one of the notable French workers. This year the Society have decided:—

1. To keep the exhibition open from 10 a.m. to 8 p.m. (Saturdays, 10 to 5).
2. To charge sixpence for admission.

These changes will thus allow many who cannot get to the exhibition during business hours to visit the collection which has been brought together.

\* \* \*

**The Trimming** In the "B.J." ALMANAC for 1908, of **Stereo-scopical Prints**, amongst the rules for mounting stereoscopic prints on page 951, we give the following:—"Trim so that the separation of corresponding margins is only just less than that between images of nearest objects." A correspondent has noted that many fail to observe this rule and yet get apparently good results, and he therefore asks what is the object of the rule. There are occasions on which we can not only neglect the rule with impunity, but even obtain a better effect by so doing. These occasions are, however, rare, and in the great majority of cases the rule should be observed. If neglected the effects may not be noticed by the observer who does not understand the object of the rule, but they will be strikingly obvious to any one who knows that they may exist, and therefore looks for them. The reason of the rule is very simple. The nearer two corresponding points are to each other the nearer does their combined image appear to be to the observer. The margins of the prints have to be combined as well as the objects represented on the prints themselves, therefore if the smallest separation is kept between the margins the whole of the subject will appear to be behind the mount. In other words, the effect will be that of looking at the object through a rectangular opening or window in the mount.

When we fail to observe the rule, then some part of the subject will appear to stand out in front of the mount. If this is a part of the subject that is more or less central, or, at any rate, not near the margins, the effect may be good. We have seen slides trimmed in this fashion that were very striking. One was a mounted stag's head trophy, and the other a full face portrait of a tiger. In these two cases the animal's head appeared to project through the opening in the mount, and an almost startlingly realistic effect was produced. Suppose, however, the subject to be an erect human figure. If the trimming causes this to apparently stand out in front of the mount, then where the figure adjoins the margin only a confused and unnatural effect is obtained. The effect is very easily demonstrated by trial, and once it is known to exist the effect of the whole slide is spoilt. Similarly confused effects can be produced at the sides of the picture, and, as a matter of fact, this fault can often be found in commercial stereoscopic slides. If the combined picture seen in the stereoscope has not quite clearly defined margins, we may be quite certain that the trimming is at fault. In cases where very widely separated lenses were used a different kind of confusion often exists at the margins, but this is a separate matter altogether, and the effect can easily be distinguished. With normal separation of the lenses clearly cut margins should always be apparent, and the rule we have given in the *ALMANAC* affords the surest means of securing them.

\* \* \*

#### Cheap Illustration.

A competition for the best photograph of portraits and other subjects is announced by the "Girl's Own Paper." Prizes amounting in all to twenty-seven guineas will be awarded, and in the case of a reproduction of a photograph to which no prize is awarded, it is stated that "remuneration in the ordinary course" will be sent. It would be desirable to have this phrase replaced by a more definite statement. The above wording and the announcement that no limit is set to the number of photographs that may be sent in by one competitor suggests that the "Girl's Own Paper" is seeking cheap illustrative matter for its pages and for those of the other publications of its proprietary, The Religious Tract Society. In fact, we read the positive condition that any photograph shall be reproduced, if so desired, in any publication issued by this religious body. The Religious Tract Society would certainly do well to make it clear that its competition is not of the "something for nothing" class by which other publishers have reaped a rich harvest from unsuspecting amateurs.

#### THE ADVANTAGES AND DISADVANTAGES OF TIME DEVELOPMENT.

NOTHING so damages the prospects and discounts the real merits of any new method or process as indiscreet and unjustified claims on its behalf. At the present moment there seems some danger of this happening with regard to time, or tank, development. The ordinary, matter-of-fact worker, having given unquestioning credence to extravagant statements as to the universal capabilities of this method of development, when he finds by bitter experience that these are not borne out in practice is inclined to regard the whole system as a delusion and a snare. It may not, therefore, be out of place or untimely to consider, without favour or prejudice, just what time development will do; and, on the other hand, what it will not and cannot do.

For a series of practically uniform exposures, such as a

number of snapshots taken successively under identical conditions, there is a distinct advantage in time development. The negatives or films will be clearer and free from fog than if exposed to the ruby light. There is a saving of time and trouble, the whole operation is more easily and automatically performed. The result, too, will be thoroughly satisfactory from a technical point of view, providing the exposures have been correct. An inexperienced amateur is more likely to secure negatives of even density and good printing quality by this method than by any which bring his own fallible judgment into play. To judge by the large number of tanks and developing machines now sold, the amateur has been perfectly aware of this fact, and is turning it to account.

If, however, the worker is tempted to adopt the time system under all circumstances, without allowance for varying factors or exceptional conditions, a disilluminated speedily takes place. The too common statement of its advocates that it will give the best possible result in all exposures, whether insufficient or excessive, and in all manner of subjects, cannot be substantiated, and is against the accumulated testimony of experience.

Most of us have learned to acknowledge the accuracy and the uniformly successful results which characterize the Watkins factorial system of development. There is a prevalent impression that this method and that of time development are, if not actually identical, at all events so much alike as not to be distinguished, and that they are founded on equally sound premises. This is not the case, as a little reflection will show. The factorial system makes allowance for differences of exposure, the negatives being developed for different times, as indicated by the time of appearance. The timing method makes no such allowance, but treats all exposures as alike. The two systems cannot be compared.

It is argued by the advocates of time development that the best possible result is obtained with under-exposed negatives, since over-developing and hardness are avoided and that nothing is lost, inasmuch as no means at present known will bring out the detail which is absent. The latter statement is certainly true; but can we ever be sure with the timing system, that the maximum of sharp detail has been brought out? This seems very unlikely if the plate is only developed for the time of a correctly exposed negative, considering the much greater slowness with which development proceeds in under-exposure. Then, again, an insufficiently developed under-exposed negative loses density in the fixing bath to a great extent than the normal, and this loss is greatest in the parts we most wish to preserve—the shadow details. Intensification of such an unduly thin negative will not supply the detail that has been deliberately thrown away. Then, as regards over-exposure, we are told that the time system will give practically the same result as the factorial recommended by Mr. Watkins, of increasing the time to about half as long again as that indicated by the time of appearance, and afterwards reducing with cyanide and hypo. This is not the case. Even supposing that the length of development by the first method was equivalent to that suggested by Mr. Watkins—and that no means follows—the omission of reduction will make a very great difference, since Farmer's reducer increases contrast, by attacking the shadows and half-tones to a greater extent than the lights. In other words, the time system flattens an over-exposed negative, while the factorial method improves vigour and contrast and tends to preserve truth of gradation.

It has been stated that by exposing several plates to a standard subject, giving each a correct and ide



ure, and developing these for slightly different times, I be easy, after fixing, to decide what is the correct of development for a properly exposed plate at a temperature. This is, of course, true. But the rates of time development go on to make the curious indication that correct exposure is absolutely essential, that information derived from incorrectly exposed is sure to be misleading. Precisely so! But does is undermine the whole argument that all exposures, t or incorrect, may safely be developed for an al time? If an incorrectly exposed plate is no t to the time of development of a correctly exposed t must follow that a correctly exposed plate is an y bad guide to the time required for developing an et exposure.

uncertainty does not end there. Even when we are n of the constant composition of the developer and of tant temperature, neither of which are so easy of ment as might be thought, we are assured by the manufacturers that the time of development will in different batches of the same plates, and also ing to their age and conditions of storing. Fac- development automatically allows for all these differ- time development does not. An advocate of the

latter system makes the significant admission that although a perfectly printable series of negatives can be secured by the uniform development of varying exposures, it does not follow that they will all be suitable for the same printing process. They will, however, undoubtedly suit some printing process. The professional worker, at any rate, will much prefer to see what he is getting, and to print his negatives, as far as possible, according to his preconceived intentions.

It follows, from what has been said, that for a series of uniform exposures, correctly timed by meter, on the same batch of plates, time development, if not the ideal system, is at any rate labour saving and perfectly satisfactory. For all kinds of work done in quantities with practically identical exposures, for various scientific and experimental purposes, or for the manipulation of panchromatic plates, it is strongly to be recommended. But for dealing with a mixture of subjects, problematic exposures, those having marked contrasts of light and shade, or, in fact, the generality of professional purposes, portraiture, architectural work, press photography, etc., the time system of development can only lead to disappointment and inconvenience. Still more must this be said of pictorial work, where truth of tone and gradation are valued.

## CANADA AS A FIELD FOR PHOTOGRAPHERS.

### II.

#### British Columbia.

sh Columbia marks the western limit of Canada. It is tainous country of great extent, with many fertile which are very favourable for all agricultural pursuits, owing being perhaps the most interesting at present. e mineral wealth of the country that has attracted the attention, gold, silver, lead, iron, and coal being found ned in large quantities. At the coast the climate is d moist. Nearly every variety of climate can be found province, excepting, of course, that of a tropical or opical nature. There have been many labour troubles, present the influx of Japanese and Hindoos is causing rious concern, not only in the province, but in the Canada. Their presence makes it difficult for a white obtain employment in the callings which do not require n the fisheries, in the hotels and restaurants, the men have nearly all been driven out by this cheaper It is a country of wonderful resources—which are eveloped in spite of these difficulties. There are perhaps eople of United States origin than in any other province, ir business methods and requirements are more akin States than Eastern Canada. Vancouver, population and Victoria, the capital, 25,000, are the two largest

#### Canadian Railway Development.

ailways of Canada are a very important factor in its evelopment, and no account of the country, however n very well omit some mention of them. The Canadian Railway, or the "C.P.R.," as everyone in Canada calls nds from the Atlantic to the Pacific, and with its ranches makes a system of over 9,000 miles, the greatest under one management in the world. It is the one atinental road at present, but there are under con- two other systems—the National Trans-Continental and the Canadian Northern, the former being built Government and to be operated by the Grand Trunk Railway, which is closely identified with the present stem of the Grand Trunk. The latter has already in

operation many links of its proposed line across the continent. All of these railways are extending their branches into new territory. There are two Government-owned railways—the Intercolonial, running from Halifax to Montreal, owned and operated by the Dominion Government, and a short railway into the Cobalt mining region, owned and operated by the Government of the province of Ontario.

#### Photographers' Opportunities.

In all these western provinces there are, and will be, openings for photographers. Success will come to the man who grasps the conditions and understands the requirements of the people. The average grade of work—at least along the main line of the C.P.R.—is high; as good, if not better, than the average work in Toronto and Montreal. The plates, paper, mounts, are almost exclusively of Canadian (Eastern), or United States manufacture, the prevailing styles, if such a term can be applied to photographic work, are wholly American, and a man starting business without a knowledge of these special conditions would be seriously handicapped. It would be almost essential for a man intending to start business in any part of Canada to obtain a position in an established "gallery," as the photographic studios are called, learn the conditions, and at the same time be on the look-out for a desirable location by getting in touch with the travellers (travelling salesmen) of the stock houses, as the dealers in photographic materials are termed.

This advice will also apply to apparatus. A man can decide better when he is on the ground what lenses and cameras he will need than he can in anticipation, and when he is not wholly familiar with the conditions. Some of the equipment can be purchased for less money in Canada than it would cost to import from Britain, though most of the lenses used in Canada come from there. Good lenses can be purchased in England for considerably less, and are comparatively easily carried.

#### Qualifications for Berths in Canada.

There are openings for portrait operators, printers, and commercial photographers in Canada, but the men must know

their business, but not too well. Good men will have very little difficulty in getting placed. The general experience of Canadian photographers with British help has not been at all satisfactory, mainly because the greater number have been incompetent. They do not try to learn the methods of their employer because "that is not the way they did it in England," and when given a free hand in printing and toning often turn out a batch of prints that are not fit to go out. As one photographer said to the writer, a certain batch referred to "looked as if an amateur had been trying his hand at it."

Most photographers in Canada, however long they have been at the business, are always ready to learn of and adopt a better way of doing the work, but the new hand should become proficient in his employer's methods, and then, if he knows he can improve on it, he will surely be given a chance to demonstrate the fact.

Perhaps the typical Canadian photographer in business is too cock-sure, but if his new helper from over the sea is inclined that way he had better dissemble until he has "made good." The man who pays has perhaps some justification in wanting things done in the way he believes the best way. In regard to wages, in Central and Eastern Canada a printer will get from \$9.00 (36s.) to \$15.00 (60s.) per week. A man who can operate, retouch, print, and finish if occasion requires it, is paid from \$12.00 (48s.) to \$18.00 (72s.) per week; some high-class portrait operators get from \$15.00 (60s.) to \$25.00 (\$25).

#### Kinds of Work—and Prices.

In the better class of portrait work collodion paper with a "carbon" finish (Aristo-platino) is almost wholly used. It is toned with gold and platinum. However, the use of some superior grades of gaslight paper is increasing. Cheap work and commercial work is largely finished in a gelatine printing-out paper, though gaslight paper is often employed. The highest quality work, however, is printed in black or sepia platinum. Carbon is rarely used.

Prices for finished portraits vary very greatly. In Ontario small sizes, less than c.d.v., will go as low as 50c. (2s.) per dozen, in the low-priced galleries, while sizes around the quarter-plate run from 75c. (3s.) up to \$2.50 (10s.), while cabinets range from \$1.00 (4s.) up to \$12.00 (48s.) per dozen, \$4.00, \$5.00, and \$6.00 (16s., 20s., and 24s.), however, being considered a good price for fairly good work, \$7.50 up to \$12.00 (30s. to 48s.) being obtained only by a few of the higher-class photographers who have made a reputation among the more fashionable element. For large work it is difficult to give a scale of prices.

In Manitoba and the West, the prices for average work are nearly double what they are in Ontario, while wages are only about 25 per cent. higher. The sparser population and greater cost of material will perhaps not give the photographer a greater profit.

#### Living and Clothing.

In regard to the cost of living in Canada, rents in cities are high in good localities, both for the student residence. In the smaller towns the rents are quite reasonable. Food costs about the same in Ontario as in England; perhaps less. Clothing, nearly twice as much. The higher wages in the West represents pretty accurately an increased cost of living. It is perhaps desirable for any coming to Canada with the intention of settling in the West to bring a good supply of clothing. In the case of men it is not much danger of being out of style for some time, but this cannot be said for women's clothing. The average Canadian dresses well—better than the same class in England. A woman might soon find what she considered attractive in England become very ordinary or peculiar when contrasted with the clothing of her new acquaintances.

Almost anything can be got in Canada in the way of clothing with very little trouble; the advantage one would have in getting here, of knowing what is suitable and what is fashionable, will more than offset the increased cost.

In regard to taking up land, and growing grain, cattle, or fruit farming, men from the older provinces, from Britain or other parts of Europe, have been successful, although without experience, or at least with very little getting to the Western country. This can be done again by those of considerable adaptability, with determination and hard work. Some capital is essential. The free land is becoming more inaccessible, railways and land companies having obtained great areas. They are selling these at reasonable rates. Full information about land, and the facilities, can be obtained from the offices of the Canadian Government or the Canadian Pacific Railway in London.

The marvellous resources of the country are being vigorously developed, but though substantial progress has been made, it can still be said that this has really only begun. The financial stringency of last year checked it very slightly; the prosperity of the country is real and sound, perhaps more so now than before tight money induced greater caution and care. The outlook for the future is full of the greatest promise.

Those in older Canada are continually hearing of immigrants who have become prosperous in the West. These good news are taking increasing thousands there every year. It certainly seems the land for young men. Britons have made their mark in the world over; they are doing so in Canada, and why not in its land of promise, the North-West?

There does exist in Canada a certain amount of prejudice against British immigrants, particularly Englishmen, due to so many incompetent people sent out by the charitable (?) organisations. This will have to be rectified by those who come out. The man or woman who is not afraid to work, and forgets for a little while how everything is in England, will be cordially welcomed, and will find as warm hearts and kindly faces in his new country as any place in the world.

DAVID J. HOWE

#### CONVENTION LYRICS, No. 4.

The old monks of Villiers-la-Ville,  
Of all life's good things had their fill;  
They relished good jokes,  
And good wine, and good smokes,  
And *peut-être* are enjoying them still.

P.S.—(To the Editor).

"Re last week's B.J."—To a certain extent,  
Your charming young lady is wrong;  
G H E N T, Sir, should be pronounced *Ghent*,  
It's G A N D that's called *Gong*.

BOLT COURT LECTURES.—A course of four lecture-demonstrations on "The Chemistry and Physics of Colloids, their Relation to Graphic and Photo-mechanical Processes," will be given at the School of Photo-engraving, Bolt Court, on Thursday evening 7.30 p.m., from June 4 to 25, 1908, inclusive, by S. E. SHEPHERD, D.Sc. (Lond.), F.C.S. Admission is free to students of the School, to others the fee for the course is 2s. The syllabus is:—"General and Characteristics of Colloids," "Reversible and Irreversible Colloids," "Preparation and Analysis," "Jellification and Coagulation," "Methods of Investigation," "Ultramicroscopy," "Dyeing and its Relation to Colloidal Phenomena," "Absorption of Inks, Dyes, and Pigments," "Absorption and Solid Solution."



## THE WATKINS METHOD OF CORRECTION FOR TEMPERATURE IN TIME DEVELOPMENT.

development—as distinguished from factorial development—has been much talked about of late. As our readers know, it is only understood to be development for a fixed time, which is based on preliminary trials for a given plate, a given developer and given temperature. Change one of these three, and the time of development must be changed. “Factorial development,” on the other hand—i.e., the method of calculating the total time of development from the time required for the first appearance of the image, for one, two, or all three of these items being changed without affecting the practice of the method. Mr. Watkins, it is well known, has hitherto given his adherence chiefly to the “factorial” method, but he has now devised a commercial system by which it is said the “time” method becomes easier in practice than the factorial method—as easy, in fact, as timing an exposure by the stop meter. The system is the result of Mr. Watkins’s recent experiments in testing the rapidity of development of commercial plates. Its practice involves the use of—

the Watkins ready-made one-solution developer.  
the Watkins list of commercial plates classified with regard to time of development.

latter, as we mentioned last week, divides plates into seven classes according to their speed of development in the Watkins system. Thus two of the factors necessary to a system of development—time—plate and developer—are accounted for. The third factor, temperature, and this Mr. Watkins provides for by affixing to the list of developer a simple calculating scale, by which the time of development for any reasonable temperature can be found. The result should be to give universality to a method which is now based on the basis of quite special data. In other words, one of the Watkins developer and calculates—or, rather, has calculated—one—the time for which a plate of any make should be developed at any workable temperature to give a negative of a degree of contrast. Our supply of developer reaches us from the Watkins Meter Company just in time for us to give this introduction of the new introduction. As we point out in another article, we are not wedded to time development as a method. It is undoubtedly its advantages—for the less practised worker partly—and it equally has its limitations. These latter are, certainly, to a great extent, removed by Mr. Watkins’s new system.

Following are the complete instructions issued by the Watkins Co. for the use of their new developer, and the practice of the new system:—

Development needed in development can be exercised almost entirely by development, a short time tending to softness or least contrast while a longer time tends to vigour or greater contrast—in other words, hardness. If the developer is kept uniform (as it is in this system) the only influences which cause alterations in the right time to give a given amount of contrast, are plate and temperature.

### Plate.

Plates require five times the development of others to attain the same contrast in the negative, and these variations are indicated approximately in the speed card. In the present state of plate development, the development speed of a plate (a quality quite distinct from exposure speed) is apt to vary considerably with different plates; and the time indicated by the speed list must only be taken as a first trial, to be altered if found advisable. Plates are also liable to “go off” with keeping, and this change may result in a longer time. Some plates have not a coating capable of giving a full amount of contrast; and increased time of development will not in such a case increase contrast beyond a certain point. In the V.S. class are most liable to this peculiarity, which for the work may possibly be a convenience, not a defect.

### Temperature.

Up to now, most instructions have shirked this matter by giving the simple advice to “always develop at 65 deg.” With the Watkins system, a simple thermo indicator is provided on the bottle,

which shows the time variation for all temperatures; and development may be at the natural temperature of the dark room. This is based on Mr. Fergusson’s temperature formula. Development at 45 deg. is about three times as long as 75 deg.

It will be seen that the extreme variations for both plate and temperature combined can amount to as much as fifteen times, and this applies equally to stand or film development; and the want of some systematic method, as here given, is plain.

### Apparatus Required.

Developing and fixing dishes. An ounce measure (2 oz. for quarter-plate use, or 4 oz. for half-plate use). A dram measure (2 dram for quarter-plate use, or 4 dram for half-plate use). A thermometer—the common house or garden type—to hang in dark room is sufficient; but if buying one, get one capable of dipping in liquid. A cover (cardboard will do) for developing dish. A light in room capable of turning up and down. A Watkins dark room clock is not a necessity, but a great convenience, as its minute divisions are six times the size of those on all other dials of the same diameter. The dark room light is not necessary with a little practice at having appliances ready to hand to handle in the dark. A jug or bottle of water to be kept in the dark room beforehand, and not drawn from a tap of different temperature.

### Instructions.

First, agitate the bottle (so as to mix its flocculent deposit), by turning upside-down three times—this is better than violent shaking. For every ounce of developer wanted, measure one dram in the small measure; pour this into the larger measure, and fill up with water to the ounces required. Thus, for quarter-plate, take 1½ drams, and fill up to 1½ ounces with water; for half-plate, take 3 drams, and fill up to 3 ounces. The diluted developer will be clear in about a minute. Dilute only just before use; do not make up a diluted stock. Turn down light, put plate in dish, pour on the developer (tilt the dish), cover the dish, and turn up light; note the time, or start the clock at once.

Look out the development speed of the plate on the speed card, for the first trial development. The following is the time for 60 deg.:  
V.Q., 2½ min. Q., 3 min. M.Q., 4 min. M., 5½ min.  
M.S., 7 min. S., 9 min. V.S., 11½ min.

But the time for the present temperature is probably different. Take hold of the movable paper ring on the bottle (the thermo-indicator) with the finger and thumb on the discs, and revolve until the pointer 60 indicates the time suggested in the above table. Note the actual temperature of the room, and against that temperature on the scale the minutes to develop are indicated.

Example:—Q. plate; pointer to 3 minutes; temperature 54 deg.; result is 3½ minutes.

Develop for the indicated time, and if after fixing and printing, the print has insufficient contrast, take in future a longer time (say 3½) as the “60 time” for that plate. If the print has too much contrast, take a shorter time for the “60 deg. time” in future. Another method is to develop in any accustomed way, by inspection for the first trial, noting the time occupied, also the temperature. Set this temperature against the time on the thermo-indicator, and then note, for future use, the 60 deg. time against the pointer. After the first trial the pointer can always be set to the “60 deg. time,” found right; and any time, for any temperature, can be read off; as temperature will change from time to time. Take care to wipe the mouth of the bottle after pouring, as a drip of developer will destroy the calculating label and band.

### Variation for Printing Process.

If a negative has a contrast suited for P.O.P., a slightly longer time—say three of the temperature two-degree divisions on the scale—will be right for carbon printing. A shorter time than for P.O.P. will be best for enlarging, or gas-light printing—say three of the two-degree divisions on the temperature scale.

### Variation for Subject.

This is seldom needed, as a right standard time gives the amount of contrast seen by the eye, whether there is a large contrast in the

tones of the subject—as in a street scene—or a small contrast—as in a distant landscape. But if it is especially desired to subdue the contrasts seen in the subject, give a shorter time than the standard. If, on the other hand, it is desired to emphasise the contrasts as seen, give a longer time than the standard. Stereoscopic negatives should receive only  $\frac{2}{3}$  time; sky negatives about half-time; copying black and white,  $1\frac{1}{2}$  times.

#### Use of Bromide.

There is no bromide in the developer, and it should not be added except for known over-exposure, or to keep back fog, if the plate (or dark-room light) tends to it. Fortunately, the addition of bromide does not alter the time required for a given contrast. It practically lowers the speed of the plate, and holds back (for a time) the lowest tones and fog. The amount required depends upon the amount of fog or over-exposure to be counteracted, and varies, from 1.5 grain (2 minims 10 per cent. sol.) to the ounce, to 2 grains (20 minims 10 per cent. sol.) to the ounce. To make the "10 per cent. solution," dissolve 1 ounce potassium bromide in water and make up to 9 oz. 1 dram. Every 10 minims (or drops) of this equals 1 grain.

#### Factorial Development.

The developer is perfectly suited for this method, its factor being 15. It must be clearly understood that the thermo method and the factorial method are distinct ways of timing development. When timing by factor, neither the thermo scale nor the speed card classification is used. To develop by factor use a dark-room light. Pour on the developer, noting the time by watch or clock, and commencing to count seconds. Carefully watch the plate, and note the first trace of an image in the high-lights. This number of seconds is the "time of appearance," and fifteen times this is the total time of development, from the commencement. If the seconds appearance is divided by four, the result is the minutes to develop. For full details of the method consult the Watkins Manual. If bromide is added, the factor is less than 15. The factorial method may be used to ascertain the development time for the first trial of a plate, afterwards using the thermo scale for allowing for variations caused by temperature. When this is done, the temperature of the first trial must be noted and set against the time of development (if found correct) on the thermo scale, which is then at its correct setting for future use with the plate. If a note has to be made of this setting, note the time opposite the pointer 60.

#### Stand or Tank Development.

The thermo method is admirable for any of the numerous tanks and development machines now sold, whether for film or plate, and

the development speed on speed card can be used. Develop at natural temperature of the room (notwithstanding tank maker's instructions to the contrary), as the thermo scale will make allowance. Provide beforehand a large jug of water to attain temperature of the room. The quantity of developer required is large, it must be used diluted. This increases time, and the dilution is a little more than the dilution. The most convenient dilution is four times, and this multiplies the calculated time by  $4\frac{1}{2}$ . How many ounces the tank requires up to its filling mark; run out one dram of concentrated developer for every four ounces required. Pour this into the tank, and fill up with the water to the mark. Calculate the development on the scale, and give  $4\frac{1}{2}$  times this.

Example:—Kodak film S., is 9 minutes at 60 deg. But the temperature is 72 deg., and the time for standard dilution is 6 min.  $4\frac{1}{2}$  times this is 27 minutes, which is the time to develop for the standard dilution. In all tank development it is most important either the developer is moved over the surface of the plates two or three times during development, or that the plates are moved in the developer; otherwise development is uneven. Construction of the tank decides this. Either lift plates or flip out of developer and replace them at once, or turn the whole upside-down several times.

#### Fixing.

Dissolve 4 ounces of hypo in 20 ounces (a pint) of warm water. Soak the negative in this, in a dish, for twice as long as any appearance remains in the plate. Wash in running water for an hour and dry.

#### Development Papers and Autochrome Plates.

For these a little potassium bromide (say 5 minims of the 10 per cent. solution to the ounce of complete developer) should be used. It is considered best to use the developer double strength for gelatin papers—that is, 2 drams to the ounce.

With any developer the time should be varied for temperature. The Watkins developer is perfectly efficient for the first development, adding  $\frac{1}{2}$  grain bromide to the ounce, and gives the power of allowance for temperature. The 60 deg. time is 7 minutes. Lumière's formula or (practically the same) any amidol developer should be used for the second development; not a developer containing alkali in it. Plates should not be handled, but left in dish processes, and for each intermediate washing. If frilling the edge the next plate with solid paraffin wax melted in a tin dish, a spirit lamp, and standing  $\frac{1}{4}$  in. deep. When a Bee meter or Autochrome dial is used, we do not think there is any need of varying time to suit varying exposure.

## THE COLOUR-FILTER AND THE "ISOCROMATIC" PLATE IN ASTRONOMICAL PHOTOGRAPHY.

### II.

In a paper by Dr. Schlesinger in the "Astrophysical Journal" of 1904 (20, 123) dealing with photographic star-images for parallax determination, an illustration is shown of a loose cluster taken with the 40-in. telescope, on an isochromatic plate, *without* the interposition of a colour-screen. In this plate the enlargement is so slight—1.7 times—that the quality of the images cannot be shown. Besides, such an enlargement is in no wise comparable with that required in lunar or planetary work. A number of illustrations are therefore given (Figs. 4 and 5) of series of exposures made at the 40-in. telescope upon the same star, both with and without a colour-filter. The exposure times are 30 sec., 1 min. 30 sec., 4 min. 30 sec., and 13 min. 30 sec., and the enlargement is rigorously exact on each to eight diameters. The statement by Schlesinger that "careful comparison of stellar plates, taken with the screen and without, shows that there is little to choose between them, either as regards the minuteness of the images or their sharpness," cannot therefore be accepted. It should be said, however, that his comparisons were on negatives made by Ritchey with a colour-filter which transmitted a considerable amount of blue light, extending almost to  $\lambda 4500$ ; also, his statement applies particularly to faint stars, which in reality do present but little difference unless they be much enlarged.

During the period covered by the past fourteen years the author has given considerable time to the special study of absorption for various conditions, and in 1903-4 devoted much labour to critical requirements necessary in filters for astronomical photography. Use was made of the 12-in. and 40-in. telescope about 500 lunar and stellar negatives were made at various times throughout that period. These negatives were made under all possible (logical) variations of the colour-filter, both "liquid" and "solid," and of mean transmission of from  $\lambda 4200$  through many stars to  $\lambda 5500$ . Some of these filters also absorbed the red end of the spectrum. This large number of negatives contained some excellent choice images which were selected and the filters located in a laboratory notebook. Deductions from these results showed that with a range of 100 tenth-meters within the limits of  $\lambda 4700$  there was no certain improvement discernible on the delineation of detail when the exposures were at the minimum allowable normal development, although, as has been stated, *theoretically* they should increase in value as the filter approaches isochromatism.

Fig. 6 shows the transmission spectra of several of the filters used at this observatory, while Fig. 7 shows the diffraction



the images obtained with practically similar exposures by use of filters  $\lambda 4600$  and  $\lambda 4900$  respectively. Between these two there is noticeable a gradual increase in quality value of the images as they approach nearer to monochromatic conditions. The image in most general use here possesses a mean absorption of  $\lambda 4900$ . The justly famed lunar negative made by Ritchey the densest

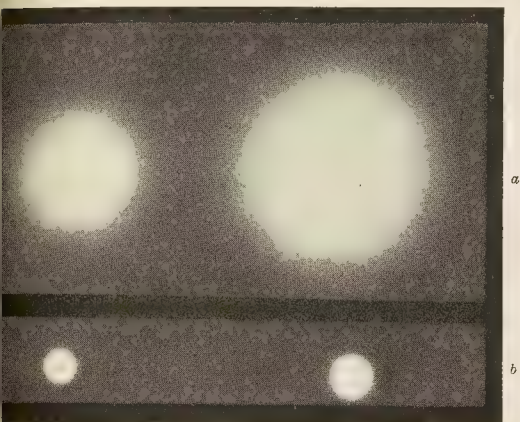


Fig. 4.

Images with the 40-in. telescope (a) without colour-filter and (b) with colour-filter. Times of exposure equal for each pair.

filter used by him transmitted blue light as short as  $\lambda 4500$ , the seeing was so good, and the exposures were so successfully made, that, from the comparatively small number made, he was enabled to select several that show a delicacy of detail which, though inferior to visual observations, has given them the premier place in photographic lunar delineation. Had the exposure been made it would have been at the expense of definition—the sum-

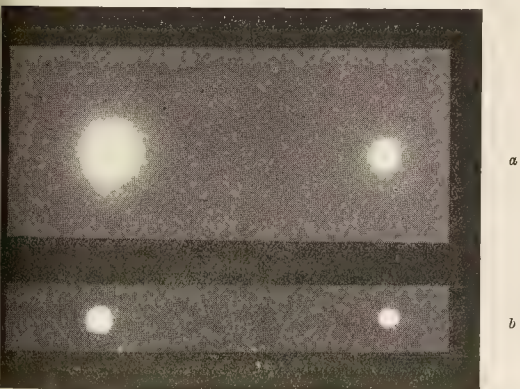


Fig. 5.

Images with the 40-in. telescope (a) without colour-filter and (b) with colour-filter. Times of exposure equal for each pair.

the effect of the action of the blue light and the atmospheric seeing. In a recent paper by Professor Lowell<sup>6</sup> there has been advanced the terms a "new means of sharpening celestial photographic images," and the paper is illustrated by diagrams, to show the effect of colour-sensitive plates, and of the Lowell objective respectively. The title is misleading, however, because fallacious, being based upon a misconception of the theory.

<sup>6</sup> "B.J." 1907, p. 977.

Briefly expressed, the "device" consists in sensitising an isochromatic plate for the red, and making use of a colour-filter with an absorption at  $\lambda 5000$  (made by the writer). His first illustration shown represents the colour curve of the Lowell 24-in. objective, but the curve shown by Lowell differs considerably from curves supplied me for the construction of his colour-filters, and differs

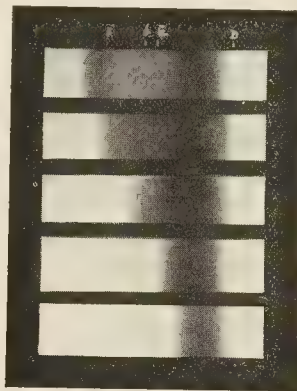


Fig. 6.

Spectral transmission of various colour-filters.

also from that published by Slipher in the "Astrophysical Journal."<sup>7</sup> This lack of accordance is shown in the illustration (Fig. 8), where it will be seen that there is an ordinate difference of from 5 to  $7\frac{1}{2}$  units at the Fraunhofer C and B lines. A close search fails to find anything published regarding a redetermination of the curve later than that already published by Slipher.

The second illustration is entitled "curves of sensitiveness of photographic plates" (Fig. 9a), but as such they are unfortunately quite wrong.

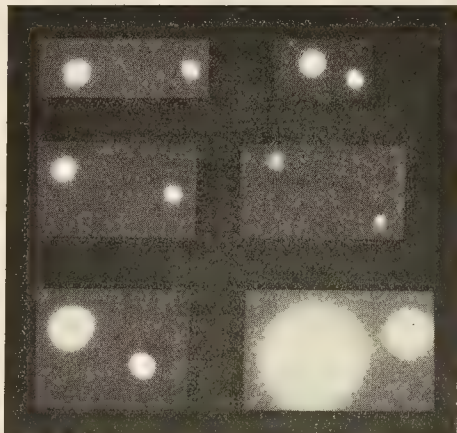


Fig. 7.

Difference in quality of star images with colour-filters absorbing at  $\lambda 4,600$  and  $\lambda 4,900$  respectively.

Taking that one plotted as the "Cramer instantaneous isochromatic" and comparing it with the actual sensitiveness curve plotted from careful measurements as shown by the dotted line (Fig. 9b), the result serves well to show the futility of plotting densities from visual estimates.

The two Lowell curves shown extending into the red beyond B,

<sup>7</sup> 20/9/1904.

are marked respectively "Seed 23 bathed with pinacyanol and pinaverdol," and "Seed 23 bathed with pinacyanol and pinachrome." The context of the paper informs us that a trial of these two plates thus treated resulted in failure, the cause for which it is suggested may lie in the developer used. Inability in the present writer to follow the reasoning which prompts this suggestion, leads, however,

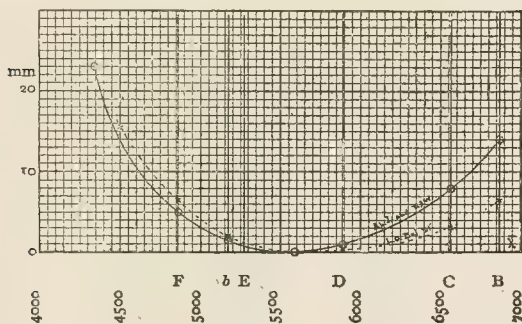


Fig. 8.

to discarding the attempt, when it is obvious that the failure follows inevitably from the slowness of the plate and the "flatness" of its sensitiveness curve between  $\lambda 5000$  and  $\lambda 6800$ . As failures, however, the value of their inclusion is doubtful, while as representing relative sensitiveness they are deficient. The "blue-sensi-

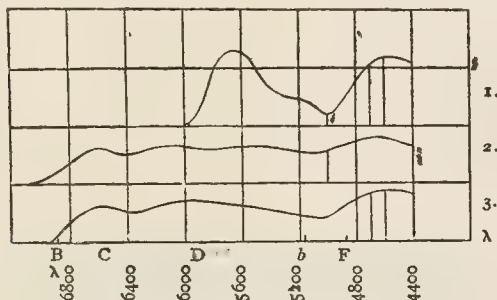


Fig. 9A.

1. Cramer instantaneous isochromatic.
2. Seed "23" pinacyanol and pinaverdol bathed.
3. Seed "23" pinacyanol and pinachrome bathed.

(Ordinate values were not indicated.)

tiveness" of a plate divided by the "yellow (or red) sensitiveness" is the method adopted by all photographic workers for expressing the chromatic value; and following this, measurement of these curves gives a value of about 1.2 or 1.3, while in reality the true value lies in the neighbourhood of 11.0 or 12.0.

In all probability a part of the difference is due to the fact that the Lowell curves are estimated from prismatic spectra—a most unre-

liable source, because the apparent sensitiveness is shifted toward red end by an amount dependent upon the refractive index number of prisms used. Every investigator in photography knows that the maximum sensitiveness lies at  $\lambda 4100$ , not at  $\lambda 4600$ , and in fast isochromatic plates of high quality the value of the yellow-green sensitiveness is far below that of the blue-sensitiveness, not in excess, as shown in the Lowell curves. What we are immediately concerned with, however, is the relative sensitiveness of isochromatic plate after bathing.

If it were possible to sensitise an isochromatic plate for the red and retain the relatively high maximum of sensitiveness in yellow-green at  $\lambda 5600$ , then, in reality, we should still occupy same position in regard to celestial photography as before; but although it would be possible to gain greater speed it would be at the expense of definition; for it stands without possible argument, and, as has been shown, that the greater the extent of object curve embraced, the less critically sharp the image; although

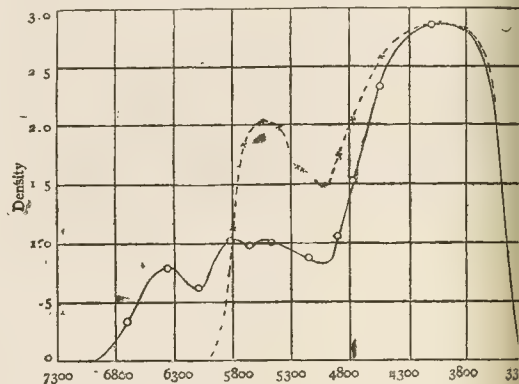


Fig. 9B.

consequent reduction in exposure time there would be less liable to unsharpness by waves of bad seeing. It is unfortunately, however, that it is impossible to retain the value of the original chromatic maximum.

Supplementary to a somewhat exhaustive investigation upon action of the isocyanin dyestuffs upon the photographic recently concluded by the author,<sup>8</sup> about a dozen isochromatic plates were bathed in a combined bath of pinacyanol and chrome, under different types of bath, which included water, dilute alcohol, plus ammonia, with subsequent washing in water, alcohol, dilute alcohol, and without washing. The strongest sensitising action with this plate was found to result from an ammoniacal bath followed by a slight water washing, and rapid drying. The plate was then developed in the constant temperature tank, fixed, dried, measured, and plotted. This is the curve shown by the continuous line in Fig. 9b.

ROBERT JAMES WALLACE

(To be continued.)

<sup>8</sup> "Astrophysical Journal," 26, 299, 1907 ("B.J.," January 31, p. 83, February 10, p. 101, and February 14, p. 119, 1908).

THE HOLIDAY "WHITAKER," which differs from most guide books in having both a summer and winter edition, certainly appears to justify its claim to be an illustrated guide to the health and pleasure resorts in the United Kingdom. The summer edition, just to hand, gives, for the small sum of 1s., much useful and instructive information respecting the various towns, villages, etc., both inland and on the coast, which offer special attractions, either in the way of health or pleasure to holiday makers and tourists, the alphabetical arrangement of names reducing the work of reference to a minimum. The visitor from the country to London also is not forgotten, one section of the book being devoted to "The London of 1908." The sections devoted to sports and recreations of various kinds are too numerous for us to mention here, but intending holiday makers will, we think, do well to obtain a copy of the book from the

publishers, Messrs. J. Whitaker and Sons, Ltd., 12, Warwick Lane, London, E.C.

THE HALL-EDWARDS FUND.—The Imperial Yeomanry School Committee have forwarded to Mr. Oliver Williams, secretary to the treasurer of the Imperial Yeomanry Hospitals, a cheque for towards the fund which is being raised for Mr. Hall-Edwards X-rays victim. This brings the total of the fund up to £1,956.

INFORMATION FOR HOLIDAY MAKERS.—The latest additions to series of booklets which the Health Resorts Development Association of 29, John Street, W.C., publish for the various Town Councils, with the districts of Malvern, Leamington, Weymouth, and Wood Spa, and copies may be obtained, post free, by applying to the respective Town Clerks.



# AMMONIUM THIOSULPHATE AS A FIXING-BATH.

Ammonium thiosulphate, the use of which was first advocated as a fixing agent in 1868 by John Spiller, has been recommended by writers since that date as a substitute for the common hypo solution of sodium thiosulphate, on account of the advantages which the ammonium salt possesses over the sodium compound. According to authorities the most important advantage consists in the greater rapidity of action. The greater solubility of the ammonium compound has been claimed also as advantageous in respect of removal of fixer by washing; spots or streaks on the films of plates after having also, it is claimed, no tendency to appear when ammonium salt is used.

For a long time this fixing agent was not used on account of the desiccating character of the crystallised salt, and attention was thus directed towards efforts to use the ammonium thiosulphate in admixture with other compounds, such as ammonium sulphate or ammonium chloride. Different mixtures have been recommended, but hitherto no one does not appear to have gained favour in comparison with plain hypo. The following experiments have, therefore, been made in order to ascertain the facts as to the action of a mixture of hypo and ammonium chloride, and to ascertain also whether this mixture can or cannot be used with advantage as a substitute for plain hypo.

The questions which we had in view when making our experiments were as follows:—

1. The proportion of hypo and ammonium chloride to secure most solution of silver bromide.

2. The solubility of silver bromide in this bath at different degrees of concentration in comparison with the plain hypo bath.

3. The stability of the double salts formed in the fixing bath in comparison with that of the double salts of silver with sodium thiosulphate.

4. The extent to which the bath can be used in comparison with plain hypo solution.

5. The removal of the excess of fixer by washing or other more convenient means.

6. The effect of increasing proportions (2 to 20 per cent.) of ammonium chloride added to a 15 per cent. solution of sodium thiosulphate, and the effect of fixation noticed in each case. It was found that fixation was most rapid when the ammonium chloride was present in the proportion of one-quarter the hypo—i.e., 3½ per cent. With this proportion of ammonium chloride took place in one-third the time required for plain hypo. The time necessary for fixation increases with the proportion of ammonium chloride, and when this latter reaches 8 to 10 per cent. the favourable action as regards reducing the time of fixing can be considered.\*

7. The effect of increasing the concentration of the hypo solution is raised from 15 to 40 per cent. the difference between the time of fixing with ammonium chloride and that without, rapidly disappears as a stronger solution of hypo is added. With a solution of 40 per cent. the time of fixing with and without ammonium chloride is the same.

8. A question may be asked whether the speed of fixing is due to the greater solubility of the silver bromide, or whether it is a simple case of rapid diffusion, or, again, whether it is the result of the solution penetrating more rapidly into the gelatine film. To these matters the solubility of the silver bromide in different solutions under examination was ascertained, and the following results were obtained:—

Strength of hypo solution,	Silver bromide dissolved in 100 ccs. hypo solution, gms.	Silver bromide dissolved in 100 ccs. hypo solution, containing also ammonium chloride to the extent of 1/3rd the weight of the hypo, gms.
10	3.64	4.91
15	4.37	6.04
25	8.11	9.34
40	11.30	10.90

These results confirm those which we have already given in

the most advantageous proportion of ammonium chloride is distinctly less than that corresponding to the formation of ammonium thiosulphate according to the reaction  $\text{Na}_2\text{S}_2\text{O}_3 + 2\text{NH}_4\text{Cl} = (\text{NH}_4)_2\text{S}_2\text{O}_3 + 2\text{NaCl}$ . This mixture will correspond to a solution of ammonium chloride to 2,000 ccs. of 15 per cent. hypo solution, but the time of fixing is the same with 13 grams as with 7 to 8 grams of ammonium chloride. It is probable that a mixture of ammonium thiosulphate and sodium thiosulphate in suitable proportions would fix silver bromide just as quickly as ammonium thiosulphate alone.

reference to the quickness of fixing in hypo solutions of various strengths containing ammonium chloride.

In order to study the permanency of the salts which are formed on treatment with a mixture of hypo and ammonium chloride we prepared these compounds by forming a saturated solution of silver bromide in a solution which contained 250 gms. hypo and 110 gms. ammonium chloride per litre; in other words, the proportions required by theory to form ammonium thiosulphate. This saturated solution was filtered and allowed to stand, and deposited, after some time, transparent crystals insoluble in water, which contained sulphurous acid, silver, and ammonia. This is a double salt, doubtless the double salt of sodium and silver,  $\text{Ag}_2\text{S}_2\text{O}_3 \cdot \text{Na}_2\text{S}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$ , corresponding to that which is formed by the action of ordinary hypo on silver bromide. This double salt is unstable, blackening between 50 and 60 deg. C., and forming sulphide of silver. The clear liquor, on addition to half its volume of alcohol, throws down a white deposit of thin shining plates, resembling mother-of-pearl. These, on being dried, become dark on exposure to the air. The compound contains silver, ammonia, and sulphurous acid. A similar compound can be obtained when a saturated solution of silver bromide in ordinary hypo is precipitated with alcohol. We have shown that the double salt formed under these conditions corresponds to the formula  $2\text{Na}_2\text{S}_2\text{O}_3 + \text{Ag}_2\text{S}_2\text{O}_3 + \text{H}_2\text{O}$ , and that it is sufficiently permanent in damp air to give no darkening in contrast with the compound just described, as formed with a mixture of hypo and ammonium chloride. These results appear to show that bromide of silver gelatine plates or papers, which are fixed in a mixture of hypo and ammonium chloride, more easily undergo changes than if a plain hypo solution is used, unless the double salts formed in the fixing bath are completely removed by washing.

We have made experiments to find whether the degree of exhaustion to which the bath can be pushed varies with the composition of the baths in question. In all our experiments we have used the same volume of a fixing bath and have added to it constantly increasing quantities of silver bromide prepared in the dark and well washed. A drop of each solution was spread on a strip of filter paper and exposed for several days to the combined action of light and moist air. In every case the maximum weight of silver bromide was found which could be dissolved in a bath of thiosulphate without perceptible brownening, and the results of experiments made in this way are given in the following table:—

Fixing bath. In 100 ccs.		Maximum weight of silver bromide which can be dissolved in 100 ccs. of the fixing-bath without subsequent darkening taking place.
Hypo, 5 gms.	.....	1 to 1.25 gms.
" 5 "	+ Ammonium chloride, 2 gms. ...	25 gms.
" 15 "	.....	3.25 to 3.60 gms.
" 15 "	+ Ammonium chloride, 5.5 gms. ....	75 to 1.0 "
" 45 "	.....	5.0 to 5.25 "
" 45 "	+ Ammonium chloride, 19.5 gms. ....	3.3 to 3.25 "

If the pure sodium thiosulphate be used to a point beyond the limit of exhaustion there results a weak yellowish colour, which slowly increases as the silver bromide accumulates in the solution, whilst in the case of the mixture of thiosulphate and ammonium chloride a darkening of considerable intensity results, indicating a decided decomposition of the double salt. We have, lastly, decided the point as to whether the double salt of ammonia and silver can be more rapidly removed by washing in running water than can that formed by the double salt of silver and sodium. For this purpose a dozen sheets of bromide paper, 7 in. by 5 in. in size, were fixed in a 15 per cent. solution of plain hypo, whilst another dozen sheets of the same paper were fixed in a similar solution containing, however, also 6.5 solution of ammonium chloride. Each of these series of sheets was washed in running water, the conditions being kept absolutely the same. Every quarter of an hour a sheet was removed from each batch, and tested with a drop of silver nitrate solution which gave a spot of silver sulphide of greater or less intensity,

\* Lumière and Seyewetz, "Bull. Fr. Phot. Soc.," 1907. "B.J.," Feb. 22, 1907, p. 138; Aug. 16, 1907, p. 614.

according to the quantity of hypo contained in the paper. After several hours' washing no detectable difference could be found, on the test being made, between sheets of the two series.

The following are the conclusions from the foregoing experiments:

(1) Addition of ammonium chloride to hypo solution hastens the fixing of silver bromide plates and papers only when the proportion of the solution to thiosulphate is less than 40 per cent.

(2) The proportion of ammonium chloride which exerts the maximum of action as regards speed is distinctly less than the proportion theoretically necessary to form ammonium thiosulphate. If this theoretical proportion be exceeded the speed of fixing falls off.

(3) The solubility of the silver bromide in hypo is increased by addition of ammonium chloride if the strength of the thiosulphate is

under 40 per cent. On the other hand, it is reduced if this strength is reached or exceeded.

(4) The compounds of the silver salts which are formed in a bath of hypo and ammonium chloride are distinctly more unstable than those formed with pure hypo, and the degree to which they can be used is also distinctly less in the case of the compound salts.

(5) In spite of the advantages which a mixture of hypo and ammonium chloride possesses as a rapid fixing agent, it is to be feared that this method of fixing should be discarded, on account of the instability of the double salts, and the rapid changes which take place in the prints unless the washing is thorough.

A. AND L. LUMIERE.  
A. SEYEWETZ.

## ORTHOCHROMATIC COLLODION EMULSION.

Drs. E. STENGER and H. Heller report in the "Zeitschrift für Reproduktionstechnik" on their efforts to make a collodion emulsion which should equal the colour sensitiveness of the best commercial gelatine plates and not show minima of sensitiveness. The paper is very lengthy, but the following are the important points.

As the mother emulsion the authors chose von Hübl's ammoniacal chloro-bromide formula. Although this has been already given in our pages, we repeat the same in order that the information may be complete.

A. Colloidine .....	28 gms.
Alcohol .....	466 ccs.
Ether .....	234 ccs.

When dissolved add B:—

B. Silver nitrate (powder) .....	50 gms.
Liq. ammonia (sp. gr. .91) .....	50 ccs.
(This solution must be quite clear.)	
Alcohol (95 per cent.) .....	100 ccs.

When the solution has cooled down, if any crystals are formed add Distilled water .....

3-10 ccs.

In the dark-room now add C:—

C. Ammonium bromide .....	27 gms.
Warm distilled water .....	40 ccs.
Alcohol .....	100 ccs.
Lithium chloride (10 per cent. solution) .....	10 ccs.

The lithium chloride solution is made by dissolving 10 gms. anhydrous lithium chloride in 10 ccs. water and adding 90 ccs. alcohol.

C solution should be placed in hot water to prevent separation of the salts. It should be added in about fifteen portions to the silver collodion, within fifteen minutes, then shaken vigorously for three minutes and allowed to stand for two to four hours. It is then added to the emulsion slowly and in small quantities.

Distilled water .....

300 ccs.

Shake well, and pour the whole into about 3 litres of water, well stirring all the time.

The emulsion should be allowed to settle, the supernatant liquid poured off, and the precipitate washed five or six times by decantation. The shreds of emulsion should then be placed on a linen filter, drained, pressed free from water, and as much water as possible removed by repeated moistening with alcohol and pressing out.

The emulsion, which should now be a fine sandy powder, should be dissolved in

Alcohol .....	400 ccs.
Ether .....	475 ccs.

After standing a few days this emulsion works very clean, and has a far better gradation than a wet plate.

The emulsion should be shaken up with the required quantity of dye just before use, and the coated plate washed for three minutes in water, and immediately exposed. The developer recommended is:

Rodinal .....	10 ccs.
Water .....	186 ccs.
Potass. brom. (10 per cent. solution) .....	4 ccs.

To test the plates the authors used a spectrograph, with a Thorp diffraction replica. The light source was a Nernst lamp, and the slit width 0.4 mm., the exposures from 1-4 minutes.

The peculiar sensitiveness of this emulsion extended from  $\lambda$  460, with a maximum at about 340 to 440.

### The Fluorescine Derivatives.

The following table gives the most important results:—

Dye.	Sensitiveness Band with an Exposure of		Maximum Density.	Character of	
	1 min.	4 min.		Density.	
1. Tetrabromofluorescine .....	510-540	480-560	520-540	fairly good	
2. Diodifluorescine .....	520-565	500-575	535-565	strong	very
3. Dichlorofluorescine .....	520-560	515-565	530-560	weak	
4. Tetraiodochlorofluorescine ..	540-580	510-600	560-580	vigorous	very
5. Tetrabromdichlorofluorescine*	520-565	535-560	535-560	very weak	
6. Tetrabromfluorescine-ethylester	490-560	490-570	535-555	vigorous	very

\* With 15 min. exposure.

1. Known as Eosine A. The dye was recrystallised from a mixture of alcohol and water. The uncrystallised showed weaker action. 1 gm. was dissolved in 150 ccs. absolute alcohol, and 25 parts added to 1,000 parts of water.

2 and 3.—Same strength used.

4. Rose Bengal. Same strength as 1.

5. Phloxine extra. 1 gm. dissolved in 200 ccs. 75 per cent. alcohol. 33.3 to 1,000 emulsion.

6. Primrose. 1 gm. in 375 ccs. 80 per cent. alcohol. 62.5 to 1,000 emulsion.

Fluorescine or uranine A, tribrom-mononitro fluorescine, tetrabrom-dinitro fluorescine showed no sensitising action. Less than that given above gave less colour-sensitiveness, except rose bengal and phloxine: with these half the quantity gave as good sensitiveness. Increase of the dye reduced the actual sensitiveness of the plate through screening action. Arranged in order of sensitising powers the dyes are 2, 6, 4, 1, 3, and 5.

### The Cyanines and Isocyanines.

The results obtained with these dyes are tabulated below:

Dye.	Sensitiveness Band with an Exposure of		Maximum Density.	Character of	
	1 min.	4 min.		Density.	
1. Cyanine .....	530-635	510-655	550-630	strong	foggy and
2. Diethylcyanine .....	565-610	540-615	585-610	fairly strong	and
3. Diamethylcholinethylester (a - $\gamma$ ) ..	550-720	530-720	580-600	very strong	cl
4. Pinaverdol .....	495-610	480-630	490-550	strong	cl
5. Ethyl-red .....	500-615	485-630	500-600	strong	fairly
6. Pinachrome .....	510-650	510-660	540-570	strong	fairly
7. Isocol .....	510-665	500-685	560-595	fairly vigorous	fairly
8. Pinacyanol .....	520-700	500-710	570-680	strong	fairly



1. 1 gm. dye in 500 absolute alcohol. 20 to 1,000 parts of emulsion.
2. Same dye strength as 1. 2.5 to 1,000 parts of emulsion.
3. A new dye made by H. Auerbach in the photo-chemical laboratory of the Technische Hochschule, Charlottenburg. Used as No. 1.
4. 1 gm. in 1,000 ccs. absolute alcohol. 40 to 1,000 parts of emulsion.
5. As No. 1.
6. 1 gm. in 1,000 ccs. 70 per cent. alcohol. 40 to 1,000 of emulsion.

1 gm. in 2,000 absolute alcohol. 40 to 1,000 emulsion.  
1 gm. in 1,000 absolute alcohol. 80 to 1,000 of emulsion.  
Bathing the plate in a 1 : 3,000 solution of dimethylchinolin ethylate and subsequent washing for three minutes gave the same results of sensitiveness, but the density was much less.

### Some Azo Dyes.

Various dyes of this class were used alone or in combination with others. The results are given in the following table:—

Dye.	Sensitiveness Band with an Exposure of		Maximum Density.	Character of	
	1 min.	4 min.		Density.	Plate.
Longo red.....	—	520-580	—	very faint	fairly clean
Glycin corinth .....	—	400-600	—	very faint	clean
Glycin red.....	460-650	460-630	520-625	strong	clean
Thiazol yellow .....	460-575	460-600	450-560	strong	clean
Dimethylchinolinethylate + ethyl red	590-700	875-720*	820-545	very dense	clean
Glycin red + Thi-zol yellow	—	360-680	565-590*†	very dense	clean
Glycin red + Isocol .....	360-685	360-685	625-640 655-665	dense	fairly clean

\* Strongest minimum 460-590.

† Strongest maximum.

1. Benzidin-disazo-bi-1-naphthylamin-4-sulphonic acid. 1 gm. dye in 500 ccs. absolute alcohol. 40 to 1,000 emulsion.

2.  $\alpha$ -naphthylglycin-1-naphthylamin-4-sulphonic acid, recrystallised from 95 per cent. alcohol. 1 gm. in 500 ccs., 95 per cent. alcohol. 40 to 1,000 emulsion.

3. Benzidine-disazo- $\alpha$ -naphthylglycin-1-naphthylamin-4-sulphonic acid. This is only a good sensitiser in aqueous solution, but satisfactory results are obtained with 1 gm. of dye in 300 ccs. water and 300 ccs. absolute alcohol, of which 50 ccs. should be added to 1,000 ccs. of emulsion.

4. This dye was thiazol yellow G (Bayer), a diazo-amido compound of dehydro-toluidine-sulphonic acid. 1 gm. in 600 ccs. 80 per cent. alcohol. 80 to 1,000 emulsion.

The idea in using combinations of the dyes was to fill up the familiar gap in the blue-green. This was done in the case of 6 and 7. The addition of fluoresceine or thiazol yellow to the cyanines and isocyanines gives much cleaner plates.

5. 10 ccs. dimethylchinolin ethylate, 1: 300 alcohol, + 10 ccs. ethyl red, 1: 900 alcohol, were added to 1,000 ccs. emulsion. Bathing in aqueous solution gave unsatisfactory results.

6. 50 ccs. glycin red, 1: 600 water, + 80 ccs. thiazol yellow, 1: 600 alcohol, were added to 1,000 ccs. emulsion. The sensitiveness is very strong and even, and increases from the violet to  $\lambda$  475-575, and then gradually becomes weaker.

7. 40 ccs. isocol, 1: 1,000, + 80 ccs. thiazol-yellow, 1: 600 were mixed with 1,000 ccs. emulsion.

This fills up the very striking gap in the blue-green that glycin red alone shows.

The addition of thiazol yellow to ethyl red gave no marked change, and the same occurred with pinacyanol and pinaverdol.

With pinachrome the minimum from  $\lambda$  150-510 was considerably weakened, and the plates were cleaner.

The glycin red+thiazol yellow plates gave much greater density than No. 7.

## MACHINE-PRINTED POSTCARDS.

[The following notes in our contemporary, "The American Printer," are worth perusal for their suggestions of the use made of picture postcards and their mention of the methods found most advisable for their attractive production by American printers. As the photographer is frequently the producer of the subject-matter of the card he should be the one to supply it to the user, though frequently he is so little alive to the possibilities of business that he lets the profit slip into other hands. As regards photo-mechanical cards in monochrome and colour, the photographer is well served by such firms as Messrs. Hood and Co., Ltd., of Middlesbrough, and the London Studio, St. Bride Street, E.C., and he may be advised to look around him for local business in coloured postcards.]

Not only have souvenir postcards been the means of spreading the idea of souvenir postcards with avidity as a most effective advertising medium for familiarising the public with the magnitude of the establishment externally and its beauty internally. He uses them all to illustrate his goods, as advertising "follow-up" cards, etc. Probably the greatest aid to the publishers of these cards is the use of engravings, which any job printer can handle easily and cheaply, and which a photo-engraver can make for him to print in one, three, or four colours from a photograph, drawing or other in one colour. While from some subjects very effective results are obtained by printing in two colours, the most attractive results are those produced by the use of plates for printing four colours. The most practical and economical method of producing these

plates to print in two or more colours is the so-called multi-colour process now in use by the larger engraving houses. In this method a half-tone "key-plate" is made, in a proportionate size, direct from the photograph or other suitable copy (preferably in one colour), and then the required additional plates, whether one, two, or three, as the case may be, are prepared by artists in such a way that when printed with the key-plate the desired picture results.

For ordinary commercial requirements which call for the maximum of effect at a minimum of cost, special attention is devoted to developing the effect of an attractive picture, rather than seeking to portray perfectly and accurately the details of the colouring, although where the work will bear the slight additional expense, the detail can be supplied and a result obtained which compares favourably with higher priced lithographs in six or eight colours.

Printers who have had sad experiences trying to get the perfect register required where all the colour plates are half-tones ("three-colour" and "quadri-colour" work), will find that in the multi-colour process a slight inaccuracy of register will not produce the chameleon or watered silk effect which a similar discrepancy when using all half-tone plates would produce, with a consequent loss of the picture.

"Comics" or humorous subjects are usually produced from special drawings prepared by artists in pen and ink or wash. The key-plate is made from these drawings in line or half-tone. In the cheaper classes of work, in which line key-plates are used, the colour plates are usually made to print flat colours, either solid or a tint.

The cost of the finished cards, like any other printing, depends upon the number of subjects printed at one time and the quantity of same. When a well-equipped printer wants to make up a number of plates in a large form, it is desirable to have the plates backed up with type metal, so that he can use patent blocks to facilitate the make-up and register.

When requesting an estimate for this class of work of an engraver it is best, if possible, to submit the "copies" and state the number of subjects there will be made at one time, the size of proposed plates, and any special instructions regarding alteration, improvement, or modification of copy. The cost of plates then will depend on the condition or kind of copy, the amount of detail in pictures, the grade or finish of work desired, the size of plates, and the number of plates ordered at one time.

It will cost less proportionately per set, if lots of eight subjects

or more are ordered at a time than if each were made separately. The most economical results follow the use of first-class photographic sharp in detail and strong in contrasts, or other suitable copy in colour from which a half-tone or line engraving could be reproduced direct in a proportionate size.

The engraver will deliver the plates, accompanied by a proof of each plate in the colour in which it is to be printed, and additional proofs showing the progressive results as each colour is printed off the other until the finished picture is produced.

In this class of work, as in any other requiring expert knowledge, it is always advisable to confer with the engraver concerning the best means to be used to obtain the required results, and the following up of this practice will do much to discourage the use of photography among printers.

H. A. GATCHEL.

## THE ACTION OF POTASSIUM SALTS ON THE PHOTOGRAPHIC PLATE.

THE view that lead possesses individual activity has obtained considerable support from the experiments of Campbell (1), to whom the greater part of our knowledge of the radio-activity of ordinary substances is due. Nevertheless, great doubt has recently been thrown upon the correctness of this assumption by the later experiments of Elster and Geitel (2), and McLennan (3). The fact that the natural activity of all kinds of lead is not the same is of special interest—in the case of some old samples of lead no special activity could be found—since it cannot be considered consistent with the assumption of an individual radio-activity of lead. The difficulty of coming to a decision in regard to the question has its chief cause in the extremely slight magnitude of the effects to be observed. Practically all observations on the radio-activity of ordinary metals have to be made under these difficult conditions. We have, therefore, thought it well to undertake the following experiments on the activity of potassium in continuation of the facts already published by Wood and Campbell (4), as Wood and Campbell have found ordinary potassium salts possess equal activity per gramme of potassium. As, however, all the potassium salts in commerce come probably from Stassfurt, Wood and Campbell examined, in addition to the commercial products, a sample of potassium sulphate prepared from wood ash, as well as a specimen of potassium feldspar. They found that in the case of the first preparation the activity corresponded with that of the commercial salts, whilst in the case of the feldspar the activity was about 17 per cent. too high. They were able, however, to attribute this discrepancy to a slight percentage of sodium, and confirm previous conclusions that the activity of potassium preparations depended on the potassium. The same assumption in the case of lead has led, as has already been mentioned, to a doubtful result. On this account it appeared advisable to test as many potassium preparations in regard to their activity as possible, and we therefore examined the following:—

- (1) Potash prepared from Molassine meal.
- (2) Potash sulphate prepared from No. 1.
- (3) Potash obtained from Wollsch wire. This preparation can hardly have been produced from Stassfurt.
- (4) Potash sulphate made from No. 3.
- (5) A crude 80 per cent. potash chloride from Stassfurt.
- (6) A pure potash chloride made by repeated crystallisation of No. 5.

<sup>1</sup> N. R. Campbell, "Jahrbuch der Radioaktiv.", 2, 434, 1905. "Proceed. Cambridge Phil. Soc.," 13, 282, 1906.

<sup>2</sup> J. Elster and H. Geitel, "Physik Zeitschr.," 7, 841, 1906; 8, 273, 1907; H. Geitel, "Physik Zeitschr.," 8, 776, 1907.

<sup>3</sup> J. C. McLennan, "Physik Zeitschr.," 8, 556, 1907; "Phil. Mag.," 14, 760, 1907.

<sup>4</sup> A. Wood and N. R. Campbell, "Über die Radioaktivität der Alkalimetalle." "Proceed. Cambridge Phil. Soc.," 14, 15, 1907. N. R. Campbell, "Über  $\beta$ -Strahlen des Kaliums." "Proceed. Cambridge Phil. Soc.," 14, 211, 1907.

RAJAR, LTD., inform us that for the convenience of their customers in London and suburbs they have opened a stockroom at 8A, Red Lion Square, W.C.

LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.—Visitors are offered a hearty welcome to the meeting of the London and Provincial on Thursday, June 4, when a paper entitled "An English

- (7) Crude potash sulphate from Stassfurt.
- (8) Commercial pure potash sulphate.
- (9) Commercial pure potash carbonate.

For purposes of trial the following other preparations were used:

- (a) A commercial pure sodium sulphate.
- (b) Lead oxide hydrate of Karlbau.
- (c) Ordinary metallic lead of unknown origin.

In examining the activity of the potassium salts we chose, as the simplest and safest method, the use of photographic plates according to the direction of Wood and Campbell. The plates used by us were those of Hauff, and were 4cm. square. They were wrapped in black paper so that the sensitive film was covered by only one thickness of paper. On this a sheet of brass, 1mm. thick, was laid, and in the middle of this a circular piece of about 1cm. diameter was cut out. On the hole thus made the preparation to be examined was placed, supporting it on a piece of six paper. In the case of the potassium carbonate the plates were placed in a desiccator filled with calcium chloride, in order to prevent absorption of water. At least three tests were made in the case of each material, the substance and the sensitive plates being exposed together in a dark-room for a period of about 120 days. At the end of this time the plates were developed for about a quarter of an hour with a powerful solution of the potassium salts, which gave a circular impression on the plate corresponding to the hole in the sheet of brass. The intensity of the darkening was the same throughout the differences between the plates treated with the same substance were as great as that between the plates on which the different preparations had acted. In the case of sodium sulphate no activity could be found on the plate, not even when treated with uranyl intensifier. In the case of lead hydrate no effect could be seen on development, but on intensification a weak indication of the circular aperture appeared. On the other hand, the metallic lead gave a deposit of practically the same intensity as the potassium salts. In order to give an approximate idea of the intensity of the radiation under examination it may be said that a plate exposed to the action of black oxide of uranium and otherwise treated as above described gave, after five hours, about the same degree of blackening as radiation of the potassium salts and the lead hydrate did in 120 days. This same crude method shows that the potassium salts possess about 1-1000th the density of the  $\beta$  radiation of uranium oxide, a comparison in agreement with the data of Wood and Campbell, who measured the radiation by electrical methods. The darkening caused by metallic lead is to be ascribed to a slight darkening of an individual radio activity of lead, as proved by results obtained with lead oxide.

M. LEVINE.  
R. RUETHEL.

"Journalist in America" is to be read, the author of which is Thomas Bedding, F.R.P.S., who for many years occupied the editorial chair of THE BRITISH JOURNAL OF PHOTOGRAPHY. The meeting will commence at 8 p.m., at the Association's meeting room at the Apple Tree and Mitre, 30, Cursitor Street, Chancery Lane, W.C.



## LECTURES ON PHOTOGRAPHY AT THE ROYAL INSTITUTION.

Optical associations, if nothing else, should certainly induce the members of the Royal Institution to include photography as an occasional subject in their programme of lectures, for was it not at the Royal Institution at the opening of the last century that Davy drew attention to the experiments of Wedgwood, and Sir Wm. Crookes, secretary of the Royal Institution, was an active photographic pioneer in the forties and fifties of the nineteenth century, and editor of photographic periodicals to boot. Therefore in arranging the delivery of a course of those lectures by Dr. Alexander Scott, director of the Davy-Faraday Research Laboratory, the Royal Institution is but maintaining the traditions of a hundred years ago. Dr. Scott delivered the first of his series of lectures on Thursday, May 21. The lecturer began with an historical survey of the work of the pioneers of photography, pointing out that the chemical action of light upon various compounds was known and studied for a long time before photography, properly so-called, became practical. For example, the blackening effect of light upon horn silver was a familiar thing to many early experimenters. Scheele experimented upon the action of light on silver salts, and went so far as to discover that the action was due mainly to the violet rays and not to the red. A notable experiment of Schulze in 1772 was the exposure through a glass of a mixture of chalk and silver nitrate, shaken up together in a bottle. A solution of silver nitrate was used as a secret ink in 1737, and T. Wedgwood, Ritter, and others produced permanent images by similar means upon paper and leather prepared with silver nitrate or silver chloride. The fixing of the images obtained was, however, the stumbling block to all those early experimenters. The first was actually the first to secure a permanent, or fixed, light image in a camera, and this was not produced upon a silver plate but upon bitumen of Judea. If a plate is coated with a thin film of bitumen and partially exposed, the light-struck portions become soluble, while the unexposed parts can readily be dissolved away. Dr. Scott used a solution of bitumen in toluene for coating the plates, and for fixing employed oil of turpentine. The fixing of an exposed image was demonstrated, and it was pointed out that the bitumen process is still in use for photo-mechanical work. A number of experiments to demonstrate the chemical action of light were conducted by the lecturer. The change of yellow phosphorus, and also phosphorus vapour, into the red insoluble form was shown by passing light through a tube, part of which had been exposed whilst the rest was protected by black paper. The deposition of sulphur from a clear solution of sulphur in carbon disulphide was also shown, and the known effect of light upon the conductivity of selenium was demonstrated. The effect of light in promoting the combination of hydrogen and chlorine when exposed to a mercury vapour lamp was also demonstrated. The effect of light was then demonstrated by the white light formed when chlorine peroxide was exposed to light, and the action of mercuric oxalate to the mercurous state was shown in optical lantern. The reduction of ferric chloride and of nitrous acid from a mixture of nitrous acid and alcohol were also practically demonstrated.

To illustrate the action of the ultra-violet rays, a sheet of bromide paper was developed while exposed to a spectrum. The fluorescence of quinine under the ultra-violet rays was shown, and cells of chlorophyll and of permanganate were used to illustrate the selective absorption of various materials.

A solution of nitric oxide and bisulphide of carbon light was shown as an example of a light exceptionally rich in actinic rays.

The lecture concluded with some experiments to show the reactions of ferric and ferrous solutions with ferri-, ferro-, and sulpho-cyanides, and it was pointed out that by taking advantage of these reactions it was possible to develop an image produced by the reducing action of light upon a ferric compound.

A NEW STUDIO IN JAMAICA has been opened by Mr. O. A. Isaacs in Montego Bay.

SOUTHERN SHOWS will be held earlier this year, the dates of the respective exhibitions being: Southampton, October 13-17; Brighton, October 22-26; Southsea, November 2-11.

## Exhibitions.

## THE SCOTTISH NATIONAL EXHIBITION.

Edinburgh is at present in the throes of a national exhibition, and, as it seems proper that such an exhibition should have the hall-mark of royal patronage, it was opened by H.R.H. Prince Arthur of Connaught. At Saughton over forty acres have been utilised for the purpose of the exhibition, which includes all the usual features, including an art section, in which a praiseworthy effort has been made to show the experiment of Scottish art, from Jamieson down to the present day. Included in this building is a small gallery, devoted to photographs, of which the Fine Art Catalogue introduction says: "Photography, the claim of which to rank as an art is so much discussed, has been allotted Room 6, in which a special committee has brought together an interesting collection." But their appreciation of photography evidently does not go so far as to allow it a place in the catalogue further than "Gallery VI.—Photographs," and although the exhibition had been open three weeks on the occasion of our visit no catalogue was available. Failing the publication of a catalogue it might be well to indicate somehow, by small label or otherwise, the title of the picture and the name of the artist. Such an exhibition, given the above-mentioned information, should prove a valuable advertisement to the profession, and it is noticeable that the well-known exhibits are mostly by professionals. What proportion of the unknown work is from their cameras it is impossible to estimate. Much may be learned from the large heads photographed direct by Mrs. Cameron, or from the magnificent collection of the work of D. O. Hill. An exhibit of D. O. Hill's work was shown at the First Scottish Salon at Perth, but it was far short of the present show. It is interesting to note that a painting by D. O. Hill appears in the art section. Wm. Crooke, Edinburgh, convener of the section, has a big exhibit of his well-known portraiture; J. Craig Annan, Glasgow, is also fully represented—"Stirling Castle," "Stoneyhurst College," "Cunninghame Graham," etc., and four Autochromes, the only ones on exhibition; Dan Dunlop, Motherwell, has his Scottish Salon success, "Edinburgh Castle, from Greyfriars," his R.P.S. picture, "The Old Professor," "Anemones," and others; John Moffat, Edinburgh, is represented by "The Dance" and some good portraiture; J. B. Johnston, Edinburgh, by "Beaching the Boat" and others; John Patrick, Edinburgh, by his great portrait of Carlyle, and James Patrick, Edinburgh, by "Evening" and others. J. M. Whitehead, Alva, has a grand exhibit of his quiet, peaceful landscapes, while Drummond Shiels, Edinburgh, is represented by portraiture; Dunn, Aberdeen, shows his charming sketch, "Ella"; while "February," "A Dutch Boat," and others indicate the class of work that G. L. A. Blair, Paisley, is doing. Auld, Edinburgh, shows good work, and the work of R. Dührkoop indicates what is being done elsewhere. The late G. W. Wilson, founder of the Wilsons, of Aberdeen, is represented by the first instantaneous photograph, dated 1856. Amongst others who might be mentioned include A. Keighley, E. T. Holding, Arch. Cochrane, J. McKissack, W. J. Croall, and John Hepburn. Many people will saunter through this exhibition who would never think of entering a photographic exhibition as such; their attention may be arrested and much good may result.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents have been made between May 11 to 16:—

CINEMATOGRAPHS.—No. 10,167. Improvements in or relating to biograph instruments and the like. Robert Macdonald, 3, Bentinck Terrace, Regent's Park, London.

DEVELOPING.—No. 10,196. Improvements in photographic developing tanks. Allyn Sherrick, Birkbeck Bank Chambers, Southampton Buildings, London.

REPRODUCTIONS.—No. 10,294. Improvements in and relating to photographic reproductions. The Rotary Photographic Co., Ltd., 55, Chancery Lane, London.

**CINEMATOGRAPHS.**—No. 10,396. Improvements relating to an electric apparatus for the synchronous working of a cinematograph with one or more gramophones. Dottor Pietro Pierini, 33, Cannon Street, London.

**PRINTING FRAMES.**—No. 10,421. Improvements in photographers' printing frames. Alfred White, 6, Lord Street, Liverpool.

**DEVELOPING.**—No. 10,437. Improvements in apparatus for developing photographic roll films. James Wyndham Meek, 55, Chancery Lane, London.

**FLASHLIGHT.**—No. 10,440. Apparatus for bringing about the instant ignition of a flashlight powder for photographic purposes. James Patrick O'Hea, 133, Rushey Green, Catford, London.

**CAMERAS.**—No. 10,469. Improvements in reflex cameras. The Thornton-Pickard Manufacturing Co., Ltd., Arthur Gray Pickard, and Thomas William Piercy, 6, Bank Street, Manchester.

**LENSES.**—No. 10,582. Diaphragms for photographic lenses. William Elliott Debenham, 55, Adelaide Road, London.

**FRAMES.**—No. 10,644. Improved photograph and scene frame. George Clarke, 2, Stockwell Green, Stockwell, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

**AUTOMATIC FOLDING CAMERAS.**—No. 18,934, 1907. This invention relates to folding cameras of the kind in which the lens-board or panel is automatically advanced upon the base-board when the latter, which is hinged to the camera back, is turned down for use, the object of the invention being to provide mechanism which, whilst automatically advancing the lens-board as above described, yet leaves it free to be advanced still further for focussing purposes without the employment of releasing screws, toothed wheels or the like.

According to the invention, links are provided attached at one end to the usual stays which connect the base-board with the camera back. The other end of each link actuates a short rack on the base-board by means of a slide. A slotted lever, rotatably attached to

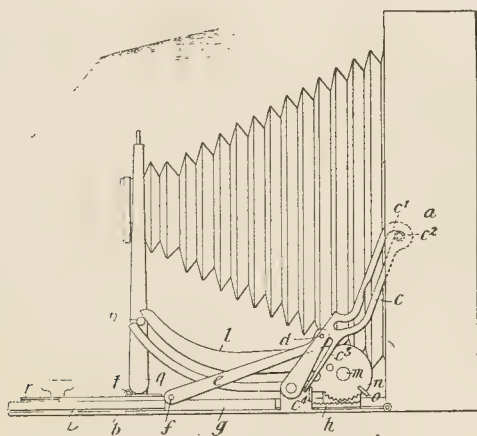


Fig. 1.

the base-board, gears with each rack, the slot in the lever engaging a pin on the lens-board. When opening the camera the racks are withdrawn by the stays through the medium of the links, this movement of the racks causing the slotted levers to turn upon their pivots and move out the lens-board. The guide-slot of each lever is open at one end so that on a further displacement of the lens-board the pins with which it is provided are not impeded in any way. In cameras of simple construction, however, and such as are without a double extension bellows, the guide-slots of the levers may be closed, as the lenses of such cameras require but very slight movement on account of their short focus.

In the annexed drawings, Fig. 1 is a side view of the

improved camera. Fig. 2 is a plan of one-half of the same. Fig. 3 is a side view illustrating a modification.

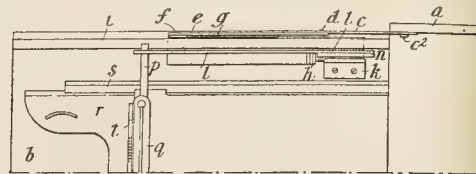


Fig. 2.

$a$  is the camera back connected in the usual way with the base-board  $b$  by means of stays  $c$ .  $e, e$  are the links rotatably attached to the stays  $c$  at  $d$ ; the other ends of the links  $e, e$ , rotate upon pins  $f, f$ , of the slides  $g$  carrying racks  $h$ , guided by means of guide-bars  $i$  on the base-board  $b$ .  $l, l$  are the slotted levers pivoted to brackets  $k, k$  on pins  $m, m$ , fitted on the base-board  $b$ , and provided with toothed segments or wheels  $n, n$ , gearing into racks  $h, h$ . Each toothed segment is provided with a pawl  $p$ , which will ensure the rack gearing into the lever with certain tooth when brought up to the latter.  $p, p$  are the pins on the lens-board, which pins run within the slots of the levers  $l$ . The lens-board is, as usual, rotatably connected with the slide running within the guide-bars  $s$  by means of the hinge  $t$ , and held in a position perpendicular to the base-board with the aid of springs with which the hinge  $t$  is fitted. The guide-bars  $s$  are provided with a catch or the like which automatically locks the lens-board. If required, the extension of the camera may be increased by means of a further guide. The links  $e, e$ , the slides  $g$ , the racks  $h$ , the levers  $l$ , the stays  $c$ , as well as the guides on either side of the camera are arranged symmetrically about the longitudinal axis of the camera.

When folding up the camera, the upper part of the stays  $c$   $h$  to be pressed in the direction of the arrow, Fig. 1, to release the catch or lock notches  $c^1$  therein from the pins  $c^2$  by which

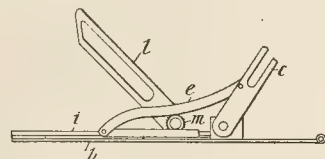


Fig. 5.

they are held in the open position by the springs  $c^3$  at the lower end, bearing against the projection  $c^4$ , and the base-board is then turned up, and thereby the camera closed. The movement of the stays  $c$  causes the links  $e$  to push the racks  $h$  forward, thus imparting a rotating movement to the toothed wheels  $n$ , and simultaneously to the slotted levers  $l$ . The pins  $p$  are thereby compelled to slide along the slots of the said levers and, together with the lens-board, are made to recede into the camera. The same movements take place when opening the camera, but in the reverse order. If the lens-board be moved by hand beyond the normal position, pins  $p$  will escape from the slots of the levers  $l$ , and they will again engage the slots when the lens-board is pushed back.

The arrangement for advancing the lens-board, shown in Fig. 5, differs from that previously described in that the pivots  $m$  of the levers  $l$  are placed further to the front so that the levers are swung from a backwardly inclined to a forwardly inclined position when opening or folding up the camera. Cranley Lancelot Perry, Cheapside, London, for Emil Wünsche, A. G., Reick, Dresden, Germany.

**FOLDING REFLEX CAMERA.**—No. 12,027, 1907. This invention relates to reflex cameras, and has for its object to provide a camera of the class, the body of which, when not required for use, can be collapsed or folded so as to occupy a small space.

To this end, according to my invention, the camera body is constructed as follows—that is to say, there is hinged or otherwise suitably connected, the top, bottom, and ends of the body together so that they can be folded upon one another, the sides also being



arranged so that they can be folded over the bottom. With this construction, when the camera is not required for use, it can be folded or collapsed so that the top, bottom and sides lie in the same plane.

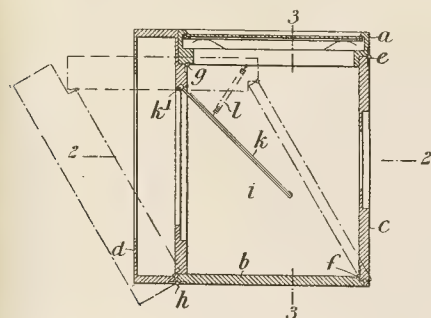


Fig. 1.

Fig. 1 is a longitudinal section of a camera made according to the invention.

Fig. 2 is a section on the line 2-2, Fig. 1.

Fig. 3 is a section on the line 3-3, Fig. 1.

Fig. 4 is a view similar to Fig. 1, but showing the camera body folded, and

Fig. 5 is a section on the line 5-5, Fig. 4.

*a* is the top of the camera, and *b* is the bottom thereof, *c* and *d* being the front and back ends respectively. The end *c* is hinged to the top *a* at *e*, and to the bottom *b* at *f*, whilst the end *d* is hinged to the top *a* at *g*, and to the bottom *b* at *h*, the hinges being so arranged that the body can be folded as shown in Fig. 1 in broken lines.

*i* is one of the sides, the said side being hinged at *i*<sup>1</sup> at its lower end to a narrow strip *i*<sup>2</sup>, itself hinged to the bottom *b* of the camera at *i*<sup>3</sup>. The width of the part *i*<sup>2</sup> is equal to the thickness of the

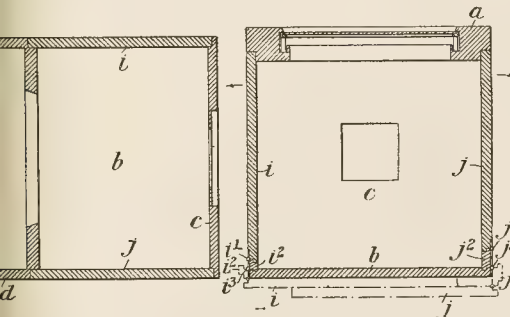


Fig. 2.

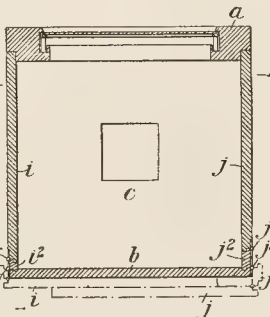


Fig. 3.

bottom *b*, so that the side *i* can be folded underneath the bottom *b* as shown in broken lines in Fig. 3. The other side *j* is hinged at its lower end to a strip *j*<sup>2</sup>, which is itself hinged to the bottom *b* at *j*<sup>3</sup>. The width of the part *j*<sup>2</sup> is equal to the combined thicknesses of the bottom *b* and the side *i*, so that the side *j* can be folded beneath the folded side *i*, as also shown in broken lines in Fig. 3. *k* is the focussing mirror which is hinged at *k*<sup>1</sup> to the end of the camera body, and is connected by a spring *l* to the top *a* of the said body. This mirror is controlled by mechanism not

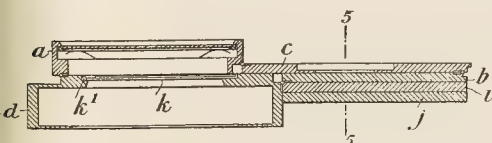


Fig. 4.

shown in the drawing, and when the camera is folded takes the position shown in Fig. 4.

As will be seen from the drawing the parts which are hinged together are rebated in such a manner that when the camera is extended in the manner shown in Figs. 1, 2, and 3, a light-tight body is obtained. When the camera is not required for use the side *i* is first folded beneath the bottom *b* and the side *j*, then folded beneath the folded side *i* as clearly shown in broken lines in Fig. 3. The ends *c* and *d* are then folded down in the manner indicated in broken lines in Fig. 1, so that the parts assume the position shown in Figs. 4 and 5.

In lieu of constructing the sides *i* and *j* as above described, they may be made of elastic material, or they may be in the form of

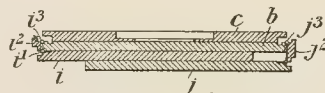


Fig. 5.

curtains adapted to be pulled down or rolled up when the camera is to be folded. It will also be understood that the body can be arranged so that it folds from back to front instead of from front to back, as illustrated in the drawing. Paul Ponge, 153, Croydon Road, Anerley, London.

**COLLAPSIBLE LENS HOODS.**—No. 20,706, 1907. This invention relates to means for excluding the unnecessary light which enters a photographic lens during exposure, and provides an adjustable and collapsible shield or hood by which only the actually useful light is admitted.

The shield consists of a collapsible or telescopic set of internally flanged rings, preferably conical, which when extended form a trumpet-shaped hood, a cone or cylinder. When collapsed the rings lie one within the other, occupying a very small space. The end ring, which is either the smallest or the largest, according to the extended shape required, is attached to a plate having a central opening corresponding with the aperture of the lens, and this plate is secured to the lens mount or the camera front so that when the shield is extended the light required for the formation of the image enters the lens unimpeded, but the unnecessary light is cut off by the hood or shield. To secure the hood in extended position the rings may be cut or notched to form spring clips, and their edges channelled so as to spring into engagement as the rings are drawn out. In the accompanying drawings

Fig. 1 is a section of the shield or hood extended;

Fig. 2 a corresponding view showing it collapsed.

Each conical ring *a* is made preferably from thin resilient sheet metal, and is strengthened by the flange *b* at one edge, these flanges also serving to prevent reflection from the internal surface. The ring is cut or notched at *c*, dividing it into a number of spring segments which allow the ring to be slightly expanded and form a spring clip. The rings are provided with the grooves or channels *d* and *e* at the flanged and spring edge respectively, and when the hood is

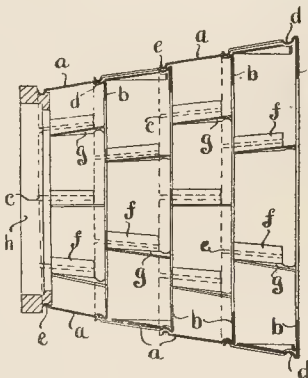


Fig. 1.

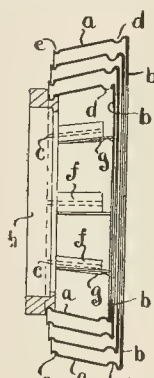


Fig. 2.

expanded, as shown in Fig. 1, the channelled spring edge of the larger cone engages in the other channelled edge of the cone inside,

It will be seen that when extended the flanges *c* reflect outwardly any light which may strike them, and prevent the reflection into the lens which would otherwise occur. To cover the cuts *c* and prevent light entering through them, I provide the small protecting plates *f* fixed at one side of each notch and extending over the other edge. These have the tapering flanges *g*, the inner edge of which is parallel to the axis of the hood, so that the flanges form guides for the ring immediately inside, and prevent looseness of the rings when collapsed.

One of the end rings, in the arrangement shown, the smallest ring *h* I prefer to make of solid metal, and this is attached to a plate having, as mentioned above, an opening corresponding with the aperture of the lens. This plate is screwed or otherwise fixed either to the mount of the lens or to the camera front and the conical rings, extended as shown in the drawings to form either a trumpet or cone, leave a clear cone of rays for the formation of the image, and cut off only such light as would lie outside the image. The means for securing the hood to the camera are not shown, as these may be varied, and are of any ordinary description. The hood may, of course, be wholly or only partially extended as required. It may also be of cylindrical form, but the conical is preferable. Owen Wheeler, "Strathmore," Prince's Road, Weybridge, Surrey, Captain, Reserve of Officers.

### New Trade Dames.

**PHOBULE.**—No. 302,105. Chemical substances used in manufactures, photography or philosophical research. Harrington Bros., Ltd., 4, Oliver's Yard, City Road, London, E.C., manufacturing chemists. April 9, 1908.

**VESTA.**—No. 300,958. A photographic camera. Arthur Lewis Adams, trading as Adams and Co., 24, Charing Cross Road, London, W.C., photographic apparatus manufacturer. March 3, 1908.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Twelve Plates per Minute—A Simple Test.

Referring to the recent method of "two-solution" development, in which the plate is placed first in the developer and next in the alkali, Mr. H. Brenchley (in "The Amateur Photographer and Photographic News" for May 26) writes: "Experiments made at a later date with a two-solution developer of unknown ingredients gave equally good results, so that it would appear the actual developing agents have little influence with the results, provided the solutions are of fair strength."

"The first plate was given thirty seconds in each solution, and the resulting negative is full of detail, but woefully thin, and of no value for printing purposes. Plate No. 2 was allowed one minute in each dish, and is a considerable advance upon the first, but slightly lacking in contrast. The third plate was given one and a half minutes in each solution, and resulted in a good negative of sufficient density and contrast for all-round work, and excellent for enlarging."

"The fourth and last plate was reserved for a little by-experiment. It was first placed in a dish of water for thirty seconds to soften the gelatine, and thus, maybe, allow the No. 1 solution to get to work more quickly. It was then given thirty seconds in each of the two solutions, making a total of one and a half minutes for the whole process, and the resulting negative is almost equal to No. 3 in quality. This seems to show that the preliminary water bath is an advantage, and that the three minutes required to produce a good negative may be considerably reduced."

### Hypo-Alum Toning of P.O.P.

I have had several years' experience with this bath (writes Mr. Harry Carrless, in "Photography and Focus," for May 26), and find that it is better made overnight or twenty-four hours before use, and boiled or distilled water should be employed. Printing should be carried until the shadows are bronzed slightly, toning being continued for rather more than thirty minutes, according to taste.

## New Books.

"The Red Book, 1908-9." Issued by the Affiliation of Photographers Societies.

Dated April, the present issue of the "Red Book" reached on May 25. Its chief contents is, as in previous years, a list of the societies affiliated with the Royal Photographic Society. The number in all 163, an increase of five on the number which appeared as affiliated in the 1907-8 "Red Book." Of the other matters which may be considered specially deserving of attention from honorary secretaries of societies are lists of lectures, prints, and lantern slides available for circulation and the rules approved by a number of judges at "open" exhibitions.

The "Red Book" serves as a permit to photograph in some fifty and twenty places, to which the hospital, town hall, and the churches of Guildford have been added within the past year.

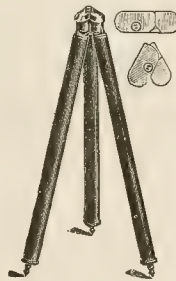
The usefulness of the list of "Places to Photograph" may be seriously questioned. Such a compilation is bound to be "scrappy." A hundred "Red Books" could not contain it were it even approximately complete, and we doubt if anyone would be in the least guided by it in choosing a holiday resort or making an excursion. This, however, is part of the Affiliation's ambitious, but unrealistic "Consular" scheme, under which members of affiliated societies are to apply to "consuls" in other societies when in want of information as to a place they propose to visit. In view of the fact that affiliated societies exist only in 163 places, such a scheme can never attain really useful proportions.

Tables of reference (euphemistically said to be "collated" from various sources) occupy the last portion of the "Red Book." They appear to be accurate, if not original.

## New Apparatus, &c.

**The "Pocka" Tripod.** Sold by Messrs. John J. Griffin and Sons Limited, Kingsway, London, W.C.

A folding metal tripod which packs quite flat for carrying will doubt be appreciated by numbers of tourist photographers, who have learnt, we hope, the very great service which a tripod can as an adjunct to the use of a hand-camera. In the instrument which Messrs. Griffin have sent for our inspection the tripod opens out



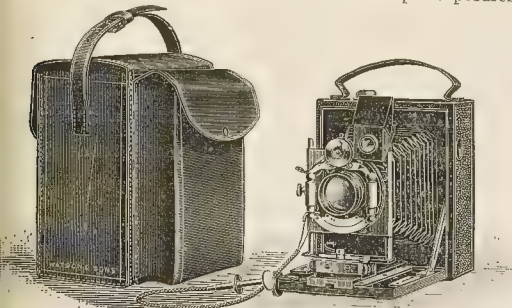
a total length of four feet and closes to less than a foot. Despite seven joints it provides a rigid support for a hand-camera of moderate size, and is instantly closed by pressing two buttons in the two upper sheaths of the legs, when the whole apparatus can be reduced to small dimensions of 12 inches by pressure of the points upon ground. We should add that the feet are reversible, one end having a point, the other a rubber shoe for use on polished floors, etc. The price of the tripod is 15s.

**The "Empire" Folding Hand Camera.** Made by W. Watson & Sons, Limited, 315, High Holborn, London, W.C.

In this camera Messrs. Watson have provided the photographer with a portable camera of the hand-stand type of considerably more substantial construction than is usually found in cameras of this class. Moreover, the woodwork of the "Empire" camera is made of well-seasoned materials, with a view to enabling the instrument to withstand severe conditions of climate. The camera in the quarter



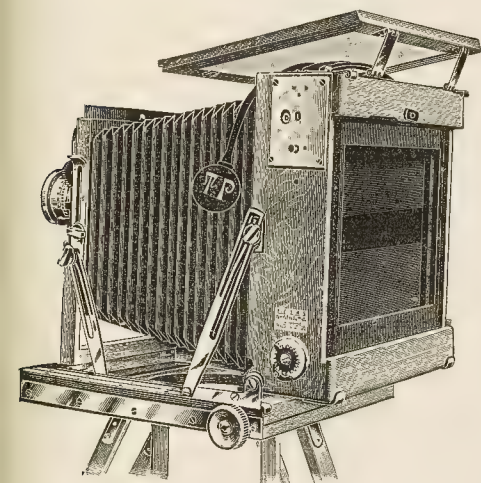
size has an extension from the plate to the diaphragm of the lens of ten inches, and possesses great rise of front and a cross movement of over 1½ inches. It is built the upright way of the plate, being turned on its side for landscape exposures. A



versible finder (two levels) and a convenient focussing scale are features of the instrument, which, with R.R. lens of Messrs. Watson's manufacture fitted in a Bausch and Lomb shutter, costs £10s. complete with three dark-slides, or the camera may be obtained with a "Holistigmat" Series I, *f*/6, for 12 guineas, in which case focussing scales are fitted for the three foci—5½, 8½, and 12 inches—provided by the latter lens. For a light and efficient camera we can recommend this new instrument of Messrs. Watson's. External measurements, when the camera is closed for carrying, are 6 by 4½ by 2½ inches.

"Imperial" triple-expansion two-shutter outfit. Made by the Thornton-Pickard Manufacturing Co., Ltd., Altrincham.

In the 1908 model of this stand camera the Thornton-Pickard Co. have made improvements which give a still further range of movements to the camera and fit it still more for all descriptions of photography. The chief item is in respect to the focal-plane shutter, which is now made with two slits, the use of one or other of which, in conjunction with the series of five tensions of the actuating spring, gives a series of exposures from 1-25th to 1-1000th of a second. The change from one slit to another is very conveniently made, and the



also automatically opens itself to full aperture for focussing. The adjustments are made from the outside of the camera, and the facility which the possessor of this apparatus thus has in photographing the most rapidly moving objects makes the apparatus of general application. In other respects the camera is an improvement on last year's model, particularly in the front, which works freely in brass struts and gives a very great rising movement of the plate. The camera has the necessary wide-angle movements and a maximum extension of 22 inches, is fitted with swing-back, rotating

turntable, and, like other manufactures of the Thornton-Pickard Co., is produced with a regard for convenience and rapidity in use. The price of the apparatus in the half-plate size, complete with focal-plane and Thornton-Pickard roller-blind shutters, tripod, one double dark-slide, and Beck lens is £25 10s.

### CATALOGUES AND TRADE NOTICES.

"THE PROFESSIONAL PHOTOGRAPHER."—The May issue of this monthly journal contains some interesting notes on cathedral photography with a roll-film camera and on new apparatus for tank development more particularly useful to professionals. As usual, "The Professional Photographer" is well illustrated and produced.

THE CITY SALE AND EXCHANGE, of 81, Aldersgate Street, E.C., are issuing a list of second-hand goods, including cameras, lenses, enlargers, etc., which they are offering at considerably reduced prices. The list may be obtained on application to the above address, where also the goods can be inspected.

THE WESTMINSTER PHOTOGRAPHIC EXCHANGE, LTD., have just published the third edition of their list of second-hand and shop-soiled photographic apparatus, which includes various types of cameras (hand and stand), lenses by well-known makers, shutters, and a large variety of accessories. The list may be obtained on application to the above firm, at 119, Victoria Street, London, S.W.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

#### SATURDAY, MAY 30.

Southend-on-Sea Photographic Society. Outing to Canewdon.  
Chelsea and District Photographic Society. Excursion to Ewell and Chessington.  
Liverpool Amateur Photographic Association. Excursion to Bamford.  
Handsworth Photographic Society. Excursion to Forge Mills for Coleshill.  
Southampton Camera Club. Outing to Hamble and the Marshes.  
United Stereoscopic Society. Outing to the Vale of Middlesex.  
South Suburban Photographic Society. Excursion to Holmwood and Dorking.  
South London Photographic Society. Excursion to Oxshott Woods.  
Manchester Amateur Photographic Society. Ramble to Smithills Hall.

#### MONDAY, JUNE 1.

United Stereoscopic Society. "Effective Masking for Stereoscopic Prints." W. Reynolds.  
South London Photographic Society. "A Tour Through Devon." By the late John Hodges, F.R.P.S.

#### TUESDAY, JUNE 2.

Hackney Photographic Society. "Platinotype." G. Capper, J. Linley.

#### WEDNESDAY, JUNE 3.

Edinburgh Photographic Society. Forty-Eighth Annual Meeting.  
North Middlesex Photographic Society. Lantern Slide Competition and General Print Competition.  
Manchester Amateur Photographic Society. Ramble to Dane Valley.  
Leeds Camera Club. "Oil Printing." Chas. Wm. Dyal.  
Rugby Photographic Society. Excursion to Newton and Shawell.

#### THURSDAY, JUNE 4.

Middlethian Photographic Association. Annual Meeting and Election.  
Tunbridge Wells Amateur Photographic Association. Open Night.

### ROYAL PHOTOGRAPHIC SOCIETY.

MEETING held Tuesday, May 26, the president (Mr. J. C. S. Mummery) in the chair.

Mr. Thomas Manly gave a demonstration of the new method of working ozobrome, described last week in "The British Journal of Photography," and consisting in the use of a weak acid bath in place of water for the preliminary soaking of the pigment tissue. Mr. Manly showed the control in the contrast of the print which was possible by longer or shorter immersion of the tissue. In the short discussion which followed Mr. A. H. Blake spoke of the facility of the ozobrome process for controlling the values of a print. He preferred the No. 1 method for this purpose, and exercised control with a brush or the finger either when the print was being developed in the hot water, next while it was lying in cold water, and finally while it was half dry. He found it necessary at the first of these three stages to keep the print just below the surface of the hot water. If removed from the water reticulation was apt to occur, whilst if the print was deeply immersed it was difficult to use the brush or finger with sufficient delicacy. Mr. Blake, however, admitted the great waste of prints in carrying out such control

work as this, and instanced a case which had recently come to his notice where fire had broken out in the house of a worker in the gum-bichromate process owing to the great accumulation of waste prints on the householder's table. A hearty vote of thanks to Mr. Manly concluded the meeting.

**THE PHOTOGRAPHIC CLUB.**—At the meeting on Wednesday, May 20, Mr. W. F. Slater, F.R.P.S., delivered a lecture on the theory and practice of time development, having particular reference to the Kodak developing tank for roll films. In the course of an interesting paper Mr. Slater enunciated the principle that in the case of properly exposed plates the correct stage of development was more accurately arrived at by the use of a standard developing solution at a standard temperature and applied for a given time than by the usual method of relying upon judgment and ocular inspection. He further contended that in cases of over- or under-exposure better results were obtained by treating the plates precisely as though they were correctly exposed than by attempting any modified treatment to suit the particular case. From the discussion that followed it seemed to be the opinion that, while the system recommended was useful under some circumstances, and was perhaps the safest for beginners to follow, there was an amount of control that could be usefully exercised by the expert photographer.

**LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.**—At the meeting held on Thursday, May 21, Mr. A. Haddon in the chair, Mr. Frank Donisthorpe demonstrated the new Donisthorpe process. He pointed out that the negatives for this process should be thin and free from fog, and said that the hardening bath used acted as a strong intensifier. A lively discussion was carried on during the demonstration. The chairman elicited that the process had been tested for permanency by a print being exposed to the full light for nine months, half of which was covered, and that no change could be detected; also that the dyes could be removed from the negatives by washing, and placing it in a special converting solution which brought it back to its original state.

In reply to Mr. Teape, the lecturer stated that the only way to use a negative of ordinary density was to reduce and re-develop it before it was put into the hardening bath, otherwise the resulting print would be hard and contrasty. In reply to a question as to the reason of the tinted skies in the prints made in the room, the lecturer said that this tint only showed in the first pulls, and then not on every occasion.

As to the number of prints it was possible to obtain from a negative, the lecturer said that he had never come to the stage where the negative had worn through, and it was an easy matter to get off fifty or more.

## Commercial & Legal Intelligence.

**A CASE OF ASSAULT.**—In the Belfast Recorder's Court last week William Wilkes, photographer, 79, Divis Street, sued Henry Ingleby and David Keell, 63A, North Street, photographers, to recover £50, loss and damage sustained by the plaintiff for that the defendants assaulted, beat, and ill-treated him, whereby the plaintiff sustained serious injuries.

Mr. T. J. Campbell (instructed by Mr. John Graham) was for the plaintiff, and Mr. M. G. Ellison (instructed by Mr. Thomas Barkley) represented the defendants.

In stating the case Mr. Campbell said some time ago the plaintiff was in the employment of the defendants, and since he had left they had molested him, threatened him, and actually gone to his new employer and tried to get him dismissed. The conduct of the defendants all along had been of a very high-handed character, and on April 4 they committed a brutal and dastardly assault on the plaintiff. On that occasion his client was going home, about half-past ten, in company with a lady friend, to whom he had been paying attention. On the way up Clifton Street he noticed one of the emissaries of the defendants, who were apparently watching for him. As the plaintiff was standing speaking to the young lady at her door the defendants rushed up and one of them dealt the plaintiff a blow on the head. The other defendant closed in, and the two men proceeded to belabour his client in a most brutal fashion. There

was a wound on his arm, which must have been inflicted by some implement, while his forehead and chin were also bruised. As a consequence of the treatment he received from the defendants the plaintiff had to attend two doctors, who would tell the jury as to the extent of the injuries. Those were the facts of the case, and he asked the jury to teach the defendants that they could not resort to a midnight attack to deal with a man who was in commercial competition with them in the city.

Mr. Ellison, for the defence, said the case he had to tell the jury was less romantic than that told by Mr. Campbell about assassins coming at midnight and assaulting the plaintiff. On April 3 plaintiff was dismissed by the defendants. Miss Jennings, whom the jury had heard about, was the defendants' bookkeeper, and as such kept the keys of the premises, and on the night in question the defendants visited her house for the purpose of getting these keys. They found Miss Jennings standing outside the house with the plaintiff. Mr. Keell asked the young lady to speak to him, and when she refused about to do so the plaintiff said to her, "Stay where you are." The plaintiff then caught Keell by the coat, and the three men had some little argument. There was no real fight, and no weapons used. He submitted that whatever row there was was caused by the plaintiff's bad temper.

His Honour, in summing up, said if the jury believed the story told by the plaintiff, then it was not a case for nominal damages. If the plaintiff was telling the truth it was a deliberate attempt on the part of the defendants to put him out of business. It was a dastardly affair, and he was glad to say it was not the English way of doing business.

The jury found for the plaintiff, and assessed damages at £40.

**AN ENLARGEMENT CASE.**—At Chorley County Court, before Judge Hamilton, Samuel Cohen, trading as the Bona-Fide Art Company, Hightown, Manchester, sued Mrs. M. E. Ashton, landlady of the Wheatsheaf Hotel, Atherton, for 16s. 6d. in respect of the fraudulent enlargement of her daughter's photograph supplied to the plaintiff by the defendant. Verdict was given for the defendant.

**THE STORY OF A BOND STREET BUSINESS.**—The public examination took place at the London Bankruptcy Court on May 21 of Richard Berwick Hope, photographer, of 154, Portsdown Road, Paddington, and 171, New Bond Street. Debtor returned his liabilities £5,568, of which £4,689 is expected to rank for dividend. There are no assets. In reply to questions the debtor said he was formerly in the army, resigning in September, 1898, with the rank of lieutenant. In 1899 he purchased for £2,650 a half share in the business of a photographer and miniature painter, carried on at 175, New Bond Street, W., and afterwards removed to 171, New Bond Street. The purchase money debtor borrowed £2,000 from his wife. Branches were opened at Brighton, Liverpool, Manchester, and Brixton, and the debtor provided £600 further capital for this purpose. In 1901 the business was sold to a limited liability company, the bankruptcy share of the consideration being £6,167, of which 1,061 was paid in cash, out of which he subscribed for 500 shares, and the balance in fully-paid shares. The debtor was appointed joint managing director, at £150 a year, and he held the office until August, 1907, when the company went into liquidation. In November, 1905, the debtor and his brother purchased the London business of the company from the Receiver for the debenture holders for £1,250, and carried it on successfully at 171, New Bond Street until March 1907. Then further capital being required they sold the business for £5,500 in fully-paid shares to another company, formed to take it over. The debtor received 2,000 shares and sold 500 of them immediately afterwards for £500. This money was used in paying partnership liabilities. The other 1,500 shares were deposited as security for a loan with a moneylender, who recently disposed of the shares for £62 10s. to another creditor, who held a second charge on them. The debtor was appointed a director at £200 a year, and subsequently managing director at £350. This post he resigned. In June, 1907, debtor was appointed managing director at £100 a year of a small company formed to exploit the patent rights in a ladies' dress clip. Debtor sold a portion of his interest in this company to another person for £500, and also received 600 fully-paid shares from the company. The company is not now carrying on business. The debtor attributed this insolvency to the failure of the last-mentioned company, to the fact that the photographic business had been carried on at a loss since March, 1907, and to depreciation of



the shares in the photographic company. The examination included.

**BRECAMBE BANKRUPTCY.**—A dividend is to be paid in the estate of Alfred Ernest Edward Clay Poole, photographer, the Crescent, and Midland Studio, Northumberland Street, Mbe, Lancs. Claims should be sent by June 5 to the Official r, Preston.

**IAN KODAK COMPANY, OF NEW JERSEY.**—The usual quarterly ls of 1½ per cent. (being at the rate of 6 per cent. per annum) e outstanding Preferred Stock, and of 2½ per cent. (being at of 10 per cent. per annum) upon the outstanding Common t the Eastman Kodak Company, of New Jersey, will be paid 1, 1908, to stockholders of record on May 29, 1908.

#### NEW COMPANIES.

**ORD, LTD.**—Registered May 13. Capital £1,000, in £1 shares " and 500 "B"). Objects: To acquire the business of a turer of, and dealer in, photographic plates, paper, and s carried on by W. de Welford, at 61, Mansfield Row, Ilford. al public issue. Registered office, Wharf House, 4, High ford Hill, Essex.

## Correspondence.

*Correspondents should never write on both sides of the paper. Notice is taken of communications unless the names and addresses of the writers are given.*

*We do not undertake responsibility for the opinions expressed by correspondents.*

#### SUNDAY LABOUR.

To the Editors.

men,—In reply to your correspondent, "Six Days," I can that last season I was fined 10s. 6d. each week for Sunday and each week I employed a solicitor, and shall do exactly thing again all this season, commencing on Whit Sunday, at place. The takings average more or less, according to the of trips which are run to the place, and as at Cleethorpes e a great many more trips on a Sunday than on most of er days, I take as much money on a Sunday as on any three week days combined. There is a vast difference a football match and having your photograph taken. People ules to see a football match, whereas, when you have people in your shop window at photos shown, it often takes a al of persuasion and coaxing to get them in to be photo- and if the photographer did not take these Sunday trippers ple would be home again the same evening, and he would sed all that money for ever. If Sunday trading is to be let those in authority commence by closing public-houses, trams, trains, and all kinds of Sunday labour. Look, for at the various callings followed, say, in Whitechapel and etticoat Lane, on a Sunday. If your correspondent has to en days and does not like it, let him get another situation, will only have to work six days, or start a business on his unt. What is the good of running excursionists into a place day if they cannot be catered for? They come for a day's ut—perhaps the only one they get for the year—and they ir photographs taken. They want something to eat, and hopkeeper in Cleethorpes sells a penny banana or a penny- sweets, or a pipe of tobacco, or takes a portrait on a Sunday s it on a Monday he is summoned, and is fined 5s. and der an old Act, Charles II., 1677, made before photography invented or thought of. Therefore, I contend it was never r photographers at all. Let me conclude by saying that, in on, any man who would shut up a photographic studio and ublic-house open deserves three months, without the option —Yours,  
r Light Studios, Promenade, Cleethorpes. JOHN HAWKEY.

## Answers to Correspondents.

- \* All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.
- \* Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.
- \* Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., 24, Wellington Street, Strand, London, W.C.
- \* For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.

#### PHOTOGRAPHS REGISTERED:—

E. D. D. Terry, 164, Upper Richmond Road, Putney. Photograph of a Group of Gipsies Round Two Pots Over a Camp Fire.

ED. PLOWMAN.—Stand cameras are not permitted at all. Hand-cameras, so we are informed, may be used by amateurs on a permit being obtained from the offices of the exhibition.

J. C. COUCHE.—Your query is one that we cannot give a decided opinion upon, as we have not seen the agreement you made with regard to allowing the part of the money to remain for the three months. The matter, it seems to us, from the small data you give, to be somewhat complicated, and we should therefore suggest that you consult a solicitor, and put the thing in his hands to deal with. Anyhow, we do not think it will be wise for you to act as you suggest without first consulting your solicitor.

**COPYRIGHT QUERY.**—I have bought a very large (36 x 18) and valuable negative. Nothing has been said about copyright. The negative was taken forty years ago. I want to protect my prints that I take from the said negative. Can I do so, and what is the best method? Your advice will be gladly accepted.—F. HOLLOWAY.

You should have ascertained about the copyright when buying the negative. There may be a copyright in it, and if that is the case it will be illegal for you to produce prints from it. If there is no copyright in it, and probably that is so, as it has been taken so long, you cannot claim a copyright in it. If there were any copyright in the picture, as the negative was sold without it being assigned, the copyright in it has expired and any one can copy it.

**POSTCARD PRINTING.**—I should be extremely obliged for your opinion on the following questions:—I am installing in my work-room a bromide printing machine, which prints a large sheet of card bromide for postcards, about 24 x 22, or about twenty-eight postcards, and what I wish your opinion on is about printing on the reverse side. I am not wishful to go to a big expense in having a proper printing machine, I think of trying to print them on a mangle with very good rollers and printer's blanketing put on them. Do you think this ought to do all right for this, and is it advisable to get a litho printing surface, half tone or typo? I am afraid with typo it will make too much impression on the photographic side of the card. Trusting this is quite clear.—ANXIOUS.

This is a query we cannot answer definitely as we have had no experience in the use of a mangle in printing, either lithographically or typographically. We should advise you to make some experiments in the way you propose and see how it answers. We should think that, probably, the best thing for you to do would be to get a lithographer to do the printing on the reverse side of the sheets for you. It would, probably, taking time into consideration, cost you less, and the result would be better than you could obtain by the primitive method you propose.

**LENS NOT WORKING TO FOCUS.**—I have just got a half-plate lens, rather cheap one, no name on it. In focussing, I get the figure sharp on ground glass at full aperture, which is f/8. I stop down to f/11 for head vignette, and it looks perfectly clear and very sharp, but when I develop plates I find the face is not sharp. At first I thought it was because the ground glass was not just where the plate came, but I find on measuring it is exactly true.

Also, to test it, I tried another lens on camera which I knew was a good lens, and I got a good sharp negative. The thing that puzzles me with this lens is why the figure appears sharp on ground glass and out of focus on negative. I have just tried eight plates on different sitters, and focussed by three of us, but all had the same result—the coats and dresses appearing fairly sharp, but the faces out of focus. Can you enlighten me as to the cause?—PUZZLED.

Your lens is evidently not achromatic—that is, it is not corrected for colour. Try racking in the camera slightly, after focussing and before exposing. A few trials will show whether this is the true cause of the trouble, and also the amount of racking is required to correct it.

W. E. L.—The publication is "Photographische Korrespondenz," published at 12, Backerstrasse, Vienna. No doubt you can obtain the issue of the journal from this address or peruse it yourself in the library of the Patent Office, Southampton Buildings, London, W.C., or in that of the R.P.S., 66, Russell Square, W.C.

X-RAY PHOTOGRAPHY.—I have recently developed several X-ray 12 x 10 plates for a local doctor. Some came out very thin, some seem to fog quickly, and the results, taken as a whole, are not as good as I should like to produce. The doctor places the plates under the patient, and sometimes they get broken by the patient's weight. Please tell me in your valuable journal: (1) Which is the best brand of plates for X-ray work? (2) What exposure ought the doctor to give? (3) Which is the best mode of development? and (4) Ought the developer to take as long as for other ordinary work, or longer?—J. H.

(1) There is a great difference of opinion as to the best plate for X-ray work. Some favour a slow and some a fast plate. Plates made by Lumière, B. J. Edwards and Co., Ilford Ltd., and Sanger-Shepherd are largely in use. (2) Impossible to say. It varies with the thickness of the part of the body which is being photographed. (3) The ordinary one. (4) As usual.

LUXEPIA PAPER.—In your review of May 1 of "Luxepia" you state that some 40 seconds to daylight was needed. I have experimented with an average negative and found that three to five minutes was not enough, and that although the image was "printed out" a pale brown, development had no greater effect. The Watkins act (standard meter) light was 60 seconds to the same light. My chemicals were all fresh, with the exception of the potass citrate, which had liquefied to treacle consistency, but that should not make any difference. Can you help me?—S. H. C. (St. Ives).

We can only repeat that the exposures mentioned were those actually given to negatives in rather dull afternoon light. The image should not print out. Apparently your failure is due to reversal by over-exposure. Try with the lesser time of exposure.

TONING BATH.—Would you please let me know what I ought to do in the following? I am using the following bath for toning:—(A) 15 grains chloride of gold, 7½ oz. of water; (B) 1 oz. ammonium sulphocyanide, 16 oz. water, taking 1 oz. of each to 15 oz. of water for use. Ought I to throw this bath away when done, or can I add a quantity of each A and B to it, and throwing the bottom part in the bottle away when using again?—CYMRO.

The bath can be further strengthened by adding A and B, but it does not keep in its best condition long after doctoring in this way.

DETECTIVE.—We are afraid we can only suggest that you inquire of the police, who, if you have any clue, can perhaps assist you. We doubt if one of the detective agencies, whose announcements you will see on the back page of the "Daily Telegraph," could do much. It depends on what clue you have.

RETOUCHING (reply to E. W.).—The children's faces are excellently worked, and display a very good knowledge of retouching indeed. The large head is rather undecided in the grain and modelling, but is soft in effect. One of your best points is careful retention of the likeness. All the high-lights should be worked up on the woman's face, and, considering the freckled nature of the sitter, a bolder skin texture should be shown. There is not much to find fault with that could not be easily remedied with a little extra attention.

O. A. ISAACS (Jamaica).—Thanks for your letter. Prints by the new process are indistinguishable from those by the usual method. Those by the second method you name are not quite equal. As regards the other two, the materials are not yet on the market

here, but our own experience of the development paper to prophesy a wide use for it.

RE-CEMENTING LENSES.—I have an old portrait lens, and should clean it myself. Can you tell me how to separate the c lenses and how to join them together again with fresh balsam?—W. CREASEY.

Unless the balsam is very badly discoloured, or the glass separating, we should not advise you to tamper with it, as a rule novices' attempts at re-cementing lenses are great successes. However, this is how the work is done: the lens in a saucepan of cold water and gradually heat it till the glasses can be slid apart with light pressure. Next clean the old balsam with turpentine. Then make the glass, place a drop of Canada balsam in the centre, and press surfaces in contact so as to squeeze out all the balsam. Finally, put the lens in a place where it can be kept warm till the balsam has hardened. This will take a rather long time.

OTHELLO.—The American Express Company, Waterloo Road, S.W., will take parcels carriage forward.

INTERESTED.—Apply to Messrs. Newton and Co., 3, Fleet Street, London, E.C. They are one of the few firms making apparatus.

X.Y.Z. AND OTHERS.—In our next.

J. OSBORNE.—Out of our province. You should apply to an expert, such as Mr. A. Rischgitz, The Studios, Linden Road, Bayswater, W.

PIGMENT PAPER.—Please give me a formula for coating a paper with a mixture of fish glue and gum or some other colloids, so that pigment or pigments which will work in the same way as the commercial "gum" papers—the paper so coated being subsequently sensitised as may be desired.—ENQUIRER.

Makers of commercial papers do not publish the formulae for their emulsion. You might, however, try some such mixture as follows: three parts of a solution of gum arabic 1:8 and one part glue; to this add a small quantity of pigment the colour desired—very little is required. A few tentative experiments will show you the best proportions to employ for your purposes.

HIS HOLINESS THE POPE AND URBANORA.—The news will be welcomed by good Catholics all over the world, and, indeed, who recognise the educational scope of "Urbanora," that His Holiness the Pope has during the week entertained a party of Mr. Urban's expert bioscopists at the Vatican and sanctioned the showing of a delightful intimate series of animated pictures to the Pope and his suite. The visit to Rome was undertaken at the express desire of the Pope, and as facilities of a quite unusual character have been afforded the operators, the most entertaining results may be anticipated. In the meantime Mr. Urban will show his pictures at the Alhambra, on and after Monday next, the veritable record of the hunt in Russia—the pursuit of a huge black brute by a multitude armed with axes, pitchforks, bludgeons, and, last of all, firearms. In no sense is this a "faked" or an improvised film, but an actual battue, only successfully photographed after many and at obvious risks to the man behind the camera.

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of photographic studios on board the vessels. (P. 430.)

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ect before him. (P. 430.)

rospectus of the Royal Photographic Society's exhibition  
been published. We give an abstract of the chief regula-  
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ranco-British Exhibition.—We give particulars of photo-  
exhibits at present discoverable in the exhibition. (P. 434.)

## "COLOUR PHOTOGRAPHY" SUPPLEMENT.

hibition of the Society of Colour Photographers is open daily  
ellington Street, from 10 a.m. to 8 p.m. (Saturdays, 10 to 5).  
hibition will be open on Monday next (Whit Monday) from  
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ch worker who has recently made 1,300 Autochromes in  
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ondence on colour photography deals with Autochrome  
landscape and on tour, and with the use of leuco dyes for  
duction of Autochromes. (P. 47.)

## EX CATHEDRA.

### The R.P.S. Exhibition.

The prospectus of the forthcoming ex-  
hibition of the Royal Photographic  
Society has been issued, and is obtainable from the secre-  
tary at 66, Russell Square, London, W.C. With the ex-  
ception that a sub-section (IIa.) of the technical class has  
been created for screen-plate colour transparencies, no  
alteration in the general scheme of the exhibition has been  
made. We wish we could say that it had. The exhibition  
authorities at Russell Square have no doubt considered  
the revision of the regulation as to Section III., which  
includes professional photography, but they have made  
no change in the regulations which, during the past year  
or two, have failed to attract professional work. Mr.  
Crooke has loyally supported the exhibition with his  
magnificent portraiture, but other leading workers have  
been content to offer their work for inclusion with that  
of anybody who cares to pay for space at 5s. per foot run.  
We are not surprised that under these circumstances a  
representative show of professional work has been missing  
from the Royal for the last few years. The professional  
photographer has naturally to look to the company he  
keeps, and if he cannot afford to purchase space sufficient  
to set him apart, he is naturally reluctant to exhibit under  
conditions which suggest that he has been classed by the  
Royal Photographic Society with anybody who pays for  
space alongside him.

\* \* \*

### The Photo-graph as County-court Evidence.

We were interested in hearing, a little  
time ago, of a photographer in a  
Northern suburb, who, in suing for pay-  
ment of an account, produced a  
photograph of the defendant of the suit in proof of  
the latter's ability to pay the money. He won his  
case, and now we see that a photographic firm in  
the South-West of London has gone one better in taking  
out a summons against a person who owed them  
£5 9s. 6d. The person said he was a butcher, but had  
done nothing for a long time. The plaintiffs' representa-  
tive stated that their recalcitrant customer was a com-  
mission agent as well as a butcher, and that not long ago  
he had provided a very swagger wedding on the occasion of  
his daughter's marriage. A photograph of the wedding  
group was handed up to his Honour, who made an order  
for the payment of the money.

\* \* \*

### Cela ne s'engage rien.

If we may believe a Paris daily paper,  
the latest outbreak of the "free" sitting  
is now taking place in Paris.  
"Cherchez la femme" has long been the keynote of many  
a dramatic plot, just as it will always be a good motto for  
photographers; but a new significance has been given to

it by the tactics of photographers in the French capital, who are making a bold bid for the patronage of the *midinettes*, pretty and otherwise, who throng certain quarters of Paris during the hour allowed them for their frugal lunch. The dressmaker's "improver," and even the factory hand, is a daintier little person than her London prototype, and perhaps a little more susceptible to the overtures of the pavement photographer. At any rate, we learn that the latter finds many sitters for a series of portraits in six different positions, which he offers to take on the chance of Mademoiselle choosing to buy them when she sees them the next day. "*Cela ne s'engage rien*" is the motto of this newest apostle of the "free" sitting, and to the accompaniment of a good deal of fun he photographs his sitters *en plein air*. The next day he brings the portraits—all six positions—and Mademoiselle usually purchases and orders some further copies. All of which makes us wonder whether we shall run across the same sort of thing in Wigmore Street or Soho Square, to name two thoroughfares where girl employees are numerous; or will the police mercifully veto this form of ex-studio portraiture?

\* \* \*

### The Studio Aboard Ship.

We learn from a German source that a photographic studio has been fitted up on the American liner of the North German Lloyd, the "*Kronprinzessin Cäcilie*." The studio is to provide every facility for photographic portraiture, and the ship's photographer will complete and deliver copies to the traveller's order. The studio will also undertake the developing and printing of amateurs' exposures made *en voyage*. It can certainly be no particularly consoling sight to see photographic business spirited away on to the high seas, but we have no information as to whether the productions of the floating studio are to compare with those of a well-equipped establishment ashore; but the incident may serve to provide a hint to photographers of the unlikely places where openings are to be found for photographic business. It may be seriously questioned, though, whether many people feel that they are looking their best during an Atlantic passage in not the best of weather.

\* \* \*

### Elementary Optics Again.

Some time ago we had occasion to comment on some extraordinary lens tests described in an American magazine, and the author of these tests now admits that our criticism was justified in one case, though in the other cases he calls upon various authorities to prove that we were altogether in the wrong. We objected to the test given for flare spot, as it was merely a test for the erect image sometimes formed on one side of a plate when a bright light is sharply focussed on the other side. This is not the effect commonly known as flare spot, which is sometimes described as an image of the diaphragm, but which, more correctly, is a much out-of-focus small scale inverted image of the view in front of the lens. The image to which flare spot is due is generally formed close to the lens, that causing the other effect, very close to the plate, and the two effects are quite different. Very curiously our American writer remarks in regard to his own test: "I am told it is the test for ghost or false image." We did not tell him this in our note, but it is quite correct, and we are glad to see that some one else has backed us up in our attempt to put him right. He quotes an English authority in support of his own method of testing for chromatic aberration, but if he will refer again to the authority in question he will find some very essential differences. The test chart is placed at an angle with the lens and focus is secured in the centre, but there is nothing

about putting the chart at an angle in the tests we cited. Other items in our note being passed over, we may assume that the writer is unprepared to defend strange ideas with regard to covering angle and distortion.

\* \* \*

### 'Oil' and Nature.

From all account the oil process and its allied method, "bromoil," are obsessions of the present season among photographers whose aims are the exhibition walls of the Royal, or Northern. Most people will be surprised if "oil" not come out far away at the head of the pictorial parade in Pall Mall and the New Gallery, while as for the Northern, not the stalwart Inston plumped for it without qualification. We hear of exhibitors whose pictures have not been seen in late years taking up their work under the inspiration of "oil." Amid all that is being said and written on the subject, we come across one little suggestion in the "Secret Letter" of the Scottish Photographic Affiliation, which is worth emphasising. There a Mr. Peter Mitchell anticipates that the "oil" worker will practise the profession with his subject before him. We sincerely hope he is right—there seems no good reason why he should not. We shall then expect to be spared some of the extravagancies of Nature of which the oil process in incautious hands is likely to prove so fruitful. Delightful visits to the immediate future—the photographer seated in a village street, before his bromoil enlargement, is pigmenting!

### A DIFFICULT POINT IN THE OWNERSHIP OF NEGATIVES.

A QUERY of more than passing interest to professional portraitists, and their customers, reaches us this week. The principal interest in it is that it involves some points with regard to the ownership of negatives and the disposal of them. So far as the Copyright Act is concerned there is no provision in it which seems to meet the present case; neither does anything that has been legally decided with reference to the ownership of negatives bear directly on the point. It has, over and over again, been decided in the Courts that negatives taken in the ordinary course of business are the property of the photographer who takes them. It was also decided, some twenty years or so in the case of Pollard versus the Photographic Company, that although the photographer is the owner of the negative, he has no right to use it for any purposes of his own—such as producing prints from it for sale, or making enlargements for the purpose of specimens.

It is perfectly clear that, as the photographer has no right to make copies, he has no right to sell the negative itself. But supposing the photographer becomes bankrupt, then the whole of his property passes into the hands of the Bankruptcy Court, which then disposes of it for the benefit of the creditors. All the belongings, the stock, the trade, apparatus, negatives, etc., are sold for what they will fetch. In the case of the purchaser of the negative there seems to be, so far as the law is concerned, no restriction as to what he may, or may not, do with them. If he has passed legally from the possession of the one who once owned them to another who, by purchase without restrictions, becomes the possessor of them. We here mention that some few years ago, at the Fine Art market at Islington, we saw displayed for sale a number of fine carbon enlargements, expensively finished, together with several piles of negatives. We recognised the production of a then well-known West-End firm, and had "come to grief" some little time previously. Looking at some of the negatives, we saw on them the names of several fashionable and titled folk. It occurred to us at the time that, according to law, there was no



vent the negatives being used for specimen purposes, to the annoyance of the sitters. The case stated by respondent is precisely on all fours with this, and clearly put, we here give his letter in its entirety:

"I would esteem it a favour if you will kindly give me information on the following points:—A, a photographer, being in bankruptcy, trustee of the estates, sells to C, a local stationer, all the negatives, belonging to A, of his private customers. C, having bought the negatives, decides to sell the negatives to children and general public at a halfpenny each, but refuses to supply any one negative of a particular individual. X Y Z, having had several photographs taken by A, is desirous to prevent the indiscriminate sale of negatives of himself and family, and desires them to be either destroyed or sold to him. The stationer says he cannot attempt to destroy amongst thousands of negatives for them, as they have all been sold up, and, moreover, he wouldn't know them if he saw the negatives. What action can X Y Z take to prevent their sale, and against whom should he proceed, as having paid for the photographs, he understands that, whilst the negative was in the photographer's possession, the sole right of the use of same was his?"

"I am not at all to be wondered at that 'X Y Z' feels annoyed at the negatives of himself and his family being dealt with in this way. But the question is, what can he do, or can he do anything, to prevent the negatives (purchased by him) from coming into the possession of the stationer in a perfectly legitimate way, and it would be a hardship upon him if he could not dispose of them in the way he is doing. At the same time one must have some sympathy with 'X Y Z' in his knowledge that portraits of himself and members of his family are being so sold without his knowing to what uses they may ultimately be put, and what annoyance it may possibly cause him. If any remedy is caused he has no remedy against the photographer, as he is no party to it, as the negatives were taken from him according to the law of bankruptcy. He did not voluntarily part with them, and we do not see that any action could lie against the present owner of them."

Should the negatives be used for any improper purpose it is possible that an injunction from the Court of Chancery to restrain might be obtained to stop the annoyance, but that would be a somewhat costly proceeding, even if successful. In that case action would have to be taken against those who are actually making the improper use of the portraits, as an action could not be sustained against the photographer who originally took the negatives. Nor would one lie against the trustee in the bankruptcy proceedings, nor, we imagine, against the stationer. It is very probable that the latter, as a matter of business, would sell the particular negatives in question, if he were offered such a price for them as would repay him to make a diligent, possibly a prolonged, search for them, but so far as we can see he cannot be compelled by law to undertake it. Furthermore, he may not now have the negatives in his possession.

Let us now see if the Copyright Act can be applied in any way in such a case as this. If a copyright negative is sold, and the copyright in it is not properly assigned, the copyright lapses. In the present case there was no such assignment, nor could there be by the photographer, as the negatives being taken in the ordinary course of business, he had no copyright in them. That was vested in the one who paid for the portraits—presumably the writer of the letter—and it is still owned by him. It seems to us that if he now registers his copyright in the portraits he can take proceedings, under the Copyright Act, against anyone selling or exhibiting prints made from the negatives; but that, under the circumstances, gives him but little practical satisfaction, yet is, we think, all he can obtain.

The case serves to illustrate that portraits of persons taken in the ordinary course may, under some remote circumstances, be put to purposes of which the sitters certainly would not approve.

## A REFLEX ATTACHMENT.

Some time ago, finding the necessity for an "all-round" camera for holidays, etc., I devised a form of reflex camera. Of late numerous styles of such apparatus have been on the market, I think my model would claim a larger share of attention from those desiring a really "all-round" camera. For the benefit of such, I give here a somewhat detailed description of the model as first made—quarter-plate camera, which, however, after some usage, was found rather a small camera, and I would recommend 5 x 4 or half-plate in preference. The camera is of the Sanderson type—i.e., with swing-front and sliding to front motions—was the foundation. The shutter is of the focal-plane, with square opening. The reversing back of the camera was fitted to the focal-plane shutter so that it could be used either as required. The shutter was then built into the reversing back, with the mirror and horizontal focussing-screen. The front of this box was arranged to clip on to the back of the camera.

The points required some manipulation:—

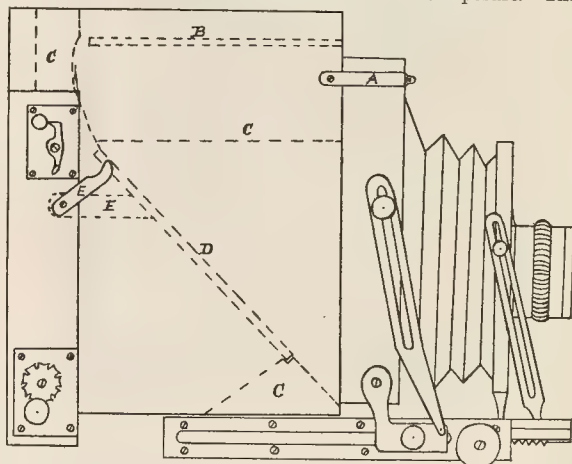
- 1. The focussing-screen.
- 2. The mirror movement.

With regard to these, it was required to lessen the distance between the shutter and the focussing-screen as much as possible. A focal-plane shutter to the box would take up less room, and every little

weight of the focussing-screen was square, and gave only 4 in., not 5 in. This gave all the picture, and saved a little in length

The movement of mirror was so arranged that no springs

whatever were brought into requisition. Then no jolt or jar could arise to shake the camera at the time of exposure. The



A. Spring catch to hold camera in position. B. Focussing screen. C. Cut off blocks for light. D. Mirror. E. Shutter release, actuated by F. Arm of mirror.

weight of the mirror brought it down, so that the mirror was always in place for viewing and safeguarding the plate, except for the short period when the actual exposure was made.

It was not hinged at the top, for then the rise of the mirror would have described an arc, ever increasing the length of the box. Instead, the mirror was hung by its centre on two arms, the pivot being at end of arms close up to the blind of the shutter. The motion of the mirror was then an increasing arc for a very short part of its course, and then it rose vertically with a slight backward tendency. It was found that the action of the mirror took up less room than was required for the focussing-screen. In working it out this might be borne in mind, and probably placing the screen at an angle might be an advantage in more ways than one. The actual positions of mirror face, arm, and pivot were found by the aid of some pieces of cardboard and drawing-pins.

The body of the camera affixed to the front takes up more room, and 6in. to 6½in. focus lenses are required, but a 5½in. focus lens may be used if necessary by temporarily screwing the lens "inside."

Now let me give my reasons for designing such a model—in other words, the capabilities of the instrument. I often went

on holidays or cycle trips with either a hand-camera or a stand-camera, together with a casket of lenses. Often when I had one instrument I wished I had the other. To obviate this I designed this model.

The model as described was to be enclosed in a box, with double doors arranged to open so as to allow the stand-camera to be withdrawn, or for very long focus lenses. As a hand-camera, lenses of 5½in. or 6in. to 9in. or 10in. focus could be used. The release was arranged so that pressure raised the mirror, and as soon as the mirror reached the cut-off the release blind was released.

For stand-camera work, the two catches would be released and the camera drawn out of the box. Architectural and similar studies are rarely taken hurriedly, and the few seconds taken for detaching and replacing the stand-camera would be fully compensated for by the advantages gained in having a stand-camera with which to do work when required.

The diagram given will, it is hoped, make the positions of various parts readily understood.

HILTON GRUNT

## THE COLOUR-FILTER AND THE "ISOCROMATIC" PLATE IN ASTRONOMICAL PHOTOGRAPHY.

### III.

It has been suggested that, inasmuch as the objective in itself certainly possesses selective absorption, prismatic spectra were therefore very suitable, and in fact "quite the correct thing" for tests of relative sensitiveness. A series of spectra illustrating the absorption of the 40-in. objective (Fig. 10) shows, however, that beyond an absorption of about 200 Å. in the extreme ultra-violet there is

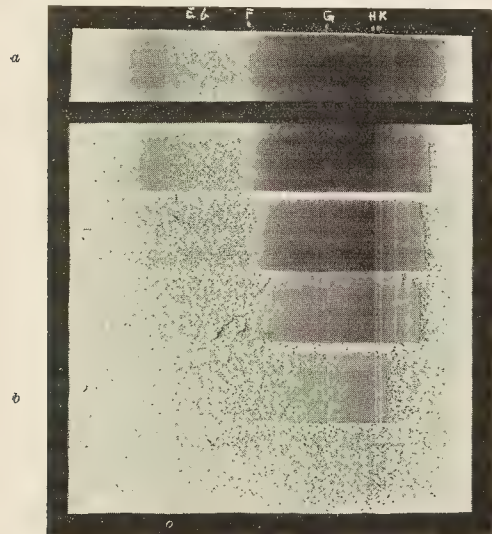


Fig. 10.

- a. Cramer instantaneous isochromatic unscreened.  
b. Varying exposures through 40-in. objective to same sky as in a, and showing absorption in ultra-violet.

no shift in the point of maximum sensitiveness, which remains constant at  $\lambda 4100$ . In previous papers the writer has demonstrated with some degree of completeness the incomparability of prismatic and diffraction spectra.

Inasmuch as we are mainly concerned at present with the action of the plate under a colour-filter, a series of exposures was also

made through a  $\lambda 5000$  filter (precisely similar to that made for Professor Lowell) to the spectrum of diffused daylight, and the measurements were measured and plotted. Similar exposures were also made upon the pinacyanol and pinachrome bathed "iso" plate, which also measured (for equal-exposure times). These exposures, together with their resultant measured curves, are now shown in Fig. 11.

Measurement of the relative areas of these curves gives a value which is practically equal.

Exact tests are desirable, however, to determine the remainder

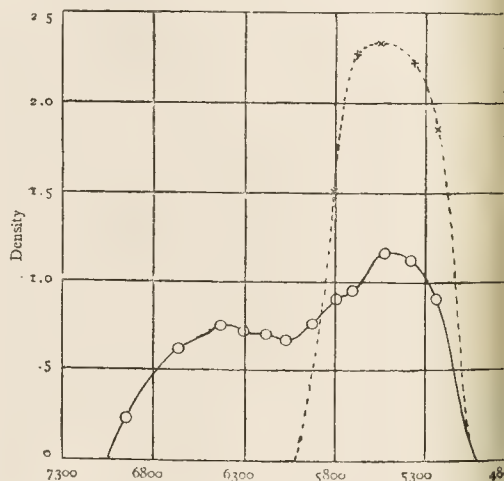


Fig. 11.

constants of the plate, and to that end two isochromatic plates (bathed and normal) were exposed simultaneously in the revolving sector-disc machine behind the  $\lambda 5000$  filter to diffused daylight. Both plates were developed together at the one time, for the same length of time, and at constant temperature. They were then measured, and their curves are shown in Fig. 12.

Parallelism of the curves instantly indicates no change in sensitiveness by bathing, while the extraction of the relative speed gives a value of 1.1 times, or 10 per cent. in favour of the bathed plate. As this is a negligible amount in plate density, it therefore



by direct measures to selective light, the speed estimate obtained from the spectrum curves. Flat reproductions are also of the plates measured. It results, therefore, that there is direct gain in speed, but merely extension of spectral sensitiveness the effect of which will be presently shown.

Looking up the "tests" by Lowell, I quote from "Lowell Observatory Bulletin," No. 31, as follows: "Exposing a plate of this kind Mars, in our usual way . . . I took half the number behind the screen, and then, replacing it by the new one, took as many, both sets being exposed equally. . . . The results stood self-sessed, the detail came out sharper in the images taken with the yellow screen than with those taken with the yellow. . . ."

It would have been rather astonishing had the result not shown reference; for when we consider that we are dealing with two very different colour-filters, one of which transmits to  $\lambda 4800$  and of which are constructed for use with a plate possessing one high maximum in the yellow-green, it would hardly be expected that they should give as sharp results when used with a plate possessed of two active maxima. A more complete knowledge of the underlying principles would have predicated the result obtained. Had the  $\lambda 4800$  filter been intended to be used on such a

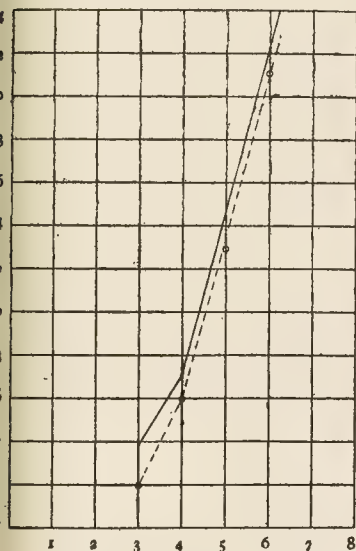


Fig. 12.



Exposure in powers of 2.

of plate, then it would have been made to absorb the red end

at an extended sensitiveness does not compensate for a single maximum, is very well shown in the accompanying illustration (Fig. 13), which represents a series of (a) three exposures with the telescope upon an instantaneous "iso" plate through a colour-filter at the critical focus; and (b) three more exposures upon the star, through the same filter, for similar lengths of time, at exactly the same focus, with estimated identity of seeing, but a red-sensitive plate. The increase in the size of the images, the loss in sharpness, is readily apparent, and needs no further comment.

Instead of a star we assume the case of the planet Mars, then we should have still a more decided example, because, according to Lowell, "the continuous spectrum of Mars is decidedly stronger in orange red than that of the moon, while at E the reverse is true," whence an increased action in the out-of-focus red. Making use of the colour-filter  $\lambda 4800$  with a red-sensitive plate, the results being made of more than double the amount of out-of-focus than would be effective if the filter were used with the plate which it was solely constructed for; by the lowering of sensi-

tiveness in the original isochromatic maximum, there is an increase in the burden of action which is thrown, first, upon the amount of blue light transmitted by the filter, and second, upon the region of enhanced sensitiveness at the red end, which is, equally with the blue, upon a rising branch of the objective's colour curve.

With the orange filter the blue is cut off entirely, confining the action to the yellow-green and red, i.e., to the flat portion and a single rising branch, therefore a step nearer monochromatic conditions. Were the action taken entirely out of the red and added to the yellow-green, it would be a step still nearer true monochromatism, but such a change would result simply in practically duplicating the original compensated curve of the instantaneous isochromatic plate (see Fig. 11). It therefore follows, and is beyond the possibility of doubt, that if this filter be used in conjunction with the instantaneous "iso," still sharper images will be obtained than with the red-sensitive plate, because the active rays will be more nearly monochromatic.

The value of exposure combined with steadiness of air as influencing sharpness, (1) by reason of monochromatism of light acting, and (2) by only making use of a minimum disturbance, is shown by the excellence of direct solar negatives made with the blue light on ordinary non-orthochromatic plates, at a point where the colour curve is rapidly approaching the vertical.

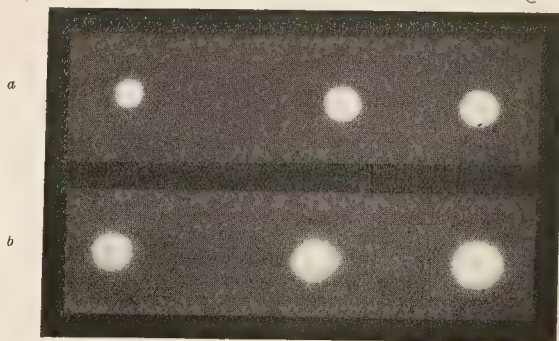


Fig. 13.

Star images with 40-in. telescope photographed under identical conditions of "seeing," focus, exposure time, and colour-filter ( $\lambda 4950$ ), but upon (a) isochromatic and (b) red-sensitive plate.

Important as is the correct appreciation of the isochromatic plate, colour-filter, and exposure, yet of an importance equally commensurate is the rôle played by an efficient backing. It is safe to state that in the delineation of astronomical detail the omission of backing causes at least a 50 per cent. loss of presentable results; while in each instance where such results have been attained they would have been 100 per cent. better had backing been used. It is equally safe to say that the lack of knowledge on this point is even greater than on the chromatic adjustment of plate and filter, and yet the principle involved is of obvious comprehension.

In practical work a backing composed of caramel mixed with a quantity of burnt sienna, or lampblack, has been found highly efficient. The compound is smeared heavily over the back of the plate with a stiff bristle brush.

When use is made of red-sensitive plates it would obviously be of no avail to colour the caramel red, because the modicum of light returned would be that to which the plate was sensitive, hence the best result for general work will be attained by the use of black. A damp wad of absorbent cotton readily removes the backing before development.<sup>10</sup>

To be most thoroughly effective, the backing should be in contact with the sensitive film and between it and the glass support. Such plates with a stained substratum are manufactured by several firms, but deficiency in the relative sensitiveness of the film has—so far—eliminated them from use in astronomical work.

<sup>10</sup> If the plate be laid aside for some time before development the backing should be removed, as its presence results in peculiar markings upon the film.

In concluding these remarks upon the influence of filters and isochromatic plates in astronomical photography, no claim is made for general originality; in the specific application to astronomy the treatment is new, but otherwise all points are matters of common knowledge to the photo-physical student.

We may summarise the foregoing in the following few sentences:

1. It is axiomatic that the closer the approach to monochromatic illumination, the more critically sharp will be the image. In practice the approach to monochromatic conditions is governed by the sensitiveness of the plate to the region under consideration.

2. With the use of the commercial isochromatic plate with its single secondary maximum in the yellow-green, there is no certain improvement in photographic definition (astronomically considered) by making use of a colour-filter of greater mean absorption than  $\lambda 4900 - \lambda 5000$ .

3. The two governing factors in successful astronomical photography of faint detail on illuminated areas (such as lunar or planetary work) are first, critical minimum exposure; and second, effective backing.

4. Given the necessary apparatus and material and assuming the ordinary ability to handle it, the personality of the operator exercises no influence upon the results obtained. These are, instead, relatively good or bad, as the "seeing" is excellent or poor.

ROBERT JAMES WALLACE.

### THE FRANCO-BRITISH EXHIBITION.

In order to see how far the rumours of incompleteness were correct, a representative of "The British Journal of Photography" paid a visit to Shepherd's Bush on Monday last, in order to discover what exhibits of particular photographic interest could be found in the many courts and galleries of the exhibition. Photographers who visit Shepherd's Bush with the intention of spending an enjoyable evening in the gardens and palaces, which already are well laid out and liberally provided with musical programmes, should enter the exhibition at the entrance close to the Shepherd's Bush Central London Tube Station, not the new station which now forms the terminus of the Central London Railway. A long elevated gallery connects this first-named station with the Court of Honour, and in this will be found the majority of the photographic exhibits which are at present discoverable. The official catalogue of the exhibition is apparently not yet available, but, so far as can be ascertained, the list which we give below includes the chief photographic exhibits.

A few yards on the left, after passing the turnstiles, will be found the collection of British pictorial photography, arranged by Messrs. Reginald Craigie, J. C. S. Mummery, and F. I. Spielmann. The collection is most tastefully displayed, and includes many pictures, which have been seen at past exhibitions of the Royal Photographic Society and the Linked Ring. A list of the pictures and their exhibitors will be found framed at the entrance to this sub-section.

A little further on, on the same side, will be found the frame of Messrs. Ilford, Ltd., a decorative scheme in oak and gold, containing thirteen prints or enlargements illustrative of the various manufactures of Ilford, Ltd., in the way of papers. These include prints on Ilford glossy P.O.P., "Bromona" bromide paper, toned, Ilford glossy gaslight paper, matt collodion, and "Platona" platinum paper. Noticeable among these prints is the portrait work of Mr. Elwin Neame, the high technical quality of which obtains a very good showing on the various brands of Ilford paper. A neat list of the exhibits, described in English and French, is provided in a hanging box below the exhibit.

Nearly opposite is a handsome display by the firm of Lafayette, which consists of an oak framework decorated in gold, with the photographs arranged on a background of pale green arras cloth. Messrs. Lafayette's well-known work in portraiture here obtains a very good representation, and includes some charming examples of miniature painting and one or two firelight portraits, which are particularly deserving of notice on account of their novelty.

A step or two further on, on the same side of the gallery, is an imposing collection of three-colour reproduction work by the firm of Carl Hentschel, Ltd.; a Hentschel colourtype reproduction of Mr. Charles A. Buchel's portrait of the King forms the centre of this

collection. In the centre of the gallery, close to the above is the stall of Messrs. Burroughs, Wellcome, and Co., hands made in mahogany, and displaying lantern slides showing various tones obtained by direct development with "tabloid" preparation; also negatives showing the result of tabloid intensification and reduction. Again, nearly facing Messrs. Burroughs, Wellcome, is the stall reserved to the Kinora Company, but at the time of our visit it was unoccupied by any exhibit.

A walk of a minute or two along the galleries brings us to the French section, devoted to printing and other pictorial arts, in which we found a section devoted to French photography. Evidently this section is not complete, but we were able to discover a panel of prints, presumably intended to represent the amateur pictorial work of France. It includes photographs by Paul Bouillay, G. Besson, Vicomte de Singly, A. de Cunha, and G. Roy. Guilleminot Boespflug and Co. exhibit in this section a number of bromide postcards, printed on rotary machines; but the greater portion of this section is evidently the work of the French professional photographers, and much of it appears to have been brought together under the auspices of the *Chambre Syndicale de photographes portraitistes*, a body having the same aims and objects as our Professional Photographers' Association. Among the exhibits which evidently have been selected to show all classes of professional portraiture, are the following:—Maurice Contere, Mathieu De Boyer, Otto, Nadar, Gerschel, J. Poyet, Aug. Peron, H. M. Panajon, Bordeaux, M. Sattagne, Chamberlin, Midgus, Otto (Durand) (Paris), P. Valle, Jules Boucher, Felix (Paris), Nadar, Dangereux, and Ed. Avrie. Among these will be found a number of portraits by M. Nadar of the French pioneers in photography, including Daguerre, Du Haumont, Lippmann, and others. There is also an exhibit of postcards and prints produced on the mangle manufactured in France under the trade mark S. I. P.

Arriving at the entrance court, which opens immediately at Wood Lane entrance to the exhibition, a doorway on the left side admits one to the British science exhibits, at the further end of which will be found a case of instruments by Messrs. J. H. Dallmeier & Co. Ltd., including examples of stigmatic lenses, and specimen photographic lens at various stages of its manufacture. Mr. Valentine, who have the sole rights for issuing postcard reproductions, have a number of kiosks in the grounds, and at these places make special show of their productions in this direction.

The stall of the Lumière Company should on no account be overlooked by the visitor, since it contains a collection of Autochrome transparencies made at Lyons, and which for brilliancy and technical quality are certainly in advance of anything which has yet been produced. MM. Lumière, who appear to have taken a personal interest in making of these results, are to be congratulated upon their selection of subject, and the photographer who has done any Autochrome work will applaud the magnificent technical success of the productions. The transparencies rely upon daylight for illumination, and therefore cannot be properly seen at hours when artificial illumination is necessary. The stall will be found on the right on entering the exhibition from Wood Lane.

### THE ROYAL PHOTOGRAPHIC SOCIETY'S EXHIBITION.

The fifty-third annual exhibition of the Royal Photographic Society will be held at the New Gallery, 121, Regent Street, London, W., from September 17 to October 24, inclusive, and will be divided into the following sections:—I. Pictorial photographs. II. Scientific and technical photography, and its application to processes of reproduction, also apparatus for scientific photography. III. Screen and colour transparencies. IV. Professional and commercial photography. V. Photographic apparatus and material. No collection of wall space are made in sections I, II., and III., exhibitors must fill up an entry form and enclose it with the exhibits. Exhibits sent by carrier must be addressed to the Society's agents, Messrs. Bradley and Co., 81, Charlotte Street, Fitzroy Square, London, and must be delivered, carriage paid, on or before Tuesday, September 1. Exhibits delivered by hand must be presented at the address, unpacked, between 10 a.m. and 6 p.m., on Wednesday, September 2. Any exhibits presented after either of the



will be refused, also any upon which carriage has not been taken in full, and the Society does not undertake to acknowledge receipts of exhibits.

All photographs, except lantern slides and transparencies, must be framed, except in the case of foreign and colonial exhibitors. These must, however, be mounted, and for all accepted the Society provide frames free of charge. In section I. each photograph must be framed separately, and have a label affixed to the back giving the name and address of the exhibitor, the title or description of the photograph, and a number corresponding with that on the entry form; the only inscription allowable on the front of the photograph, picture or mount being the title of the picture and the name of the exhibitor.

The selecting and hanging committee of the pictorial photographs (section I.) is composed of the following well-known workers:—Messrs. W. R. Bland, E. T. Holding, Charles F. Inston, Furley, J. C. S. Mummery, G. A. Storey, A.R.A., and B. Gay Kingston. Entries in this section may be by any process, but no exhibitor may submit more than six.

In sections II. and IIA. the work of selecting and hanging will be directed by the following experts:—Messrs. Conrad Beck, C. P. Ler, A.R.C.Sc., Douglas English, M.A., C. E. Kenneth Mees, F.C.S., A. J. Newton, J. Sinclair, E. J. Wall, and Major-General Waterhouse, I.A. Section II. includes exhibits in scientific photography, together with apparatus used in photographic investigation; also those relating to any photo-mechanical process of reproduction.

Transparencies for exhibition in section IIA. must be varnished, protected by a cover glass and bound round the edges. They must be framed, but the title, author's name and the number corresponding to that on the entry form must be written legibly on the back or binding. These will not be shown in the lantern except by arrangement with the author. Medals will no longer be awarded in section II.

In previous years, a charge will be made for space in section for professional and commercial photography, and application for should be made by letter, not later than July 11, to the Secretary, Royal Photographic Society, 66, Russell Square, London, W.C. The title or description of the exhibits must also be in the Secretary's possession not later than September 8, if it is desired that particulars shall appear in the catalogue. Orders for photographs may be given at the exhibition, but no delivery there will be allowed.

The Central Hall will be reserved for exhibits of photographic apparatus and material (section IV.), and floor space will be let for erection of stalls, all designs for which must be submitted to the Organising Committee for their approval. Entry forms, which when ready, may be obtained, together with full particulars, from the Secretary, Royal Photographic Society, 66, Russell Square, London, W.C.

## Patent News.

*Process patents—applications and specifications—are treated in the Mechanical Notes.*

The following applications for patents were received between May 18 and 23:—

**STEREOSCOPIC APPARATUS.**—No. 10,750. Improvements in and relating to photographic, stereoscopic, and like apparatus. Luiz Augusto Teixeira de Aragao, 11, Southampton Buildings, London.

**FRAMES, ETC.**—No. 10,802. Improvements in photographic processes and in frames for use therein. James Mark Child, 37, Chancery Lane, London.

**FLASH LAMPS.**—No. 10,844. Improvements in flash lamps for photographic purposes. John Theodore Groves, 36, Fitz-James Avenue, West Kensington, London.

**SENSITIZED PHOTOGRAPHS.**—No. 10,887. Improvements in and relating to the colouring of sensitized photographic surfaces. Bernard James Cooper and Ronald Kesterton Inman, 60, Queen Victoria Street, London.

**SENSITIZED SHEETS, ETC.**—No. 10,970. Imparting flexibility to sheets, strips, or strips charged with or carrying chemicals. Self-Develop-

ing Plate Co. and Butler Humphreys, 7, Southampton Buildings, London.

**APPARATUS.**—No. 11,010. Improvements in or relating to apparatus for use in photography. William Edwin Hickling and Thomas Matthews, 111, Hatton Garden, London.

**ROLL-FILMS.**—No. 11,162. Improvements in the mode of and means for developing photographic roll-films. James Wyndham Meek and David Brown Thomas, 77, Chancery Lane, London.

**MOUNTS.**—No. 11,225. Improvements in picture, photographic, and other mounts. Thomas Smith Jacob, Hereford House, Southend Green, Hampstead, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

**TONING PROCESS.**—No. 10,258, 1907. The invention consists in a process of converting images of silver, such as lantern slides or bromide prints, into coloured compounds capable of being dyed, colouring these compounds, and removing the base (or compound) on which the colouring matter was deposited. Silver iodide has been found the best compound for the purpose. The print or transparency is treated as follows:—The silver print, obtained in the ordinary way on transparency emulsions of a suitable kind, is transformed into a print consisting of silver iodide or silver bromide, silver chloride, silver ferrocyanide ( $\text{Ag}_2\text{FeCy}_6$ ), double compounds of silver and copper, or of silver and mercury, or other compounds capable of being coloured directly, whereupon the colouring is effected in suitable colouring baths. After a short time the deposit of the colour on the silver compound will have taken place, whereupon the excess of colour is removed from the gelatine film by a short soaking. The silver iodide prints thus obtained, which in respect of transparency even of the deepest shadows are especially suited for projection purposes, must be subjected to a fixing process for eliminating the silver compound from the picture when used for polychrome photography, which requires completely transparent pictures. If appropriate colouring material has been selected for the colouring, after treatment with thiosulphate of sodium, an insoluble colour picture remains.

Quinoline red may be given as an example of a suitable colouring material which may be used for colouring in a dilution of 1:2000 or weaker, fixing then taking place in an acid fixing bath. Before the colouring takes place the silver is transformed into compounds, which can be removed by the usual fixing medium. In order that no injury to the colour picture may occur owing to the employment of such a medium, only basic colouring materials should be used. Colouring materials of any kind may, however, be used if the precipitation of the colouring material in the form of an insoluble lake or salt is effected by the addition of appropriate substances to the fixing solution. This addition depends upon the nature of the colouring material. When the colouring is effected by means of a basic colouring material, tannin is added to the fixing bath; when colouring with acid colourants, metallic salt solutions are added. Other colourants form insoluble or difficultly soluble iodides, so that an addition of iodide of potassium to the fixing solution leaves behind a colour picture. In any case it is merely a question of adding to the fixing bath (solvent for silver iodide or other silver compounds) those substances which, with the colouring material, give insoluble coloured compounds. Dr. Arthur Traube, 16, Wieland Strasse, Charlottenburg, Germany.

**CAMERA FRONTS.**—No. 2,525, 1908. The object of the invention is to prevent the pushing in of the lens-front of a folding camera before the lens is in the correct position. This can be done both by displacing the lens-carrier and by displacing the lens-panel. Stop pieces are provided in front of a pin which is fixed to the base-board to prevent the pushing back of the lens-carrier. When the lens is returned to its central position the pin can pass through slits which are provided in the stop pieces so that the camera may be closed. Fabrik Photographischer Apparate auf Aktien vormals R. Hüttig und Sohn, 76, Schandauerstrasse, Dresden, Germany.

**STEREOSCOPIC PROJECTION.**—No. 17,955, 1907. The invention relates to a device for looking at stereoscopic projected images, especially

living pictures, in which device the openings for the eyes are alternately covered by a rotating screen or wing, which rotates synchronously with the screen or wing that covers alternately the object-glasses of the two projectors. These latter project on the same spot the images intended for the right eye and those intended for the left eye.

A device, consisting of (1) a frame provided with a handle and with eye openings, and (2) a screen or wing rotating in front of these openings, synchronously with the screen or wing of the projector, by means of an electro-motor placed in the apparatus. The double-leafed screen or wing is directly fixed to the shaft of the motor, the screen or wing being of a semi-transparent red-coloured material, and decreasing in thickness from the centre towards the periphery. The motor consists of a double-T armature rotating in a field winding, so as to avoid iron poles. The armature winding and the field winding are fed through a cable containing several wires placed in the handle of the apparatus, so as to avoid the use of brushes. Marius Nicolai Topp, 3, Horsetory, Odense, Denmark.

**FILM PACKS.**—No. 18,860, 1907. The invention relates to the envelope method of carrying plates for exposure, and particularly to the dark-slide, which is provided externally with a fixed mouth-piece receiving the extremity of the envelope containing the sensitised plate and internally with a movable spring plate ensuring the exact focussing of the sensitised plate and at the same time, by means of a sliding piece acting thereon, the closing of a sliding piece inside the dark slide, so that, when the sensitised plate is in position, it will be possible to take away the envelope from the mouth-piece of the dark-slide without any risk of access of light. The envelope remains fully closed until the moment of introducing the plate into the dark-slide, and is again closed when the exposed plate is removed from the dark-slide. Silvio Mela, 11, Via S. Luca, Genoa, Italy.

**ROLLER-BLIND SHUTTERS.**—No. 25,537, 1907. In this type of roller-blind, for which protection is claimed, the slats are connected by chains, the links or sections of which consist of plates having their ends bent to form hooks. These latter engage with one another so that when the shutter is rolled or unrolled there is relative movement over the whole of the contact surface between adjacent links. Arthur Wells, 65, Alexandra Road, Southend, Essex.

**PROCESS PRINTING FRAMES.**—No. 24,617, 1907. The invention consists of a printing frame of the kind in which equal distribution of pressure is obtained by exhausting air from between the transparent front plate of the frame and the movable back plate. The new arrangement consists of an automatic valve controlling an aperture in the back plate and adapted to co-operate with a pump directly placed on the back plate over the valve. James Pritchard and Harold Pritchard, 167, Rosebery Avenue, E.C.

**STEREOSCOPES.**—No. 5,742, 1908. The invention consists of a collapsible hand-stereoscope, with electric illumination, the source of current for electric miniature illumination being contained in a suitable part of the stereoscope apparatus. The handle is detachably fixed to the base plate by a bayonet joint, and the slide bar is attached to the base plate by a hinge joint. Albert Edward Foote, 5A, Gegensburgerstrasse, Berlin, Germany.

**PHOTOGRAPHIC ARC LAMPS.**—No. 3,700, 1908. The present invention is an improvement on the lamp described in Patent Specification No. 9,574, 1907 ("B.J.," September 13, 1907, page 697), in which pairs of carbons of several arc lamps are placed in front of a reflector and arranged to produce a favourable distribution of the light. In this apparatus the individual carbons are secured to parallel rods or holders swinging about stationary pivots, the carbons belonging to one arc lamp being arranged at opposite ends of adjacent rods, and with their ends directed towards each other. The holders are connected to one another in such a way that, upon rocking one of them, the other holders are rocked through the same angle, whereby all the carbons are simultaneously moved the same distance towards or away from each other. If in this apparatus pairs of carbons of unequal sizes are used, some of the arc lamps will sometimes not be lighted, because the longer carbons are in contact with each other, while the shorter ones have not yet come in contact with each other. A further automatic regulation is impossible on account of the rigid con-

nection of all the carbon holders. Thus, the shorter carbon not be lighted unless they are adjusted by hand. The object of the improvements is to provide an apparatus of this class in which all the arc lamps will safely and automatically be put in operation. For this purpose, the pairs of carbons are not connected with one another, but the carbon holders are connected independently of one another to their common adjusting mechanism. Jean Schmidt, 70, Bleichstrasse, Frankfurt-am-Main, Germany.

The following complete specifications, etc., open to public inspection before acceptance under the Patents Act, 1901:—

**PRINTING PLATES.**—No. 9,500. Process for the production of printing plates. Roux.

**STEREOSCOPY.**—No. 10,493. Method of stereoscopy and apparatus for the application of this method. Balmigère.

## New Trade Names.

**LION'S HEAD BRAND.**—No. 302,062. Cinematograph films bearing taken photographs. George Howard Cricks and James H. Martin, trading as Cricks and Martin, Ravensbury Lodge, Leam Road, Mitcham, Surrey, cinematograph film makers. April 10, 1908.

**LINGRAIN.**—No. 302,161. Photographic papers. John J. Lingrain and Sons, Ltd., Kemble Street, Kingsway, London, W.C., photographic paper and apparatus manufacturers. April 10, 1908.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Bichromated Plates for Copying.

Maybe the reader has tried at some time (says Mr. W. S. I. writing in the "Photographic Times" for May, on the recovery of fogged plates with a bath of potash bichromate and hydrochloric acid) to copy a picture, such as an engraving or pen-and-ink drawing, where it was desirable to obtain a negative containing clear lines on an opaque ground, but having used an ordinary rapid plate, the negative turned out flat, with veiled lines on a translucent ground. This is where a bichromated plate will prove a satisfactory substitute for the special slow contrast plates made especially for copying, and which few amateurs keep on hand. For this purpose any rapid plate can be dipped when wanted, and the amount of contrast it is desired to obtain regulated by changing the strength of the bath, but for copying a 1 per cent. solution of bichromate will probably be found about right. If desired, the plates can be exposed as soon as they are surface dry, doing away with the trouble of drying in the dark.

### Printing on Collodion Paper.

Mr. W. Foster Brigham, writing in "Photographic Scraps" for May, on the new Ilford collodion paper, says: Any of the average negatives will give good prints, but they should preferably be rather more contrasty for black tones obtained in two baths. If warm tones, ranging from red-brown, chocolate-brown, to black, are wanted, printing should be only slightly darker than required when finished, but for double-bath tones printing must be taken much further. The shadows may bronze, but no more should be taken of this. Print until the high lights are well defined. When ready, the untrimmed prints, in any number up to two hundred, are washed rather longer than it takes for milkiness to disappear, time varying, of course, with the number of prints. Since all collodion prints are liable to curl it will be a great saving of time and irritation if this tendency is checked at the outset. To do this put about half an inch of water in the dish, place the prints in it, one by one, face down, pressing each as flat as possible on the bottom of the dish. If necessary, a little water occasionally. When all have been so treated pour the water off and squeeze the prints to remove as much moisture as possible, after which leave for five minutes. At the end of this



minutes' hand washing in constantly changed water should be the soluble silver and the preserving salts.

### Safe Transmission of Photographic Prints.

A strange (writes the editor of the "Photo-Era," in his June number) that workers sending us prints persist in enclosing them in sheets of cardboard with the corrugations running in *one* direction. Photographs sent thus, or placed against one single sheet, seldom reach their destination safely. Prints should first be placed in soft paper, and then placed between pieces of corrugated cardboard the kind which is covered on both sides—with the corrugations running in *opposite* directions.

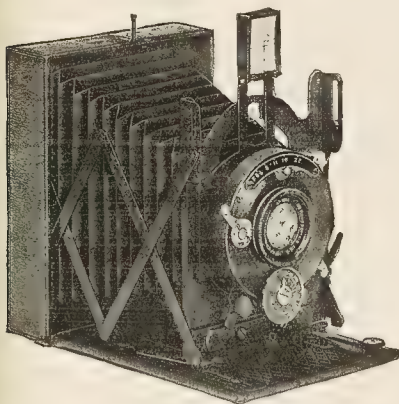
## New Books.

PHOTOGRAPHY WITH FILMS.—No. 82 of the "Photo-Miniature" (Arn and Ward, Ltd., 6d.) deals with this subject, and serves a purpose in dealing with the various modern appliances for development of roll film and the exposure and after-treatment of films. The "Notes and Comments," which have been a commendable feature of the "Miniature" since its foundation, are brightened by paragraphs which are unmistakably Bedding-Whistler as frontispiece we have the reproduction of an English tape by Thomas Bedding, F.R.P.S. Can it be that our friend abandoned his intention of writing the epitaph of the Salon and of appealing to the Selection Committee?

## New Apparatus, &c.

"Vesta" Pocket Camera. Made by Adams and Co., 24, Charing Cross Road, London, W.C.

A camera with a full range of movements reduced to the smallest dimensions is the very strong claim which Messrs. Adams make for their new instrument, the "Vesta." And the use which we have been making of the camera within the past few days fully justifies in our opinion the makers' contention as to the practical facilities provided within the extraordinarily small space of  $4\frac{3}{8} \times 3\frac{3}{8} \times 1\frac{1}{4}$ . The movements are our own, and apply to the smaller of the two sizes of "Vesta" which are at present made—namely, the  $3\frac{1}{4} \times 2\frac{1}{4}$ . We confess that on other grounds than that of bulk we would



the  $3\frac{1}{4} \times 2\frac{1}{4}$  size in preference to the quarter-plate. The conditions are all in its favour, focussing is practically necessary, and a  $15 \times 12$  enlargement from the smaller plate is as sharp as, if not sharper than, that from a quarter-plate at the same angle. The "Vesta" is of the falling case-board type. The lens front is extended on lazy tongs and affixed to the body by attaching two catches to a pair of studs. The front

is kept pressed against the studs by two springs, one of which is shown in the drawing of the open camera. When set up the front is extremely rigid, and is fixed in the exact parallelism with the plate necessary with the modern flat field anastigmat of large aperture. The operation of opening the camera and preparing it for an exposure is the work of a few seconds.

Perhaps the most notable feature of the "Vesta" is the rise of front available both ways of the plate. The camera is built the vertical or "portrait" way of the plate, and the lens panel has a rise of over three quarters of an inch in this direction. But the whole lens front also moves in the other direction, and provides a rise of  $\frac{5}{8}$  of an inch "the landscape way" of the plate. Movements of these dimensions on a plate  $3\frac{1}{4}$  by  $2\frac{1}{4}$  are, as the reader knows, amply sufficient for all but the most extraordinary requirements. In the case of both movements the lens on being pushed down is automatically stopped opposite the centre of the plate.

Of the other movements, the focussing scale is graduated from infinity to two yards, but, as we have said, in the case of a lens of four inches focus, such as that fitted to the "Vesta," the depth of focus or field is very great, and the necessity of the exact use of a focussing scale is far less imperative than when using lenses of longer focus. The finder is of the direct vision type and is affixed to the lens front, with which it moves when raised in either direction, thus giving, in conjunction with the sighting rod on the back of the camera, a better approximation of the displacement of the picture due to the rise of front than when the finder is a fixture. The "Vesta," too, is fitted with two bushes for affixing it, either way of the plate, to a tripod.



The shutter fitted to the camera is the well-known "compound" with time and bulb adjustments and a range of speeds instantly alterable before exposure merely by turning the adjusting disc, say, from the starting point (1 second) to its extreme limit (1/250th of a second).

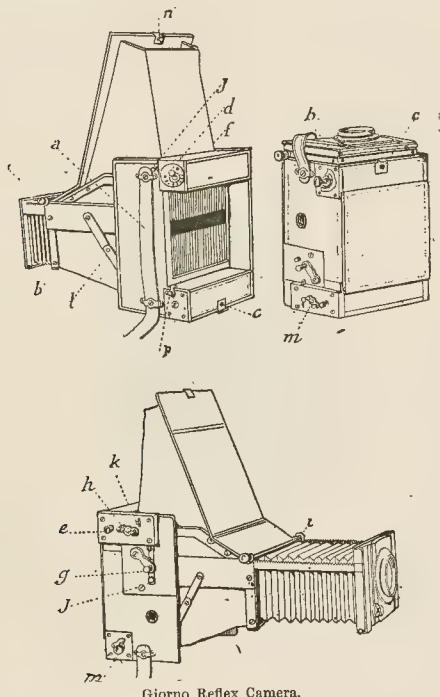
A focussing screen is provided with the camera and is held in the back by a convenient lever clip, which likewise retains firmly but instantly releases the single metal dark-slides, six of which are included in the outfit. Messrs. Adams make the body of the slide of aluminium, the slide only of steel, thus saving a good deal of weight, while avoiding the danger of fog which is involved in the use of an aluminium shutter. The shutter of the slide, after it has been withdrawn, can be fixed behind three clip heads on the back of the camera, and thus secured from risk of becoming bent or damaged.

The whole apparatus is made largely in aluminium alloy, and is covered throughout in black leather. When closed for carrying the whole of the working parts are encased, and the finder, it should be mentioned, automatically turns over and folds itself within the camera as the base-board is shut down. Altogether the "Vesta" is a triumph of construction and a camera which will serve the tourist well amidst the greatest variety of subjects. Complete, with Ross Homocentric  $f/6.3$  and six single metal slides, its price is £10 10s., or with Zeiss Protar  $f/6.3$  £13 15s. In quarter-plate size these prices are £12 and £16.

The "Giorno" Folding Reflex Camera. Made by M. Husson, 207, Avenue de la Reine, Brussels.

The advantages of the reflector type of camera have been so widely appreciated during the past few years, partly, no doubt, in

consequence of the notice drawn to this description of instrument by the exhibition at "The British Journal of Photography," that no arguments need to be assigned in its favour when proceeding to describe still another addition to the many reflex cameras. There is, however, one thing against all reflex cameras, and that is their size. Not an immense objection perhaps in the minds of many, but nevertheless an obstacle to the adoption of a camera of this kind on many excursions when luggage is being cut down to the minimum. One or two recent models of reflex taking a smaller plate have to some extent obviated the difficulty, but a new solution of the problem is provided by a new reflex camera, which so far as we know is the first of its kind to embody the reflex principle in a folding or collapsible camera. We have recently had the opportunity of closely inspecting the camera possessing this good feature. Its inventor and maker lives in Brussels, and it is therefore to be supposed that members of the Photographic Convention, on the occasion of their meeting there in July, will be afforded the opportunity of inspecting an instrument which may certainly be described as a notable advance in photographic apparatus.



Giorno Reflex Camera.

The "Giorno," as the camera is called, is shown in the drawings, from which it will be seen that the portable character of the apparatus is not obtained at the sacrifice of extension: the 9 x 12 cm. camera (a little larger than quarter-plate) allows of lenses up to 8 inches focal length being employed. It closes to a space of about 3 x 6 x 6½ in., being then just about the size and shape of the folding hand-stand cameras of the fall-down base-board pattern, which has become universal since its introduction in America. In opening the camera there are but two movements. The one draws out the lens front, which snaps into position on its two hinged side struts; the other releases the focussing hood, which is practically self-erecting. The camera is closed in the same expeditious way, and as the moving parts do not interfere with the part of the apparatus carrying the sensitised plate the latter can remain ready for exposure. The work of a few seconds, therefore, makes the camera in readiness for an exposure. It should be stated that the bellows extension seen in Figs. 1 and 2 should be racked in before closing the camera.

So far, we have spoken chiefly of the portability of the camera, but its features as a reflex camera entitle it to commendation. The "Giorno" is fitted with a focal-plane shutter with a slit adjustable

up to the full length of the plate. The longer exposures of and 1-5th of a second can be given, often a useful means of full exposure. The higher speeds up to 1-1000th and less are obtained by increasing the spring tension and reducing the width of the slit. A very convenient feature of the shutter is the change from "instantaneous" to "time." The front has a sliding movement, though our own experience is that it should have been provided. The shutter release can be actuated from the side, and the camera is built to receive dark slides, changing slides, or other convenient plate or film holder. Its design and workmanship has impressed us as most practical, and though the instrument which we saw could be improved upon in details its features are certainly those which will commend it to serious camera users. The price of the camera in 9 x 12 cm. size (quarter-plate), without lens, is 270 francs (say £11), inclusive of six single metal plate-holders.

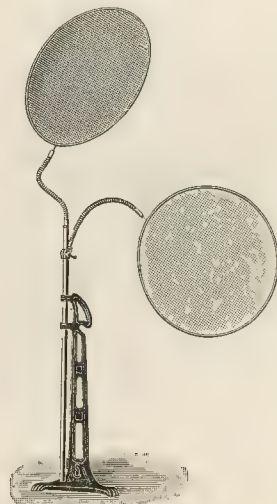
The "Finsbury" Head Rest and Screen. Sold by O. Sichel & Co., 52, Bunhill Row, London, E.C.

At Messrs. Sichel's well-arranged place of business, which, as people may not know, lies within six minutes' walk of Moorgate Street Station and within a stone's-throw of the Old London tramcar route from Bloomsbury and Holborn, we have recently inspected two very useful and novel studio accessories just placed



the market as the "Finsbury" Head Rest and the "Finsbury" Screen.

The former, shown in the first drawing, is a commendable version of the old-fashioned clamp for the human head, in that it provides simply a small surface, against which the sitter can be placed.



does not, by its appearance and application, convey the unpleasant sensation that the operator is planning a new method of garrotting or some other form of sudden death. The "rest" is inoffensive to



at the chief point in its favour is the flexible adjustment by which it is placed anywhere without turning a single screw or using any kind of support. The rest is attached to a support composed of spirally constructed tube, something after the manner of the gas tubing now in common use. In practice the device is convenient. A touch, and the "rest" is placed where it is desired without, as we have said, any fixing whatever. The apparatus is sold at 35s.

The head screen is on the same principle. Like the head rest, the position of either of the two screens can be separately altered by the same spiral tube construction. The height of the screens from the ground is also separately adjustable by a quick-movement. Both pieces of apparatus have a smartness of appearance which certainly represent the acme of convenience in use. The price of the head screen is 50s.

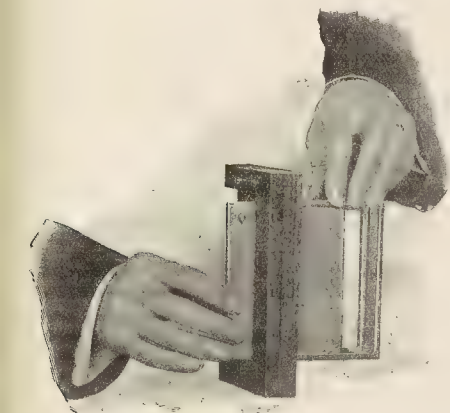
"Blitz" Double Anastigmat, Series III.,  $f/6.8$ . Sold by the City Sale and Exchange, 90 to 94, Fleet Street, E.C.

This is a symmetrical doublet with triple cemented single components. The lens submitted to us is of  $9\frac{1}{2}$  in. focal length and aperture of about  $f/7.2$ , according to our measurements, and it is tested to cover a whole plate, which it does with very good definition. It gives very good results as a copying lens, and only shows a very slight curvature of field with distant objects. It appears extremely well corrected for astigmatism, and it is a remarkable cheap instrument, seeing that a  $4\frac{1}{2}$  in. lens only costs £2 10s. City Sale and Exchange offers to send a lens on seven days' free trial, and will undertake to refund the money if not found entirely satisfactory and up to specification in every way, provided it is returned in perfect order.

Eastman Plate-Developing Tank. Made by Kodak, Ltd., Clerkenwell Road, London, E.C.

The Kodak Co., having done all that seems humanly possible to simplify and standardise the development of film exposures, now places on the market a tank for the development of plates, which for convenience in use is altogether admirable.

Vertical development—in a tank—is, as we have frequently pointed out, a manipulative method of particular advantage to the professional, who often has not the space at his disposal sufficient to allow of his dealing quickly with the results of a day's work in the studio. In summer the evening is usually the time preferred for development on account of the comfort in working, and hence the provision of devices which save time and labour, not to say developer, has been looked into of late



any alert professionals. We are writing now not in special advocacy of a "time" system of development, although studio negatives are of all others the most adapted to the system—inasmuch as they are almost invariably correctly exposed—but we are insisting on the convenience and economy of the tank method as compared with the dish method. Our own practice, whenever we have any number of exposures to deal with, is always that of the tank. It may or may not decide the point at which the negative is removed

by rule—most usually we decide it by inspection, but that, from the practical standpoint, is a matter of no greater importance than the mechanical convenience of the vertical system.

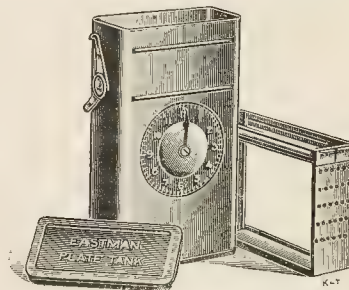
The "Eastman" tank possesses several important qualifications for the duty of thus holding the plates for development. It has strength and lightness. Its substance of nickelled metal fits it to withstand long usage. It provides for the rapid insertion of the plates into their grooves; if necessary, in total darkness—a facility which, so far as we know, is not provided in any similar tank. This is done by the use of a loading block shown in the figure. This block consists of a stout framework in which the plate rack is temporarily fastened (for loading) by means of a clip. Across the aperture of the framework moves a board in which is a slit wide enough to take the pair of plates which go into each of the



six grooves of the tank. The slit registers with the groove of the tank, and the pair of plates have only to be slipped into it to pass into the rack. The slit is narrowed at the ends so that the surfaces of the plates are not rubbed in their passage. The slit is then moved on to a position over the next groove of the rack. This is done by pressure on one of two metal studs, and in this way all six grooves are quickly charged with plates. We can testify to the advantage of this plan in practice. No getting the plates across their proper grooves. In ordinary work it is a comfort, and for panchromatic plates practically indispensable.

The plate-rack is well perforated and provides for proper circulation of the developer. The tank is fitted with a light-tight lid, which is held securely down by a special type of clamp, and lastly, a dial and movable pointer are affixed for use in removing the plates from the developer at the expiration of a given time.

The instruction booklet of the Kodak Company gives formulæ, times and temperatures for the use of the "time" system. The



data will certainly be useful to the photographer in deciding on his own practice, which is bound to vary with the plate employed and the type of negative required. Yet be the method "time" or "inspection," the worker has in the Eastman tank a thoroughly well made and workmanlike piece of apparatus.

The tank is made in two sizes for 5 x 4 and 7 x 5 plates respectively. The former (12s. 6d.) is provided with an adapter for quarter-plates. The latter (16s. 6d.) is similarly provided with adapter for half and  $6\frac{1}{2}$  x 4 plates.

AIRCRAFT OUTFITS.—By the courtesy of Messrs. Dorendorff and Co., Christmas card publishers, of Worship Street, London, E.C., we were recently afforded an opportunity of inspecting an air-brush

department just installed for them by the Airolstyle Syndicate, to whose technical and business manager, Mr. Aufholz, the details of the equipment are due. The installation provides accommodation for four operators, each of whom is provided with a two-brush supply of compressed air, while each is also given a separate hood from which all superfluous spray is quickly drawn and discharged into the outer air. The brushes themselves, which are of the Airolstyle new pattern, and the mechanical accessories which are so essential to economical use of the air-brush on a large scale, have evidently been the subject of very careful study by the technical management of the Airolstyle Syndicate.

THE "MULTISECTO."—Messrs. J. Fallowfield write:—Readers of "The British Journal of Photography" will doubtless be interested to learn that two new ideas have been successfully worked with the "Multisecto" apparatus which you kindly reviewed some few weeks ago. Two of my customers have written to me stating that they find the "Multisecto" excellent for Autochrome photography. The long panel shapes make excellent pictures on half-plates, and, of course, save considerable expense in cost of plates. Again, a professional photographer who bought a "Multisecto" to use with a half-plate Sanderson discovered that by using No. 10 Secto, six views could be taken and printed on postcards, and he has obtained a large number of orders from the stationers and photographers in the town by making a series of postcards each containing six different views, and he is obtaining double the price for these postcards with practically the same amount of work.

## New Materials, &c.

"Challenge" and "Artro" Self-toning Papers and Postcards. Made by The Challenge Works, Macclesfield, Cheshire.

Samples of these materials, to which we have had an opportunity of giving a trial, have given us very excellent results. The "Challenge" papers are made in glossy and matt varieties, and of several tints, such as grey, pale green, buff, and salmon. In all cases we found the papers to give brilliant tints and to assume a very agreeable brown tone in a hypo bath of three ounces per pint. This bath is used for six minutes. If one double the strength be used the tone is purplish, and though our own preference is for the brown tone, there are no doubt many who will wish to take advantage of the range given by the paper.

The "Artro" is a cream-crayon self-toning paper, of very pleasing "carbon" surface. Its manipulation is exactly the same as the papers just described, but its peculiar surface and harmonious effects specially fit it for portrait work and certain landscape results. All the papers are put up in packets (6d. and 1s.), in gross boxes and in sheets. The postcards are also sold in dozen, hundred, gross, and thousand packets. We can certainly recommend application to the Challenge Company for samples and prices of these materials.

In connection with their papers, the Challenge Works, it should be added, are offering prizes to £10 for the best prints on their self-toning and gaslight papers. There is a bonus to the dealer from whom the successful paper is obtained.

Materials for Oil Printing. Sold by Messrs. Charles Roberson and Co., of 99, Long Acre, London, W.C. (and 155-6, Piccadilly).

Messrs. Roberson send us some samples of their pigments and brushes for oil printing, which on trial prove to be eminently satisfactory. The brushes are fitch hair dabbers of the so-called "deer's-foot" form. They are slightly rounded at the end, which is a distinct advantage, and though we used a quite new brush that had not been previously softened by soaking, no broken hairs were to be seen on the print. The pigments are in china pots, which hold a liberal supply, and the black pigment works excellently. It is very finely ground, and readily gives the smoothest possible tint. Used undiluted it is just the right consistency for contrasted effects, but it can be softened to any extent with a special medium, also supplied by Messrs. Roberson. As the smallest possible amount of this medium produces a very marked effect it must be used with caution. Eight different pigments are supplied—black, sepia, burnt umber, warm sepia, indigo, burnt sienna, raw umber, and Payne's grey—and the price is 1s. per pot. Messrs. Roberson offer

to supply any colour to order, so at last a complete palette is commanded by the oil printer. The brushes are in twelve Nos. 1 to 10, and Nos. 12 and 14, the prices varying from 6s. 6d. The medium is 6d. per tube. Messrs. Roberson are supplying hog-hair brushes for large pigment work at prices 4s. to 9s. They are metal-mounted, and hold their hairs very secure. A special varnish for oil prints is also available at 1s. 6d. per pint. It is stated that this should not be used until about three days after pigmenting the print. We have not tried varnishing oil prints, but probably in some cases it may have a very desirable effect.

We note that Messrs. Roberson also supply pigments finely ground in spirit for use in gum-bichromate work, and that they are generalising in colours and materials required by pictorial photographers. Their list contains many useful items, and photographers should make a point of seeing it.

REDUCTION IN THE PRICE OF PLATINOTYPE PAPERS.—The Platinotype Company, 22, Bloomsbury Street, New Oxford Street, announce a reduction in the prices of platinotype papers. It will be remembered that an increase in prices was made a little over a year ago as the result of a continued rise in the price of platinum. The present reduction restores the price to its original level, or, in some cases, to a little over. Under the new tariff a three sheets of "Black" paper, 26 x 20, costs 8s.; Sepia or J. 9s. The full price list and book of instructions is obtainable from the company.

## CATALOGUES AND TRADE NOTICES.

MESSRS. BISHOPS, of 466, Holloway Road, London, N., have issued a new edition of their photographic catalogue, which is full of particulars of practically everything needed by the photographer both in apparatus and accessories. The list is well illustrated, and photographers in the north of London would do well to see a copy, on page 2 of which particulars as to free delivery of goods to London and suburbs will be found, together with special terms of delivery for country customers.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK

FRIDAY, JUNE 5.

Liverpool Amateur Photographic Association. Excursion to Oxford.

SATURDAY, JUNE 6.

South Suburban Photographic Society. Excursion to Epping Forest.

Winney.

Aberdeen Photo Art Club. Outing to Banchoy.

Leeds Camera Club. Excursion to Knaresborough.

United Stereoscopic Society. Excursion to Winchester.

South London Photographic Society. Excursion to Midhurst. Dr. Ever.

MONDAY, JUNE 8.

North Middlesex Photographic Society. Outing to Ely. H. W. Fincham.

TUESDAY, JUNE 9.

Royal Photographic Society. No Meeting.

Hackney Photographic Society. Questions and Answers.

Rugby Photographic Society. Midland Photographic Federation Conference.

Outing to Oxford.

Handsworth Photographic Society. Midland Photographic Federation Conference.

WEDNESDAY, JUNE 10.

South Suburban Photographic Society. Special General Meeting. Portrait Print Competition.

THURSDAY, JUNE 11.

Handsworth Photographic Society. "Printing by the Donisthorpe Process."

A. E. Cope.

London and Provincial Photographic Association. "Photographic Chemistry."

W. H. Dawson.

### ROYAL PHOTOGRAPHIC SOCIETY.

MEETING held June 2, the president, Mr. J. C. S. Mummery, in the chair.

A paper was to have been read by Dr. S. E. Sheppard on the theory of colour sensitising, but owing to the author having been delayed in travelling from Paris to London he was unable to be present. In his absence Dr. C. E. K. Mees gave an informal paper on one-exposure three-colour cameras, in special reference to the design by Mr. Edwin T. Butler, the construction and printing of



Dr. Mees explained by means of an actual instrument. He pointed out that the difficulties in designing a camera of this kind were very considerable. They consisted chiefly in obtaining a place of constant colour sensitiveness. It did not matter much if the actual colour of the plate varied, but if its colour sensitiveness to different parts of the spectrum varied, even within small limits, it was difficult to make a camera to make adjustments for it. Also, considerable care in the optical construction was necessary to secure images of identical size and to avoid also the formation of double images from the two transparent reflectors. As regards the plate, Dr. Mees found it best to use the same plate for all three negatives. He preferred a pinacyanol-bathed plate, since this sensitiser did not alter the general sensitiveness of the plate, and as it was a fairly uniform dye the ratio of colour sensitiveness varied but slightly. As to the arrangement of the filters he had found it most advisable to use the green sensation negative by the direct rays; the red sensation negative was taken at the focus of the image reflected from the first reflector, whilst the blue in that reflected from the second reflector. He adopted the principle of Mr. Butler in making the third negative for the colour complementary to the filter above it, that was to say the first reflector forming the image of the red sensation negative was greenish blue, that for the blue sensation negative was yellow. He explained at some length the methods employed for testing the parallelism of the glass filters and reflectors, and explained that, as constructed in the camera exhibited, the sizes of the image were equal to within 1-100 of a mm. The filters were of "optical plate," and by visual examination. The lecture promoted a brief discussion, in which Messrs. E. J. Wall, C. P. Butler, H. H. O'Farrell, and others took part.

**DOON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.**—At the meeting on Thursday, May 28, Mr. W. R. Stretton in the chair, Mr. Verbury demonstrated "Sinop," a process that might be called the amateur's collotype, without in any way giving an idea that was usually useful to the large professional printer. Briefly put, it consists of first sensitising the specially coated plate in a mixture of potassium bichromate and ammonium bichromate for five minutes, drying and drying in an oven or drying box. The box supplied with light now makes a drying oven at a temperature of 120 deg. to 150 deg. F. for from twenty to twenty-five minutes. Printing is done in a good pressure frame by the aid of a print meter. The bichromate is washed out and the print treated with a mixture of glycerine and water, this forming what is known as the etching bath. Ink is applied with a good printer's roller and take a pull, then from the pull mask, fix in position, and ink up and take the needed number of prints, it being only needed to occasionally treat the plate with the etching bath. The demonstrator went through the process from beginning to end, and passed round a large number of fine prints, some of which were printed during the demonstration by the aid of the ordinary office copying press.

## Commercial & Legal Intelligence.

**WESTERN CAMERA COMPANY.**—Ralph Winter Thomas, photographer and dealer, carrying on business at 69, Stokes Croft, under the name of the Western Camera Company, and residing at 28, Burghley Street, St. Andrew's Park, appeared in the Bristol Bankruptcy Court on Wednesday last. The gross liabilities were £740 4s. 3d., of which only £100 were secured. The deficiency was £419 10s. 3d. The Official Receiver observed that the petition in this matter was filed by a debtor, who was adjudicated a bankrupt on the 13th inst., in his own application. He states that he is 27 years of age, and has been carrying on business at the above address on January 1, 1905, without success. His largest trade creditor advanced him £200 to start with, which he purchased upon credit, at the sum of £238 18s., a photographic business, which had previously been carried on by his father. His liabilities comprise: Balance owing in respect of the business advanced from the father, and in relation to which bills were given and discounted, £127 15s.; balance owing to the trade creditor £100; £186 10s. 9d.; bankers' overdraft, £346 3s. (the bankers secured by the guarantees of the debtor's friends up to £350); accounts for goods supplied for the purposes of the business, £6d.—total, £737 0s. 3d. He states that his drawings from

the business have averaged £80 per annum. Mr. F. G. Tricks was appointed trustee, with a committee of inspection.

**LEGAL NOTICES.**—A receiving order has been made against Scott Stanley Meale, photographer, of Cottishall, Norfolk. The debtor has been adjudicated bankrupt.

A receiving order has been made against Alfred Ernest Priest, photographer, of 51, Sprowston Road, Norwich, carrying on business at 21A, Prince of Wales Road, Norwich. A meeting of creditors is announced for June 6 at the Official Receiver's office, Norwich.

## News and Notes.

**MR. SPEAIGHT'S MARBLE ARCH IMPROVEMENT.**—By the completion on Monday last of the great screen which separates the park from the immense piazza that has been formed at the Marble Arch, and by the opening of the park gateways to vehicular traffic, the work in connection with the Marble Arch improvement scheme is practically finished, for there remains now only some slight work to be done to the inside of the two park lodges which have been re-erected on their new sites just within the park railings.

Now that the whole of the hoarding around the screen has been removed, Londoners at last can appreciate the magnificent effect of this great improvement which has been carried out at the Marble Arch with such remarkable rapidity by the Works Department of the London County Council, who should be warmly congratulated upon their achievement.

The general character of the screen follows very closely Mr. F. W. Speaight's No. 3 design, with the exception that instead of the crescent shape he gave to his plan a straight line has been substituted by the authorities. It is understood that the Office of Works has been responsible for the architectural details of the stone piers, and general admiration has been expressed on their design. The actual length of the screen is no less than 450ft., and there has been some 300 tons of Portland stone used in its construction. The screen consists of twenty piers, the four flanking the Royal entrance measuring each 4ft. square and 18ft. in height, the ten piers that form the three public entrances into the park measuring 3ft. 6in. square and 16ft. high, and the six piers that divide up the screen proper are 3ft. square and 12ft. high. The magnificent gates for the Royal and public gateways in the screen, the design for which was recently exhibited in the members' tea-room in the House of Commons, will not be ready until July next, accordingly temporary wooden ones have been erected in their place for the present.

**THE LATE MR. E. G. BREWIS.**—Mr. Edward G. Brewis, photographer, New Bridge Street, Newcastle, died at his home at Warkworth last week. Mr. Brewis was a native of Gateshead, and in his youth was in the employ of Mr. Hay, who for many years carried on the business of picture dealer in Grainger Street, Newcastle. Afterwards Mr. Brewis turned his attention to photography, and started business in his native town; but he did not remain there long, and came to Newcastle, where he opened premises in New Bridge Street. He was fond of artistic pursuits, and was a prominent member of the Bewick Club. As a photographer he was often employed by the authorities at Armstrong College.

**THE INTERNATIONAL PHOTOGRAPHIC EXHIBITION in Dresden, 1909,** has just sent out its business schedule and notification forms in an edition of over 15,000 copies to the various societies and individuals in all circles interested in the work done by photography. These papers had been forwarded to the photographic industry as early as January last. The notifications from trade circles have already attained such a volume that the space in the large Industrial Hall provided for that purpose is almost all taken. The participation in the other classes will probably be of equally enormous extent, all the more so, as already numerous promises from scientific bodies and others interested in reproduction, professional and amateur photography have been sent in. As latest date for notifications in all classes August 1 of this year has been fixed. This exhibition is arousing great interest outside Germany. In some countries working commissioners are organising travelling societies to enable the exhibition to be visited to the best advantage. In the various German states

a travel fund has been arranged with great success, and there is a prospect of State or municipal support to these travel funds. For the information of the public reports are being made out on the contents of the exhibition, and these, together with explanatory lantern-slide illustrations, will be lent to societies interested free of charge. Information of all kinds can be obtained from the business offices of the exhibition, Neumarkt 1, Hotel Stadt, Berlin, Dresden-A.

**PHOTOGRAPHIC MANUFACTURE IN AUSTRALIA.**—"The Melbourne Age" writes:—Fresh evidence continues to be forthcoming to demonstrate the beneficial effects of the new tariff. Under the Kingston arrangement the duty on photographic material was, generally speaking, 15 per cent., but the Lyne proposals placed it at 35 per cent. against the foreigner and 25 per cent. against Great Britain. The rates, however, were reduced to 30 and 20 per cent. respectively, and with this protection Messrs. Baker and Rouse Propy., Ltd., considered they would be justified in making an effort to start a factory for the manufacture of articles used in great quantities by professional and amateur photographers, but imported from Germany and other countries. Mr. Baker at once sailed for America to make inquiries into the most up-to-date methods of production, and in the course of his investigations he has also visited England and the Continent. He is not expected to return for some weeks, but the firm has been advised that arrangements have been made for the establishment of a factory in Australia to produce many of the articles which are now imported. The works are to be situated at Abbotsford, and it is expected that the equipment will involve an outlay of at least £25,000. Machinery representing the most modern developments has already been shipped from Great Britain and the United States, and on arrival it will be installed without delay. Apart from its industrial aspect this departure will be greatly appreciated by those interested in photography—and they are to be numbered by the thousand—because it means that they will be always able to obtain absolutely fresh materials, a matter of extreme importance in regard to many of the articles in daily use, which are so liable to perish if kept for any length of time.

Mr. Baker has also been successful in negotiating with the largest manufacturers in the world for the production of the latest developments in photographic papers and goods, and amongst others he has secured the formula and rights for the manufacture of Kodak non-curling films, collodion carbon-paper, aristo paper, velox paper, solio P.O.P., and ferro-prussiate paper, and a new but well-known brand of dry plates. The firm has already established a reputation for Austral pearl paper, which is now largely used throughout the Commonwealth, and no effort is to be spared in the new enterprise to place reliable materials on the market. This extension of the field of industry in the Commonwealth is, as usual, meeting with considerable opposition from importers, some of whom have signed a petition to the Senate urging a reduction of the duties. German manufacturers, too, are making extraordinary concessions in the hope of being able to retain the trade in their hands. If they are successful, with the aid of free-traders in our midst, it will mean that the prospects of the new industry will be adversely affected to a very material extent, and that another avenue for the employment of our own people will be considerably restricted, if not altogether closed."

**NON-STRESS PAPERS.**—The Birmingham Photographic Co., Ltd., Stechford, write: With regard to our Non-stress Glossy Bromide Paper, your readers will be interested to learn that we have now succeeded in extending this particular advantage to the matt and silky surfaces also, so that all our bromide will be "Non-stress" in future.

**LONDON AND SOUTH-WESTERN HOLIDAY GUIDE.**—This well-known publication, now in its tenth year of issue, is in no way behind its predecessors in regard to the usefulness of either its letterpress or illustrations. It deals with the popular resorts, both inland and on the coast, which can be reached by the London and South-Western Railway, giving brief particulars of each which should prove useful to all classes of holiday-makers visiting the South of England, whilst the tourist will find valuable information as to the easiest and quickest routes from one place to another, including that part of Northern France which is accessible by the company's steamship

services. Several useful maps, lists of hotels, boarding-houses, and particulars of the various golf links in the district, form useful features of the book, which may be obtained, free, from Mr. H. Holmes, Superintendent of the Line, Waterloo Station, S.E., from any of Messrs. Smith and Son's bookstalls, for the price of one penny.

**LECTURES ON PHOTOGRAPHY AT THE ROYAL INSTITUTION.** The second of Dr. Scott's series of lectures was given on Thursday May 21, when the lecturer first dealt with the theories of development and fixing. To illustrate the reduction of stable salts of metal from unstable subsalts he experimentally showed the reduction of metallic copper from the suboxide, and afterwards demonstrated the action of the various fixing baths that have been employed, such as brine, ammonia, hypo, and cyanide fixers. The production of a Daguerreotype was then demonstrated, and a silver plate was sensitised, exposed, developed, and fixed before the audience, who were perhaps, rather surprised at the ease and rapidity with which the process was carried out. The plate was sensitised for one minute over iodine and then for ten seconds over bromide. After exposure of one minute to daylight under a negative it very quickly developed up over a dish of mercury kept at a temperature of about 60 degrees C., and it was then fixed in hypo. The lecturer then described the calotype, collodion, and albumen processes, and demonstrated the coating and sensitising of a wet collodion plate. The advantages of the grainless structure of the collodion image were pointed out, and some of De la Rue's collodion slides of the moon were shown on the lantern screen.

## Correspondence.

\**Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*

\**We do not undertake responsibility for the opinions expressed by our correspondents.*

### THE QUICK DRYING OF NEGATIVES.

To the Editors.

Gentlemen,—I notice in this week's issue of the "B.J." an article on the quick drying of glass negatives by the use of spirit formalin. I have used both methods many times and agree with the writer of the article that neither proves quite satisfactory. The milkiness sometimes caused by the spirit, as explained in previous articles in the "B.J.," and also the horn-like structure of the film produced by the formalin, certainly spoil the plates if after-treatment is required. The method I adopt when in a hurry is to wash the plate in two or three changes of water and then transfer it to an alum bath (3 to 5 per cent.) for about five minutes until the film is penetrated, which destroys all remaining traces of hypo, then wash in two changes of water to remove the bulk of the alum, surface dry, and stand up against the wall of the place, where the warm draught dries them very quickly. Dry-plates taken place quite as rapidly as by the methods mentioned in the article referred to, the time of washing is also shorter on account of the alum destroying the hypo, and the small quantity of hypo left in the film does no harm, as I have negatives made six years ago and dried by this method which are now quite as good as others dried in the usual way, and the film being harder still more rough usage.

I may add that, as the reason for the rapid drying of negatives is usually to enable one to make prints quickly, it is a good idea to merely rinse the plate after fixing and then press into contact with the film an old spoilt roll-film, with the gelatin removed, and print as if it were a dry negative, of course being careful that no hypo gets on the surface of the celluloid, which the paper comes in contact.—I am, yours very truly,

Glen Road, Wishaw, N.B.

May 22, 1908.

WM. MORRIS.

### THE LATE MR. BEN ILLINGWORTH.

To the Editors.

Gentlemen,—Please allow me through the "Journal," on behalf of myself, wife and family, to thank sincerely the Committee



Professional Photographers' Association, and all those friends out of the profession, from abroad and every part of the Kingdom, for their kind letters of condolence and sympathy, we have received, and are receiving, in the sad and unexpected death of my eldest son, Mr. Benjamin (Ben) Illingworth, who died of the same type of small-pox on March 28 at Neemuch, Central India. The disease was contracted in a travellers' bungalow at Nasirabad with Dr. Coomey, dental surgeon, of London, who also died same, several days after my son. My son, Dr. Coomey, and Reiffar were travelling India at the same time, and the latter who is a photographer, informs me that he evaded falling a victim of the awful disease through being called back to his studio and Higgins) at Mhow, C.I., owing to his partner being ill.

My letters are too numerous to be acknowledged individually, and all to realise through this source our great appreciation of the high regard my son was held in and out of his profession—I am, Sir, very faithfully yours,  
WM. ILLINGWORTH.  
Abington Street, Northampton.  
May 30, 1908.

## Answers to Correspondents.

*Matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 2A, Wellington Street, Strand, London, W.C."* Inattention to this ensures delay.

*Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.*

*Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., Wellington Street, Strand, London, W.C.*

*For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 2A, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 7d. each photograph, to cover cost of registration fee, form, etc. No unmounted copies of each photograph must be sent with the*

### PHOTOGRAPHS REGISTERED:—

Illman, 156, Uxbridge Road, Shepherd's Bush, London, W. *Photo of the French President Receiving an Address from the Mayor of Hammer, and one of the King doing likewise.*  
Mm, 41, Esplanade, Whitley Bay, Northumberland. *Photograph of As Thompson, Esq.*  
Mason, Battle Hill, Hexham, Northumberland. *Two Photographs of Asa in Hexham Abbey.*  
Moster, 141A, Stockport Road, Levenshulme, Manchester. *Two Photos: Ram's Head Hotel, D. Shy. New Mills Church.*

Wood (Mich., U.S.A.).—(1) Apply to Harold Hood and Co., Slide Works, Middlesbrough. (2) We do not think you will do in the way of exchanging photographs. You might try the one of one or two small advertisements.

The lens you name is a good one, but for the work you name could certainly advise you to have one with the larger aperture; the portrait aplanat, of the same maker.

ION.—See answer to "Ed. Plowman," p. 427, last week.

W.—You can prevent further infringement, but not penalise what has already occurred, by now registering the copy.

PE.—The enclosed are the best results up to the present I have been able to obtain by the Kallitype process, as explained "B.J.," date February 8, 1907. The great difficulty I find in getting a good black, and also in removing the yellow on paper made by the sensitiser. I have tried fixing in hypo ways, but have not yet got a satisfactory result. Can you give me any other details or formula whereby I can get good black and white pictures?—H. L. A. FOGDEN.

We have not tried Mr. Thompson's formula, but those given in B.J. Almanac," 1908, p. 832, will give perfect results. In case treble the quantity of citric acid in the developer should remove the yellow stain. The best developer for black tones is

sodium acetate ("B.J. Almanac," p. 833), which, as there directed, must be followed by a bath of 15 per cent. potass oxalate.

IGNORANT.—We cannot say. The regulations vary. Your only course is to inquire of the town clerks of the towns in which you are interested.

J. MILLAR.—The formula is quite suitable for bromide and other developed prints. For P.O.P. or C.C. you should neutralise it with a little solution of carbonate of soda, testing its neutral state with litmus paper. The paste, if properly made, resembles those you name.

COPYRIGHT.—I should be much obliged for you to give me information concerning copyright. I have a shop and make enlargements from any photographs brought in. A few weeks since a lady brought enclosed photograph to be enlarged. I enlarged same and exhibited it in my window. Some time after a gentleman came in and said he had taken the photograph, and had the copyright of it. He demands of me 10s. or the enlargement. Please say has the lady the right to have it copied for her own use. If not, who is responsible for it—myself or she? As I was ordered to enlarge it, not knowing it was supposed to be copyright, could I demand from that gentleman to see the copyright? I would be much obliged if you would give me all possible information.—PHOTO.

Unless the lady took the photograph herself it is not very likely that she is the owner of the copyright; she cannot be unless she paid the gentleman by whom the photograph was taken. The latter is quite within his rights in preventing you from exhibiting the enlargement, and both you and the lady who gave you the order are equally liable. We advise you to give him the enlargement, as this, we presume, is the cheapest way out of the trouble.

D. R. EVEREST.—Electric arc light is unquestionably the most efficient system. There are a number of excellent lamps—Westminster, Janus, Boardman, Jupiter. If you write to any of the firms, whose advertisements in our columns show them to supply requisites for professional photographers, they will send you information.

E. HUTCHINGS.—Certainly we should advise a reflex for a size like half-plate. A twin lens is very bulky. We advise you to get the "B.J." for June 14, 1907, which describes practically every reflex. The lens you name, or, better, one of the f/4.5 anastigmats, of about 9 in. focal length, would be very suitable for all-round work, though we should advise also a symmetrical anastigmat of smaller aperture, say, f/6.8, which is rapid enough for a large proportion of outdoor work, and does not require such careful shading from strong light as the lenses of larger aperture.

C. LANGRIDGE.—You cannot have anything better than a focal-plane folding camera, of which the Goerz-Anschütz is the best known example. See the advertisement pages of the "Almanac."

J. J. (Halifax).—We do not think insufficient washing alone accounts for the trouble. It is more likely that the combined bath was exhausted and was causing sulphur toning. This would continue further on the prints being placed again in hypo. We advise you to see that the bath is in proper working order and has a due allowance of gold for the prints.

BROMPTON.—I have been for some time trying to get a cold sepia tone on bromide prints, but have not yet been successful; the only thing I get is a horrible yellow colour. One of Wellington and Ward's representatives told me that in order to get a cold sepia I should expose my print so as to be able to develop the same right through; this I have tried, and I must say I have got a better result, but still it is not what I want. I am using Wellington and Ward's paper and canvas, and also using their formula for toning and developing metol hydroquinone.

We are not clear whether your query refers to sulphide toning or to the production of warm tones by development. If the former the subject has been frequently dealt with in our pages of late.

AUTOCHROME PLATES.—I am rather interested in colour photography, have been trying to get a really successful photograph, and was rather drawn to your remarks in the "B. J." of April 17, on p. 300 (part of a paper in Mr. Alfred Stieglitz's "Camera Work"). After reading it carefully and then trying the Rodinal developer, the picture came up beautifully strong, but on putting it into the reversal solution (permanganate acid bath) the picture washed off the plate. Though the film did not dissolve, the photograph disap-





# THE BRITISH JOURNAL OF PHOTOGRAPHY.

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duced. (P. 447.)  
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e draw attention to the fallacies to which the use of chemical  
ations in photographic research may lead. (P. 447.)

**EX CATHEDRA.**  
**Colour Photography and Crime.**  
The first instance to come under ore notice of the application of the Anne chrome process in criminology is; is ported from Middlesbrough. At a coroner's inquest tis-week a verdict of wilful murder was returned again man named Howroyd in respect of the death of a wosale on May 9. Evidence for the prosecution was largcid, based on articles of clothing worn by Howroyd whenalic was arrested, and alleged to be bloodstained, and, sons Drake-Brockman produced a number of colour pelled which revealed the presence of bloodstains on the aas the, in question much more clearly than the marks we The, cernible on the articles themselves. These photexceed- were made on Autochromes, of his work in which I really- Dr. Brockman exhibits a number of specimensfault, as present Colour Society's exhibition.

**Colour Transparencies by Artificial Light.**  
A point deserving of notice in salts of to the exhibition of the Society of potash Photographers now being pty. In the "B.J." Offices is the device of the new overcoming the too yellowish light which is g w Bill treats the Osram lamps specially selected for ite of potash Messrs. Sanger Shepherd, for the illumination transparencies, filter the light through a pal-Bill that will In the case of the table frames of Autoch's beyond what Shepherd, and pinatype transparencies a sinew developing been obtained by using pale blue paper Bichromate of of the light from the incandescent lamps. curred from its was first used, but the change to blue, m'ces are alluded after the opening of the exhibition, has ficial that one may suggest the commerciahing, in the new spectroscopically adjusted for use, say, wotography, even gas and electric light. Illumination by iness now before most practical method for showing nuas to whether it chromes, and such a paper might be rdoes it will come should think, for the use of colour worYear.

**Exhibition of Balloon Photographs.**  
One result of the grv restlessness energy with ATION AND prosecuting the studIONS. balloons and air-ships is the exhibitie misuse of chemical graphs which is to take place at Beaver use as an aid to this year. A large number of well-b out of place. intimated their desire to show theairation into a chemical exhibition promises to be of great voted to the collection popular interest. Doubtless this isbe closely observed, and tions of the kind ever held. We irefully noted, while any of the photographs taken from thothers should be checked. Count Zeppelin in the neighbourhteresting and wearisome stance. These are of more to process must be repeated

best, yet they impress upon one the fact that balloon photography opens out a new sphere of influence and usefulness for photography. There can be no doubt that the long balloon photographs will be in great demand all military authorities, and though they are not likely to take the place of ordnance maps, they will prove indispensable supplements to them.

\* \* \*

**Chemical Effect of Light.** A paper, by Dr. G. J. Fowler, on some observations on the chemical effect of tropical sunlight, read before the Manchester Literary and Philosophical Society, contains some interesting information with respect to the power of the light in the tropics. The highest record obtained was on the sea, in the vicinity of the Arabian coast in latitude  $16^{\circ}$  and longitude  $54^{\circ} 8'$ . Here the photo-chemical intensity of the sunlight was forty-two times the record for a bright, dry winter day in Manchester (whatever that may be), three times the highest summer record for the same day. If we remember how powerful the light can be in our own climate in favourable conditions, it is clear that three times a high record means a great deal. It is, however, to be remembered that the comparison is between a sea record and a land one, and the difference between the power of the light on sea and on land is very great indeed, even round our own coasts. The land records do not seem to differ so much, as it is reported that the European localities give very high records, and Trentesina has even been known to excel Calcutta.

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**Royal Observatory.** Wednesday, June 3, was the annual visitation day at the Royal Observatory, where, and the usual crowd of visitors attended to the daily work of the instruments, study the photographic records, and discuss chocolate and cracknels at all in the buildings and grounds. They also had a factory of becoming personally acquainted with the rather attenuated condition—through the big make is. The report does not contain much on the work of the photographers except the fact that the negatives of the eighth satellite of Jupiter was Melotte by the inspection of a photograph on Sunday, February 28, and it was then confirmed by previous photographs and by securing later where possible and April.

\* \* \*

**Sunday.** I, a writer in an American magazine lays way possible a great deal of stress on what he calls lady retouch a stereoscopic effect obtainable on the attends the of an ordinary single lens camera, but it is unlawful to argue from theory only and not in the case. The theory is that, as every point in work on Sunday is argued by a conical beam of light, which to—at present by the focus towards the observer, therefore heard that the two eyes to obtain two distinct reference to the, and, consequently, a stereoscopic Under the old, This is all very well on paper, but in sometimes applied. This is the projected image at the distance in calling on Sunday, the projected image at the distance Act, for you to at our "near point." Taking this from the Sunday, it is impossible for any cone of light which it is illegal at once unless its angular aperture Sunday. But that of  $f/8$  is the absolute minimum If you refer to p. 68 of ten inches and infinitely distant will find an article commonly use a distance of about affects photographers. can be no parallax effects unless Parliament—not yet view, the conditions only prevail will be made with reference. If we study the inverted real adding lens we can get the effect I show that there is no sugges-

tion of stereoscopic relief. Two confused images are seen and their various points can only be combined with a considerable effort. The result is by no means realistic and it has a far greater resemblance to pseudoscopic than to stereoscopic effect. In the camera the effect can only be produced in out-of-focus parts of the image, and it cannot be seen clearly except with a clean glass focussing screen. With a ground glass screen the image that we see is on the screen, the scattering effect of which enables both eyes to see all parts. This is a plane image and therefore parallax, and so-called stereoscopic effect disappears altogether.

\* \* \*

**A Journal of Photogrammetry.** The scientific application of photography to surveying, the literature of which now runs to a very fair number of volumes, is at last to have a periodical publication to itself in the shape of the "Internationales Archiv für Photogrammetrie." This magazine is to appear monthly under the editorship of Professor Eduard Dolezal, of Vienna. The first number includes an appreciation of Colonel Laussedat and of his labours in establishing the science of photogrammetry, and an editorial article on photography applied to the record of monuments. Dr. N. Herz writes on the perspective representation of non-parallel surfaces, and Dr. R. Thiele contributes some notes on metrophotography by means of a kite. The "Archiv" is published by Carl Fromme, 2, Glockengasse, Vienna II.

\* \* \*

**Examination for Cinematograph Operators.** A prospectus of the examinations arranged jointly by the Cinematograph Manufacturers' Association and the Northampton Institute reaches us from the secretary, Mr. J. Brooke Wilkinson. It informs us that the second examination will take place on June 29 and following days; it reprints the questions asked at the written examination already held, but it does not tell what we should very much like to know—namely, the number of candidates at the first examination, and the proportion who have been placed upon the register of certified operators. Admirable as such an examination scheme is, our fears of it from the first have been that the thoroughly efficient man would not think it worth his while to pay the examination fee of ten or fifteen shillings, and that therefore all the examination could achieve would be to certify the just passable men and refuse certification to the unfit. We shall be glad to hear, however, that our fears were unfounded.

\* \* \*

**Diachrome Toning.** Dr. A. Traube's process of replacing the silver image by a dye with the aid of a solution which first converts the image into silver iodide has already been described in our pages, and not long ago we were able to report on the preparations issued by Perutz, of Munich, for the process, which, for producing rich warm tones on lantern-slides, is an excellent one. Dr. F. Novak now, in the current "Photographische Korrespondenz," mentions one or two dyes which he has found to act effectively on the image of the lantern-slide or transparency which has been bleached in, say, a solution of iodine in potassium iodide. Among these dyes are: methyl green, brilliant green, Turkey blue, rhodamin B, chrysoïdin, methylene blue, malachite green, crystal violet, and auramine. Solutions of any of the above are made in water—the strength is not very material—and the bleached slide allowed to soak until of full intensity. Basic dyes are best for the process, as a weak bath of acetic acid completely clears the gelatine of them. The slide can be left with the silver iodide in the film or the



ter fixed out, for which latter purpose some tannin and sodium acetate should be added to the ten per cent. hypodermic solution in order to fix the basic dyes.

\* \* \*

**New Developer.** Dr. Georg Hauberrisser, in the current issue of "Photographische Korrespondenz," describes a new substance named Pyramidol, said to be the makers, the Brugg A. G., to be a chemical compound of hydroquinone and paramidophenol. As regards the development, there is not much to choose between Pyramidol and the mixture of its constituent bodies, but Dr. Hauberrisser states that in suitability for dealing with over-exposures by the addition of potassium bromide, the new developer is of quite exceptional character. A suitable formula is:—Pyramidol, 15 grains; soda sulphite, 10 grains; potassium carbonate, 160 grains; water, 7 ounces. This, with a normal dose of bromide, developed a correct exposure in four minutes, whilst another plate which had received sixteen times the correct exposure was treated with the same solution dosed with four times the bromide. Development took nine minutes, and gave a negative in every way as good as that correctly timed.

### THE PROJECTED POISONS ACT AND PHOTOGRAPHY.

The House of Lords clearly take great interest in the safety of the public in so far as the sale of poisons and poisonous substances is concerned. Each year—for the last four or five—Bills have been introduced to amend the Poisons and Pharmacy Act of 1868—the one now in force—but they have not become law. This year a fresh one (as intended by the select committee) has been brought in, and was printed and issued to the public a couple of weeks ago. It is entitled "An Act to regulate the sale of certain poisonous substances and to amend the Pharmacy Acts." Many of the substances employed in photography are of a more or less poisonous nature, and two or three of them deadly poisons, it is not altogether surprising that some dealers in photographic requisites, more particularly professional photographers in country places, who sometimes supply amateurs with small quantities of chemicals, may be a little concerned as to how any new law relating to the sale of poisonous substances may affect them. Recently we have received several queries on the subject from different correspondents in the country, and therefore, for their information, we may point out the present situation.

The first clause in the new Bill reads as follows:—"Schedule A to the Pharmacy Act, 1868 (which specifies the articles to be deemed poisons within the meaning of that Act), is hereby repealed, and the schedule to this Act shall be substituted therefor." On comparing the two schedules we see that all the bodies mentioned in the 1868 Act are included in the new Bill with several additions. These latter, with one or two exceptions, are but remotely connected with photography, though mercuric iodide and mercuric sulphocyanide are certainly "photographic chemicals." In the 1868 schedule corrosive sublimate is named and in the new one is also included, with the addition of "preparations of corrosive sublimate." It would therefore be illegal to sell any solution or preparations, frequently used for the intensification of negatives, unless the vendor is a certified pharmaceutical chemist. It is a little strange that in the old Act, as well as in all the projected Bills for its amendment, the antiquated name, "corrosive sublimate," is still retained for bichloride of mercury.

The second section of the new Bill repeals a portion of the old Act, so that it does not now restrict to pharmaceu-

tical chemists the sale of poisonous substances containing arsenic, tobacco or alkaloid of tobacco for use exclusively in connection with agriculture or horticulture if the person so selling them is duly licensed for the purpose under this section by a local authority and conforms to any regulations as to the keeping, transporting, and selling poisons under this section. Hitherto the sale of these substances has been confined solely to pharmaceutical chemists, and the Pharmaceutical Society has at times prosecuted seedsmen, ironmongers and others in agricultural districts for selling weed killers, sheep dips, etc. It will be noted that a licence to sell these bodies will be required from the local authority, and part 2 of this section enacts that, before granting any licence, the local authority shall take into consideration the reasonable requirements of the public in the neighbourhood. It will thus be seen that the local authority will have the power to withhold a licence if it thinks fit.

In the case of pharmaceutical chemists having more than one shop, and in the case of branches of companies, there must be conspicuously exhibited on the premises the name and qualification of the person by whom the business is conducted. This to most persons will appear a very satisfactory regulation.

Section 5 of the Bill relates to restrictions on the sale of certain mineral acids. Those named are sulphuric acid, nitric acid, hydrochloric acid, and soluble salts of oxalic acid. It will not be lawful to sell any of these poisons unless the vessel containing them is distinctly labelled with the name and address of the seller, as well as the name of the substance, and the word "Poison." The penalty for infringement of this section is a fine not exceeding five pounds. This is a very reasonable and really necessary restriction with which no one can find fault, as so many accidents have happened through vessels containing these poisons not being duly labelled as to their contents. It will be noted that among "soluble salts of oxalic acid" is included the neutral oxalate of potash which is somewhat largely used in photography. In the Schedule A of the 1868 Act, and indeed that of the new Bill, oxalic acid only is mentioned, but the new Bill treats all soluble oxalates as poisons; hence oxalate of potash will have to bear a poison label.

After all there is not much in the new Bill that will materially interfere with photographic dealers beyond what is done by the present Act. Nearly all the new developing agents are poisons, so is pyrogallol acid. Bichromate of potash, too, is a poison, and deaths have occurred from its being swallowed, but none of these substances are alluded to in the Bill.

Taken altogether there is little, if anything, in the new Bill that will cause inconvenience in photography, even if it becomes law; but with the mass of business now before Parliament it is a little problematical as to whether it will be passed at all this session. If it does it will come into force the first day of January next year.

### PHOTOGRAPHIC INVESTIGATION AND CHEMICAL EQUATIONS.

SOME time ago we commented on the misuse of chemical equations, and a note on their proper use as an aid to investigation may, therefore, not be out of place.

The first stages of an investigation into a chemical photographic process should be devoted to the collection of facts. The process itself must be closely observed, and its various features and phases carefully noted, while any observations made previously by others should be checked. This is, perhaps, the most uninteresting and wearisome part of the investigation, for the process must be repeated

many times so that one may be able to distinguish between characteristic and accidental effects. Further, it is necessary to try every variation of the process that can be thought of, even though one may feel confident that many of the possible variations can have no effect at all. The very fact that the process has not been satisfactorily explained before shows that some minor matter has been overlooked, hence we cannot afford to neglect any details.

At a certain stage what appears to be a clue is struck—one that is sufficiently probable to enable the worker to build up a theory. If this theory is correct then certain reactions must take place, and if these reactions really occur then they must do so in accord with this or that equation. With a little arithmetical juggling it is possible to explain anything by an equation, and with a little knowledge of chemistry it is generally easy to get a considerable amount of plausibility into several different equations. The next process is to test these equations and find out whether the products that they suggest should be formed can be found and identified. If they can, the next step is to test whether the reactions tried are sufficient to explain everything that has to be explained. If these tests fail then we must try back. It is necessary to build up some more theories on the original clue, and if they all fail, to go back still further and look for another clue. Chemical equations are thus useful to the investigator as aids to the testing of a theory. They are not proofs, for the mere fact that the two sides of an equation are equal to one another means nothing. It does not show that it is correct, for an untrue equation will "equate" just as well as a true one.

At the end of the work it should be possible to describe by equations what reactions occur, provided every detail has been proved; but, in photography, we know so little with regard to the fundamental material that we employ that any very definite result is seldom reached. Some processes are conducted upon the latent image as a foundation, others upon a "printed-out" image, and some upon the developed and fixed image; but in none of these cases do we know precisely the nature of the image upon which we are working. We have to form an hypothesis somewhere and work upon this as a basis, hence the expression in the shape of formulæ of the reactions that occur is

nearly always deceptive. Such empirical formulæ have uses to other investigators, but they are very apt to deceive students who have not arrived at the stage of discreet scepticism of the mature worker, hence should never be given without a note of warning.

Another fact that renders it almost impossible to arrive at true final equations in photographic work is the peculiarly obscure nature of many of the compounds that one meets with. In many processes some one or other of the obscure brown oxides of chromium is met with. There are such doubtful compounds that it is not even easy to say that they are oxides. In the case, again, of sulphide toning, an article by Mr. Carnegie that we published some time ago showed that the final brown image is a so-called compound of silver sulphide and gelatine of a very unusual nature. Such soluble sulphide compounds are in no means well understood, and the formation of an image expressing the effect of sulphide toning is therefore at present a task beyond the ability of the most competent chemist, though it is probably often tackled without hesitation by the amateur. Then, again, in the majority of photographic processes we meet, sooner or later, with the use of the mysterious photo-haloid silver compounds described by Carey Lea, but not yet understood by any one, and in all probability we encounter also other apparently analogous compounds which neither Carey Lea nor any one else has described. In fact, at the end of a photochemical investigation the investigator is generally more or less in a state of melancholy bewilderment. Instead of writing equations that will describe all he has found out he is more probably wondering when he will learn something about the silver halides, and when he will understand gelatine.

The use of equations as a chemical shorthand means of describing known and proved reactions needs no comment. Without them chemistry would be an impossible science, but the misuse of speculative empirical equations should be carefully avoided. Though sometimes used as speculative bases of argument and experiment they are very frequently deceptive, even to the user, for often a very expert chemist can tell the difference between a probable and a quite impossible equation, and much may be wasted in testing impossibilities.

## THE PARIS PHOTO-CLUB SALON AT THE VOLNEY ART CLUB.

THE opening of the French Salon has, unhappily, been announced too late for the usual foreign contributions. Most of the English pictorialists found themselves unable to respond at such a short notice to the special invitations sent by the Photo-Club Committee. Consequently the list of the English workers represented at the Paris Salon is small, and comprises very few invited guests. We find in the catalogue the names of Mr. Bagot Molesworth, Miss Baird, Mrs. Barton, Miss Caswall Smith, Messrs. Cocks, Croke, Dudley Johnston, Gear, Job Latham, Staddon, Miss Stevenson, Miss Warburg, Mr. J. O. Warburg, and Messrs. Warner and Wickison.

Other countries are represented as follows:—America, by Miss Buermann, Mr. Coburn, Mrs. Käsebier, and Mr. Steichen. Holland, by Messrs. Arendsen, Boer, Brok, Eilers, Huysen, Idzerda, De Jonge, Kauffmann, Loeb, Lons, Navta, and Meinberg. Belgium, by Dr. Cardyn, MM. Gaspar, Geerts, Tekx, Misonne, and Van der Aa. Germany, by R. Dührkoop, Fischer, Professor Van Jan, Baron de Meyer, and Welcker. Austria, by Dr. Mikolasch.

The only oil prints in the English collection are those we kept

over from the preceding oil-process at the Paris Photo-Club's rooms. Mrs. Barton, Mr. Job, Mr. Croke, and others are still faithful to the carbon process. Platinotype reigns supreme amongst Americans, though some of them use a dash of gum on the top. The lemon-peel of the national style of close framing and December fog effects. These frames are meant to set off the heavy grained style of sombre print—a liberal coat of varnish. But what would the walls of the exhibition room look like with rows of such funereal squares about?

On the contrary, Baron de Meyer and Mr. Coburn have adopted the actual French style of framing, with a pale or white wood-baguet and cream coloured or Japan tinted mounts.

Mr. Steichen either frames close or uses a rather elaborate mounting scheme, though lighter than his picture. His style of work can well stand it.

I admire Mr. Coburn for the honesty with which he adheres to his principles. This year his large pictures (Notre Dame



pted) undoubtedly show no signs of personal intervention ; Mr. Bernard Shaw will have cause to rejoice. On the other hand, let us discreetly accept the legend of the ichen straight print ; it soothes the feelings of the Secession- ists, and does not disturb Mr. Steichen in the least. His six- ictures, either because he has or has not intervened, are- erb, and have deservedly been given the centre of the- icipal panel between Mr. Coburn and Baron de Meyer, who- some very fine work that has already been hung, I believe, the Meyer-Coburn exhibition lately. The prominent exhibitors of the French section are the same- have kept the foremost rank for the last five or six years— a few desertions—such as that of M. Grimprel, for example. ew promising pictures may be found by comparatively new- ickers, such as M. Billard, Mdle. Milton, and M. Poson- ; but nothing decidedly striking arrests the eyes of the- tors outside the work of Puyo, Besson, Dubreuil, Le- ue, Hachette, Bergon, Mdle. Laguarde, and a few others. ne thing may be said against the French school. Its average- of picture is too small for a big room like the Volney's.

De Meyer's frames, which looked quite huge when the panels were being composed on the floor, are just the right size, but not more, when on the wall. But this is rather a dangerous question to bring up. What would the Salon hanging committee say if all the exhibitors presented their whole-plate pictures surrounded by frames twice and a-half as big as the print? Two rows of such big frames are all that could be placed over a cimaise, and then the second row will be high ; a third would result in skying, with the usual consequences—a bad time for the hanging committee on the day of the "Vernissage."

In favour of the French school, I will say that at every succeeding Salon it shows a marked progress in the rendering of values. And this is especially interesting to note when it has become the fashion in other circles to scoff at the time-honoured principles that have for centuries been followed by the very first artists in black and white.

I sincerely wish I could feel as many pictorialists do, or pretend to, on this same subject. It would save such a lot of study, trouble, and disappointment.

ROBERT DEMACHY.

## THE EXHIBITION OF COLOUR PHOTOGRAPHY,

step taken by the Society of Colour Photographers' in hold- a second exhibition, has been generally approved by those- have visited 24, Wellington Street. As mentioned- er "Ex Cathedra" the illumination of the autochrome and- er transparencies by reflected light has been improved by- ing a pale blue paper from which to reflect the light of the- am lamps. The latter alone is palpably too rich in yellow- red, the effect of which depresses, in particular the proper- dering of the greens. This applies equally to all kinds of- isparencies, but the use of the blue paper has given a very- ch improved rendering. Before quoting some opinions of the- ss on the exhibition, attention should again be drawn to- fact that the exhibition remains open daily until June 27,- 10 a.m. to 8 p.m. (Saturdays, 10 to 5). A charge of six- pence admission (which includes a catalogue) is made by the- ety.

he "Times" says: "Some of the still-lives, like those of Mr. ry J. Comley, and the flowers of Mr. Samuel Manners, are- sing. Mr. E. A. Burchard imitates impressionist water-colour- essfully, and enjoyable things are sent also by Mr. Theodor Heuss, C. Donaldson, and Mr. W. L. Bayley, while the Rotary Photo- ropic Company exhibit some vivid portraits."

he "Westminster Gazette" states: "Though only six months- e elapsed since the first exhibition of the Society of Colour Photo- ographers, yet there is a very marked improvement in the quality- he work. No new processes are shown, but the older ones are- ently becoming better understood and more completely mastered- her exponents. Some prints by Mr. Samuel Manners, according- he catalogue, are by a "process not stated," but look remarkably- examples of the autotype process, brought to a very high state- erfection. Here, in our opinion, we have the gems of the whole- ection. The colouring is perfect, both as regards truth and the- acy of the gradation, while the detail and the drawing are such- an only be produced in the camera."

he "Morning Post" says: "Mr. Comley displays several excel- examples of his tri-carbon prints, and Mr. Samuel Manners shows- e exceptionally neatly rendered flower and fruit studies; one of- best purely imitative prints on the walls being this exhibitor's- iles" (No. 68)."

The "Daily Telegraph" states: "One may here compare examples- of the following processes—viz.: Three-colour carbon, pinatype, Uto- bleach-out paper, Sinop, bichromated size and pigment, Autochrome, and Sanger-Shepherd. The worker in his anxiety to exploit the- colour rendering powers of the process, selects objects showing bril- liant colour. Possibly just at first these bright pictures may catch- one's attention on entering the rooms, but after a little time the- quieter subjects commend themselves by their force of simplicity."

"Nature" remarks: "The application of Autochrome plates to- photomicrography is well exemplified by Drs. O. Rosenheim and H. R. Hurry. These gentlemen also show photo-micrographs of the- starch grain itself, and the area of the black filling between the- coloured grains is larger than one would have expected, probably- larger in the particular plate photographed than in many other- plates."

The "Pall Mall Gazette" writes: "It is a most interesting show; not, perhaps, because of any strikingly novel improvements with regard to processes, but rather by reason of the suggestions which such an exhibition as this must make to the photographer as to the course of future progress. The general standard is high—a good deal higher than last year—if everything be taken into considera- tion. There is an encouraging tendency to abandon such subjects as those made up of a couple of dozen of the most brilliantly coloured objects the photographer could collect from house and garden, and to aim rather at the pictorial representation of land- scapes and figure subjects. This, of course, is a great move in the right direction, a move absolutely necessary if colour workers are to combat the view of the sceptics to the effect that colour photo- graphy, while providing most useful records and descriptive docu- ments of the objects represented, will never satisfy the require- ments of the artist. The pigment films supplied by the Rotary Company are evidently very popular. The Secretary, Mr. H. J. Comley, is easily first for work by this process. After a long pause at the 'cucumber, orange, and blue tablecloth' stage, he is progressing in the right direction, and his landscape work shows considerable promise. Some of the best work shown is that by Mr. S. Manners, who probably has very good reason for not stating the process used; the colours are certainly excellent, and are never violent or crude."

ESSRS. RAINES AND Co. have just added to their well-ordered- izing and printing works at Ealing, W., a new building specially- apart for carbon work. This separate department includes two- x-rooms, each 40 feet long, and allows Messrs. Raines to deal

on any reasonable scale with a process in which they have for years- past been regularly turning out most excellent work. Their greater- accommodation will thus allow them to retain their standard of- quality while dealing with the largest orders in carbon.

## BRUSSELS—THE VENUE OF THE PHOTOGRAPHIC CONVENTION.

MEMBERS of the Photographic Convention of the United Kingdom have doubtless read the official handbook, perhaps have studied Black's "Belgium," or the better Baedeker's "Belgium," yet I doubt if they have gained an impression of the Belgian

that is, the south-east quarter of the town—is THE essential part of Brussels. The ground begins to rise steeply as it goes (eastward) across the centre red line which crosses the map. The old streets, the "Grande Place" (which is the



In Wauxhall Park, Brussels, close to the Headquarters of the Convention.

*Photographs by G. E. ...*

capital, where, under the presidency of Sir Cecil Hertslet, the Convention meets from July 6 to 11. It is not easy for a guide-book to give a general impression of a big city: the detail, as in many a photograph, overpowers the essential features. Until a week or two ago I was in the same position. I had read the guide-books, studied the articles of MM. Vanderkindere and Delevey in the handbook, hung over the map of the city, but still had a hazy idea of how, as a Conventionier, I should quickly become familiar with the parts of Brussels most worth seeing, and how I should use the really few hours which are left over to the Conventionier from the official programme of papers and excursions. Therefore, finding myself in Cologne with twenty-four hours to spare on the way back to London, I made a small detour from the direct way to Ostend, and spent a day and a night gathering a first impression of what Brussels is like. The map of Brussels in the Convention Handbook shows the town proper—that is to say, that enclosed by the broad green boulevards, which are the glory of Brussels. Run the finger from the Gare du Nord (A2) to the Gare du Midi (D4) and you get a convenient base line of division across the city. This line commences with the Rue du Nord, continues as the Boulevard Anspach, and ends in the Boulevard de Hainaut. A horizontal line across the map runs from north (on the left) to south (on the right), so that our base line runs from north to the south-west. The part of the town above the Boulevard Anspach on the map—

of Old Brussels), lie below this line on the map (i.e., south). The ramparts, the modern art galleries, royal palaces, Palace of Justice, and other Government buildings—all very imposing—stand at the top of the hill up which one ascends

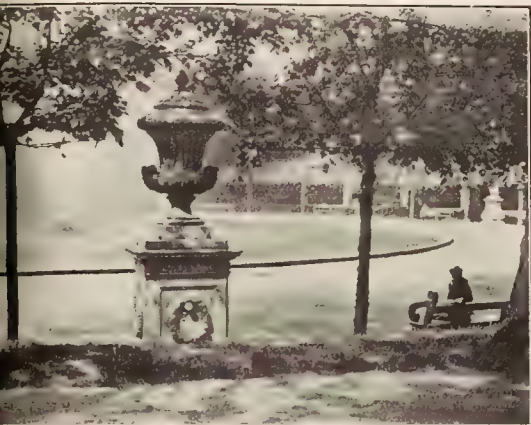


Garden Restaurant, Wauxhall Park, adjoining the Headquarters of the Convention.



such streets as Rue de la Montagne, Rue de la Madeleine, Rue de Ruysbroeck. The electric cars, following the longer and more picturesque route of the boulevards, take one quickly from the lower to the higher town. As the railway stations are at the bottom, and the "Cercle Artistique," the headquarters of the Convention, at the top of the town, it doesn't matter much to one's hotel is, so far as avoiding the hill climb is concerned. The lower town is, of course, the business part and

Those beautiful old buildings, the Hotel de Ville and Hotel du Roi, looked down on hundreds of market carts from the country, ruddy farmers and peasant women, and the buyers of fruit and vegetables. The market spreads through a narrow street to either side of the Stock Exchange, and even out into the Boulevard Anspach. The countryfolk have been there for goodness knows how long: scores of their dogs, tied to the carts and barrows which they have pulled to the market,



The Park of Wauxhall, Rue Royale, Brussels. The Headquarters of the Convention are in this Park.

noisier. Going back to the Convention map, the visitor can take it that within the area included by our line (between the two railway stations) and the Boulevards in Botanique (A2), Bischoffsheim (B1), Du Regent (C1), Du Midi (D2), and Du Midi (D4) are to be found the sights of Brussels. The parks in the suburbs are very charming, but I am speaking now of the city itself.

make a babel of canine conversation. . . . . Towards eight o'clock there is a move. The dogs are reharnessed, the vendors rapidly disperse, the last few laggards are hustled away by a quiet hint from the police, and before the last cart has turned the corner of the Grande Place, a small army of sweepers is at work, and a minute or two later all is tidied up for the flower merchants, who arrive about nine to take up



Verandah and Garden of the "Cercle Artistique" where the meetings of the Convention will be held. The "Cercle Artistique" is in the north-east corner of Wauxhall Park.

They tell you Brussels is a miniature Paris, but it accomplishes all that a great metropolis achieves, because, though it is small, it makes good use of its space. In the busy centres of the lower town one must be on the alert to keep up with the city's kaleidoscopic movements: Brussels is a veritable change artist. For example, at six in the morning the scene in the Grande Place just behind the Exchange (B3).

their quarters for the day. On Wednesdays the Stock Exchange meets, and the steps of the Bourse, which an hour or two before were littered with rhubarb stalks and vegetable debris, are peopled with smart, frock-coated gentlemen, who pause from business to take an occasional bock or light déjeuner at the innumerable cafés in the Boulevard Anspach. I don't know about Paris in miniature, but the scene, as I saw it in its

phases, was like Covent Garden Market put down outside the Mansion House, with the Dogs' Home from Battersea transplanted to the corner of Threadneedle Street.

A place to linger in at any hour of the day, when one has a camera, is this corner of Old Brussels, the Grande Place. Nowhere else in Brussels is there its equal. The palaces of the upper town are splendid buildings, but do not approach the beauty of these examples of mediæval architecture. Next to them in point of attractiveness to the stranger are the boulevards—not the Boulevard Anspach and other boulevards of shops and restaurants, but the the avenues already mentioned as completely encircling the town. The hilly position of Brussels makes it a tiring place if one keeps on the move from one part to another, but the boulevards afford the most delightful relief from the noise and heat of the streets. The shade and coolness of the country, accessibility to varieties of refreshment, a ceaseless procession of les Bruxelloises, as well dressed as any women in Europe (if a little loud to English taste)—can tired and thirsty man desire more than this? Pres-

suming he does, then I can lead him to it. In the Waux Park (B1 and C1) he will find a still more pleasant retreat of miniature Park of Versailles, with only the so of a passing electric car to compete with the splash of the fountains, and near at hand, as shown in second photograph, a restaurant-garden, where every evening in the summer a band plays, and the visitor can experience the enjoyment of a scene which England can rarely offer him. Unfortunately, my photographs can only suggest the appearance of the garden in the evening when thronged with people. This garden, the coolest and most delightful spot in all Brussels, adjoins the club of the Cercle Artistique where the meetings of the Convention are to be held. I have been privileged to be in the confidence of my friend Br in many Convention matters, but the one thing he has told me is how he proposes to entice members away from Park of Wauxhall and its orchestral wine-garden to the evening meetings of the Convention. I suppose he doesn't know.

G. E. I

## THE CHEMISTRY AND PHYSICS OF COLLOIDS.

[The following is the text of the first of four lectures now being given by Dr. S. E. Sheppard at the L.C.C. School of Photo-Engraving, Bolt Court, Fleet Street, on Thursday evenings at 8 o'clock. The syllabus has already been published in our pages, and, by courtesy of the lecturer and of Mr. A. J. Newton, the Principal of the Bolt Court School, shall publish the succeeding lectures.—Eds. "B.J."]

THE specialised study of colloids and the word "colloid" itself were introduced by Thomas Graham. In his fundamental investigations on the diffusion of dissolved substances (Phil. Trans., 1861, p. 183) he draws attention to the great difference in properties between easily crystallisable bodies, such as salt, sugar, etc., and bodies such as gelatine and albumen. Whilst the former diffuse rapidly and pass with ease through animal membranes, the latter diffuse very slowly, if at all, and cannot pass through membranes. Graham went so far as to speak of two different worlds of matter, the crystalloid and the colloid. We shall see that subsequent investigations have shown that here, as elsewhere in nature, unity of phenomena prevails, and that transition stages exist which do not allow us to contrast so absolutely these apparently opposed states of matter.

Before dealing with particulars, let me put before you some points indicating the far-reaching importance of colloids in the arts and industries, and, above all, in life itself. Briefly, it may be said that all life processes take place between bodies in the amorphous or colloidal condition. Hence the exact investigation of this condition is of quite special importance to the physiologist and biologist, and in consequence it is to them that we owe much of our present knowledge in this borderland of science. But (of the importance of colloids in technics and industry) much besides. Here are some of the industries more or less dependent on the chemistry and physics of colloids:—The manufacture of earthenware, porcelain, and so forth, and of ultramarine; the iron and steel industry, for we know now that the principal varieties of steel are colloidal solutions in iron of certain additions, principally carbon. Again, coloured and milk glass, enamel ware, and rubber goods—you will see that I am already drawing nearer to photography—tanning and dyeing, are industries whose scientific bases must necessarily be of importance to the scientific photographer. Paper, the general groundwork for your art, is a colloidal substance, and the coatings you put upon it, the processes to which you submit it, are colloidal, too. That being so, it may well be asked, what is the exact definition of "colloid"? A certain maxim has it that distinctions are invidious, not to say odious. It is, however, the business of science to distinguish and define, in attempting which she is constantly met with the continuity of natural

phenomena, which refuse to be shut up in watertight compartments. Hence our classifications are at the best provisional and this applies especially to the subject in hand.

### Solutions and Colloidal Solution.

Before attempting definitions and classification for the colloid state, I must ask you to briefly consider prevalent notions of the nature of solutions. In a solution of, say, salt and water we have evidently a very intimate mixture of the components. We express this by calling it a *homogeneous* mixture, meaning that the smallest portions we can divide it into show the same properties as the mass. Such a mixture under the highest magnification with the microscope shows no resolution. I believed that the salt exists in the solution in its ultimate molecules, too fine for our present extension even of the sight sense to perceive. The properties of the solution, however, may be predicted from its components, whilst in a chemical combination a new body arises, with new and distinct properties. Here also closer investigation shows that the passage from solution to chemical compound is only one of degree. As stated such a solution the salt moves freely or diffuses; to the extent, however aided, the solution appears clear. But I have heard of a "solution" which shows practically no diffusion, and is yet clear by transmitted light. Faraday and, following him, Tyndall showed that on projecting an intense beam of light through such apparent solutions as the "purple of Cassius" the path of the beam became illuminated, the scattered light at the same time being polarised (distinction from fluorescence). This method of demonstrating optical inhomogeneity is not, however trustworthy, as, owing to its great sensitiveness, small quantities of dust may lead to false conclusions. Still, the majority of "colloidal" solutions may be roughly recognised by this means. It must be remembered that no particles can be seen with the microscope. We know that very fine powders form suspensions, in which the particles are microscopically visible. These differ from colloid solutions or hydrosols as follows:—

### Hydrosols.

(1) The much finer state of division of the colloid particles, presenting an enormous free surface.

By definition, a suspension—a two-phase system—the



of which are less than  $< 1-4,000 \text{ mm.} = .25 \mu$  is a solution.

average molecular size reckoned as  $.2 \mu$  from kinetic gas theory.

$\mu$  = limit of microscopic resolution. Hence between limits lie colloid solutions.

250  $\mu$  . 0.2  $\mu$

The next difference is the irreversible nature of the coagulation produced by electrolytes. Ordinary suspensions give the state on re-shaking up. Coagulated colloids do not.

Colloids are strongly absorbed by porous bodies such as coal. I shall return to the nature of absorption later, as of fundamental importance in photographic processes.

Colloids in solution react with each other in a manner resembling chemical reactions. But these reactions differ in the laws of combining proportions are not followed. The is true for the coagulations by electrolytes, in which a portion of the electrolyte is taken down, but in no simple portion.

### The Electric Properties of Colloids.

The reactive properties of colloids can be largely explained by the fact that the particles carry an electric charge. This is shown by the fact that when an electric current is passed the particles move either to the cathode or the anode. They may be accordingly classified as positive or negative colloids. Examples are:—

#### POSITIVE, TO CATHODE.

Colloidal metals—

Gold, silver, iridium, palladium, cadmium, selenium, tellurium.

Sulphur.

Silicic and stannic acid.

Tungstic, vanadic.

Metal sulphides.

Halides, etc., of silver and other heavy metals.

Ferrocyanides of copper, zinc, iron.

Aniline blue.

Starch, glycogen, gums.

Congo blue—Congo dyes.

Dianil blue.

Licht blau.

Probably the wandering of "dyes," etc., since "gels" (see later) also retain an electric charge.

#### NEGATIVE, TO ANODE.

Colloidal metals—

Gold, silver, iridium, palladium, cadmium, selenium, tellurium.

Sulphur.

Silicic and stannic acid.

Tungstic, vanadic.

Metal sulphides.

Halides, etc., of silver and other heavy metals.

Ferrocyanides of copper, zinc, iron.

Aniline blue.

Starch, glycogen, gums.

Congo blue—Congo dyes.

Dianil blue.

Licht blau.

### Colour Changes.

An interesting experiment showing the relation of particle size to the state of solution and chemical reactivity is the following.

Phenolphthalein shaken up in alcohol gives a fine emulsion.

On adding acid, the particles immediately agglomerate.

On adding alkali the particles disappear and give a red solution.

Thus, the difference between a true solution and a real is strikingly shown with certain of the new sensitizers—pinacene blue. In alcohol and other organic solvents it gives a solution, which is deep blue, and shows two characteristic absorption bands. In water it is rose red, and has a flat band in the green. But on heating the aqueous solution to 100 deg. it becomes blue, and goes into true solution. This change is reversed on cooling, and the behaviour is similar to starch. It shows how one and the same substance can give all grades of "solution" according to the conditions, or, better, "milieu."

### Milieu.

A very useful term to express the general physical and chemical conditions is the French word "milieu." This implies all conditions as acidity or alkalinity, presence of electrolytes,

etc., temperature, nature of solvent. The reactions of colloids are throughout determined essentially by the milieu.

### Electric Charge and Properties.

I must ask you to return for a moment to a consideration of the electric charge of colloids. We consider also that electrolytes are charged, and we have electric dissociation in solution with positive cations  $\text{Na}^+$  and negative anions  $\text{Cl}^-$ . But whereas in electrolytes the sodium atom is always united with the same quantity of electricity, with colloid particles this is not so—i.e., the ratio of mass to charge is indefinite. So far it appears that the charge is due to a small quantity of absorbed electrolyte, the last trace being almost impossible to remove. I shall have more to say on this point in dealing with the preparation of colloids and their purification. It is this electrified condition which is responsible for most of the reactions of colloids.

### Coagulation by Electrolytes.

Thus the coagulation by electrolytes depends for positive colloids (iron hydroxide, etc.) only on the anion, for negative colloids on the cation. Further, a certain definite amount of the electrolyte is necessary, but it is found that as the valency of the ion increases, so does its coagulating power. Taking the case of arsenic sulphide, and reckoning the coagulating power of potassium iodide as unity, the following values were obtained:—

Potass chloride	.....	KCl 2.5
Sodium sulphate	.....	$\text{Na}_2\text{SO}_4$ 2.5
Calcium chloride	.....	$\text{CaCl}_2$ 80
Magnesium chloride	.....	$\text{MgCl}_2$ 182
Zinc sulphate	.....	$\text{ZnSO}_4$ 60
Aluminium chloride	.....	$\text{Al}_2\text{Cl}_6$ 1518
Aluminium sulphate	.....	$\text{Al}_2(\text{SO}_4)_3$ 957

The solution in consequence becomes acid or alkaline, according as the cation or the anion of the salt is absorbed.

These numbers are inversely proportional to the time required to produce the same degree of coagulation. (A certain quantity of the electrolyte is always taken down.)

### Protective Action of Colloids.

The coagulative action of electrolytes may be hindered by the presence of organic colloids, such as gelatine, albumen, etc. These, added to inorganic colloid solutions, render them more stable. The action is known as "Schutz-wirkung," and is due to the added colloid forming a protective sheath round the particle. This action is illustrated in emulsion making, where the gelatine acts as "Schutz-colloid," preventing both too rapid action of the electrolytes present in "flocking" and also shielding the haloid from "germs" which would give rise to fog.

### Reversible Alterations of Condition. Jellification—Gels.

The process of jellification has long been known. If a solution of sufficient strength of organic colloid is cooled, it jellifies, giving a half-solid gel. On warming, it again goes into solution. As a matter of fact, jellification can, under certain conditions, be obtained with certain inorganic colloids, notably the soaps—but the conditions are more difficult to determine exactly. Hardy was the first to submit the process to an exact investigation. His researches showed that an agar gel consists of a half-solid and more concentrated part or phase, and a fluid, less concentrated (as to agar) phase. This has been confirmed by Quincke, and in such "gels," as well as in the more complicated case of emulsions, we must assume a solid phase and a relatively liquid phase enclosed in cell walls.

The temperature of the passage from the "gel" condition to the "hydrosol" is known as the "melting point," but it is by no means so exactly defined as the melting point of crystalline substances. It has none the less been taken as the quantitative datum in several investigations. Similarly the temperature of jellification is known as the "setting point." Interest-

\*  $\mu$  = 1-1,000 mm.

$\mu$  = 1-100,000 mm.

ing experiments as to the influence of the "milieu" on this have been carried out, and the question is one of considerable importance in photography.

#### Setting Point—Influence of Salts.

Pascheles found for gelatine the following:—

Chlorides, bromides, iodides, and nitrates lower the setting point; with increasing concentration the action is at first slower, then more rapid.

Sulphates, chromates, citrates, and tartrates, further, sodium acetate and glycerine, raise both the melting point and the setting point.

Arranging the salts according to their capacity for favouring or hindering the gelatinisation, we get:—

Sulphate.	Chloride.
Citrate.	Chlorate.
Tartrate.	Nitrate.
Acetate.	Bromide.
(Water).	Iodide.

It is found that the influence of salts is approximately the same in order as for their action on the swelling of gelatine, to which we shall come shortly. An exact explanation has not yet been found.

P. von Schröder concluded that in gelatinisation there were three simultaneous actions.

(1) A hydrolytic or saponifying action of the water, this alteration of condition being irreversible, and marked by a gradual decrease in the viscosity of the solution.

(2) The temperature alteration causes an actual reversible change of condition, the system

Hydrosol  $\longleftrightarrow$  hydrogel.

(equilibrium)

passing with increasing temperature to one, with diminishing temperature to the other, condition.

(3) When the temperature equilibrium has been adjusted, there shows itself, after a long time, thermic changes (Nachwirkungen) resulting in increased viscosity.

Hence gelatine solutions are always changing in properties, and one cannot compare, say, two 5 per cent. solutions of gelatine unless they have both passed through exactly the same experiences since their birth. They must have been boiled off the same bone and had the same life subsequently.

#### Colloidal Condition.

In dealing with solid colloids we enter particularly the region where the history of the substance is of immense importance. In industries where the end substance is a solid colloid, what is desired is what may be termed a "colloidal" condition. An example is vulcanised rubber. The properties depend on the preparation, the temperature of the vulcanisation the rate of cooling, and so forth. Similarly for steels and glasses. Such conditions are never permanent, but show a change with time, and the object in manufacture is to make this "hysteresis" as slow as possible. Photographic emulsions show a similar state of affairs.

#### The "Salting Out" of Albumens.

A process with some analogy to the coagulation of inorganic hydrosols is the "salting out" of albuminoid bodies by con-

centrated salt solutions. But here the change is reversible, coagulum can be redissolved, and the amount of salt required is much higher, only very concentrated solutions being effective. Especially applicable are sodium chloride, magnesium sulphate, ammonium sulphate, and sodium sulphate.

It is found that each albuminoid behaves specifically, order of action of the salts being different. Moreover, excess electrolyte REDISSOLVES the coagulum, so that the action holds between limits. It has been applied to the purification and separation of the different albuminoids.

The ratio of electrolyte to albumen at different temperatures in the precipitate varies, so that the action is not chemical.

#### Mutual Precipitation of Colloids.

Colloids of opposite sign can precipitate each other. The dyes of opposite charge precipitate, but above a certain concentration either is soluble in the other component. This is of importance in sensitising with dyes, in preparing screens, and in all work involving the use of dyes.

Similarly charged colloids do not precipitate, and with similar there is always a zone of coagulation followed by resolution.

10 ccs. gold hydrogel with 1.4 mgm. gold + 5 ccs. colloidal thorium hydroxide of variable concentration.

Mgms. Thorium Oxide.	Phenomena observed.	
	After mixing.	30 minutes later.
.5	No ppt.	Very fine turbidity.
1.0	Very fine ppt.	" " clots.
2.0	Ppts. slowly.	Ppts. slowly.
2.5	Ppts. quickly, settles completely.	Completely pptd.
3.0	" slowly.	" " "
4.0	Very fine clots. "	Clots completely pptd.
5.0	No ppt.	No change.

#### Jellies, Membranes, and Precipitates.

These are, of course, of quite special importance for photography. And here we are even less able to generalise, for the "colloidal" condition depends at every point on the history and the milieu or environment.

**Membranes.**—As the photographic layer, whether on photographic plate, on paper, on zinc, or on any other surface, is termed a "membrane," the investigation of these is of greatest moment. Membranes are gels which may arise by

(1) Precipitation: When the solutions meet at a surface.

(2) By drying of a colloidal jelly.

The structure of gels has been the subject of investigation by Lehmann, Quincke, Butschli, and others.

Briefly, it is found that gels (jellies) possess a micro-structure, which we may compare to a sponge. But the nature of the property of jellies and solid colloids are too complete to be missed at the end of an introductory lecture, and we shall touch upon specific points as we go along. S. E. SHEPPARD.

The next lecture will deal with the preparation and investigation of colloids, and with certain applications to photographic problems.

#### CONVENTION LYRICS No. 4.—

A knowing young "sitter" of Bruges  
Has a skin of the tint of gamboge;  
Her artist, she states,  
Does not use "Iso" plates,  
So she put on some powder and rouge.

**PLATINOTYPE ENLARGEMENTS.**—Our paragraph of last week in reference to the reduced prices for platinotype paper has been the cause, we are sorry to say, of some inconvenience to several enlarging

firms making a special line of platinotype enlargements. Although as we stated, in certain sizes the reduction of price is to the old figure, this is so only in the cases of small cut sizes, and apparently connected with the wastage in cutting up. In the case of the full size sheets used by enlargers, the reduction, though considerable, does not bring the cost of the paper back to the old price, and enlargers therefore cannot be expected to return to their tariff of four years ago. Fortunately, the public appreciation of platinotypes has also greatly advanced a good deal since this time.



## AN ENGLISH JOURNALIST IN AMERICA.

The following paper by Mr. Thomas Bedding, formerly Editor of THE BRITISH JOURNAL OF PHOTOGRAPHY, and now joint-editor with Mr. John A. Tennant, of the "Photo-Miniature," was read at the London and Provincial Photographic Association on Thursday evening, June 4.—Eds. "B.J."]

first duty, and my greatest pleasure, in writing this paper, wish the London and Provincial Photographic Association all success and long life in its new home. For twenty-six years the L. and P. has symbolised all that was best in practical journalism relating to the process of photography; and the fame of the record has spread to America where it is held in great esteem. The Association also stood for freedom of discussion, and I hope to continue to do so.

### American Society Life.

Now, you may ask, does the photographic world of America come within that of Great Britain. The answer of course cannot be enclosed within the limits of a single paper, but the salient features both can, as it were, be set in parallel. To begin with, life in New York, the one city with which I am so far chiefly acquainted, is not a strong characteristic of photographic endeavour. New York Camera Club and Camera Workers, a recently founded organisation absorbing members from the Photo-Secession, is the nearest approach to the Royal. There appear to be very minor camera clubs scattered about the city; but their influence is possibly smaller in their respective spheres than, let us say, the Hackney Photographic Society, the North Middlesex, the London Camera Club, the South London, in the influence they exert both locally and nationally.

In the whole of the United States there are probably not more than a hundred amateur photographic societies, and these do not differ from anything like the active and strenuous life which characterises English societies. The reason for this is, I think, that photography, like everything else in this wonderful land, has been robbed of all mystery and complication; has been forced down into such a state of simplified efficiency that there is no further need to talk and talk about its difficulties and failures as you and I were to do a few years ago in the City of London.

The American amateur of to-day knows nothing outside simplified photography and its necessary concomitants. He has no use for ingenious complexities which increase weight, complicate procedure and make results difficult to obtain. I will give you a characteristic illustration of the rapidity with which things are done in New York.

### The Fourth Estate.

Early this year a distinguished French editor came to New York and was interviewed by a Press representative before he left the city. The New York reporter and press photographer have the reputation of being the smartest and swiftest in the world. A celebrity or notoriety arriving on the Mauretania in New York Bay have one of the hardest tasks of his life to evade the wily members of the American Fourth Estate. An interview must be made in the paper, even if it has to be invented. But this is a matter of the greatest ease to my resourceful confrères. Our French reporter was complacently and cheerfully told the reporters what he thought about America and its institutions before he landed in the country. Great was his astonishment, when he reached his hotel an hour or so later, to find a copy of an evening paper containing not merely a detailed account of the interview with him, but his own portrait and biography! He subsequently expressed undoubted admiration and surprise at this remarkable instance of journalistic celerity, and deplored the fact that although he had the aid of a large and able staff he could not do things so quickly as this. But rapidity of thought and action are the commonest characteristics of these remarkable people. They have no use for daydreaming and the philanderer. So it goes all round. The daily papers, with few exceptions, are freely illustrated with photographs, and are published lavishly. The Yellow Press has some unkind things to say of it at times—and deserves them—but it is bright, enterprising and sparkling, if occasionally inaccurate. Still, journalistic scruples count for nothing in this delightful place, where dullness and stodginess and suburban priggishness would not be tolerated. I am pleased to say, however, that the New York papers are never

indecorous or prurient, whatever the ignorant may say to the contrary. I should like to give you some idea of the extent to which photography is applied in the New York Sunday papers—such as "The Times," "The World," "The Herald." They are simply vast collections of sheets on which innumerable half-tones covering the whole of the pages and extending in size to the full limit of the sheet are beautifully printed. The public appetite in New York for newspapers appears insatiable, and it really seems as if too many illustrations could not be given to them. But I must switch off this fascinating topic, to which I shall be referring elsewhere at greater length.

### Pictorial Renaissance.

With the dismemberment of the Salon whose epitaph I said I would write fourteen years ago, and the publication of which cannot longer be delayed, the supremacy of the world's pictorial photography passes without challenge to its proper home, New York. The last of the photo-fakers has gone, and not all the genius of Mr. Alfred Maskell can ever bring back the old usurpation. Here in New York are such workers as Alfred Stieglitz, Steichen, Coburn, Clarence White, and many others, all carrying out the ideas enunciated by Dr. P. H. Emerson in "Naturalistic Photography" over twenty years ago. I was rebuked for calling the gum-bichromate process dead. So it is in the eyes of all true pictorialists, as Mr. William Crooke very properly pointed out the other day. It is to be regretted that such a beautifully responsive medium as photography should ever have been handicapped in progress by the gum and similar processes—which have no real place in photographic formulae. It is time that the straight negative and the straight print were restored to their proper place now that the gospel of photo-faking and gum-spodging is dead and buried. I am glad that my recent re-entry into photographic journalism synchronises with the opportunity of showing that I was never at any time an implacable foe of pictorial photography, but only of senseless and debauching photo-faking, photo-falsification, photo-dodging. You know what I mean.

### To the Manufacturer.

Notwithstanding the tariff there is a fine field for British-made photographic goods in the United States. The manufacturer must throw off his conservative prejudices and put himself in a position to supply the requirements of the alertest and most sympathetic people he could possibly do business with. High quality of product must go hand in hand with simplicity. If a printing process, a camera, lens, or other piece of apparatus of European origin does not make its way on the American market be sure of one thing, it fails because it is not simple.

Even after this short residence in America some of the photographic products of the old land look absurdly complicated and cumbersome. There is a master mind at Rochester, N.Y., which has for years been engaged in simplifying photographic apparatus and appliances, and teaching photographic workers how to use them. What think you of a great professional school with a large and perfect plant and organisation travelling through the chief cities of the United States showing professional photographers what to do and how to do it? Of course, it is the demonstration idea carried out on a vast scale, not in the charming perfunctory manner in which you and I see the thing done at the "L. and P." For all that, however, I am sincere and patriotic enough in the belief that the best British photographic productions equal the best of other nations. There is room, and to spare, for a great trade in America, if local conditions are carefully studied and complied with. I could name a dozen good firms who could do an excellent business in the United States if they would only come after it. They should write to me.

### To the Author.

America is the land of incisiveness. Words are no more wasted than is time. These last months I have been passing through a process of simultaneous learning and unlearning. To remodel one's literary style in compliance with the requirements of American

journalism is no easy thing; but I am not without hope that I shall be completely successful at an early date. This leads me to the point where I may usefully tender a piece of advice to the conductors of the British photographic papers (whether they will take it is another matter, and I shall not much care if they do not), the writers in them, and the authors of books—compression, condensation, and the lopping off of all superfluous words would greatly accelerate the popularity of English books and periodicals in America, where they are always welcome. The alert American mind is intensely practical and likes to go straight to the heart and point of a thing without having to force its way through a forest of obstructive words. It is right to say that my work on the publication with which I have the honour to be associated

drives this lesson home to me all the time, but I have also come to the conclusion independently and after months of disquieting reading. The wordiness and diffuseness of many English books are repellent to American eyes, trained from their early growth to rapidity of perception. For my sins and for my duty, yoke these last few months I have been obliged to read and re-read many of my own articles of long ago. They look elegantly journalistic, I suppose, but if I had to write them now I would write them differently. Ah, indeed I would.

It has been a pleasure to me to write this short paper; I should much like to be present at this moment to read it to you. But my astral body is in your midst. So may the good old "L. and Co." flourish!

THOMAS BEDDING

## THE NEWSPAPER FREE PHOTOGRAPH.

[A New York newspaper having set going a scheme which some be interesting to quote an account of the incident from our American surprise to find the New York professional, whom we have been of a newspaper firm by offering to make portraits for nothing in However, as Mr. Abel points out, they have not been slow in

"Do you take coupons here?" has been the cry all over Greater New York during the past week at the studios. There were free photographs to be had for just a mere slip of paper—"a cabinet photograph without charge or obligation," and as the gigantic offer was well advertised by the publishers of the "American," it is not surprising that every street gamine and the biddies and shop assistants, and the Italians of the East and West Sides and all the other *hoi polloi* were quick to take advantage of the offer.

And just how has the photographer fared in the matter?

I have tried to find out, and I think a few of my experiences may be interesting to those who were wise in their generation and resisted the wiles of the "American" agents.

In the first place, it appears that a number of very estimable photographers were persuaded into the free photograph scheme by being told that certain well-known photographers had entered into a contract with the "American" and that they thought the plan an excellent one. I understand that Schloss' name was used frequently in this way, though, of course, Schloss' Broadway Studio was missing from the published list. Many photographers, after having signed, wished to withdraw and were almost threatened into leaving their names on the list. It was shown to those who were picked out for the honour (?) what a wonderful thing it would be for them—that they would get the benefit of the extensive advertising in the "American," and of the re-orders which everyone would naturally give. That these re-orders existed largely in the minds of the agents has been well proven to the photographers, for with few exceptions only the most undesirable class of sitters has presented these coupons. The photographers themselves were quick to see that there was going to be very little money in it for them and devised all sorts of schemes to get round their agreement with the "American." Having agreed to do a certain thing, it was up to these photographers to do it, but I find in many instances that any kind of plausible excuse was given to get out of taking the picture demanded.

Many of the photographers, particularly in New York, made a charge of a quarter or ten cents for retouching. If the coupon-holder would not pay for retouching then he or she was told that the print would not be ready for three or four weeks.

Others asked ten cents for a proof, if a proof was desired.

Others again asked for a quarter if a proof was desired in a day or two. Otherwise it would be some two or three weeks before a proof could be shown.

In New York at least, and probably in Brooklyn too, the first question asked was, "Where do you live?" and if by any chance the coupon-holder did not live within a block or so, he was told that he must go to another photographer. Some photographers on Sixth Avenue, New York, sent the sitters to the next studio, and the photographer there, in turn sent them back again. At one Sixth Avenue studio, if the coupon-holder was well-dressed he was told

papers in this country have used as a bait to their readers, in a contemporary, "Abel's Photographic Weekly." It is somewhat brought to regard as a keen business man, playing into the hands of exchange for some advertisement of very problematical value. Discovering the folly of their assent.—Eds. "B.J."]

that he ought to be ashamed of himself for trying to get a photograph for nothing, and in many other ways the coupon-holders were made to feel cheap.

To those photographers who had refused to enter into the scheme the whole week has been one prolonged misery. The public do not understand that the coupons had to be presented to one of the photographers on the printed list, and only to them. They were shown to their favourite photographers or those whose names were well known. "All day long the doors have swung open and 'Do take coupons here?' has been asked until it became wearisome; every newcomer was suspected of being a free sitter." One photographer on Grand Street, New York, who has had the same scheme for some fifteen years, was overrun on Sunday by some 500 Italians and other East Side dwellers, who could not understand that the coupons were not good at his studio. He probably has incurred the ill-will of many East-siders through no fault of his. One photographer told me he would gladly have paid the coupon-holders to stay away from his studio, if he could have afforded it, but as it would have had to waste his time, his plates, and material with the prospect of getting anything back. One Brooklyn photographer said, "Of course, this is a free photograph, but I shall expect you to buy half a dozen at least, otherwise there would be nothing in it for me."

The fact that nearly all the photographers were anxious to make the sittings, that they sent the holders on to other studios or made any kind of excuses proves that the scheme was thoroughly bad one from the very start, and it will be a lesson to them that they will not easily forget. Thousands of pictures have been made without any hope of extra orders, and thousands of men and women have been to more than one studio with coupons and had two or three or more pictures for nothing. The fact that the sitter was supposed to live in the neighbourhood of the photographer was quickly caught on to, and naturally fictitious addresses were given so as to fool the photographers. Not one photographer I visited personally or by proxy admitted that he was going to money out of it, and nearly all were more than sorry that they allowed themselves to be fooled by the "American."

As I anticipated in these pages, the scheme has been a vast failure as far as the photographers go, but probably the "American" is satisfied with the number of copies sold, and the local dealers at the studios should have done a good business in plates and paper and mounts.

Looking at it another way, this big free picture scheme has many good points. Ticket schemes are and always have been prevalent in this city. From Fifth Avenue to Avenue A, from the Bronx to Battery, photographers are working schemes of one kind or another that cannot be classed as legitimate, legitimate in so far as the public gets exactly what it expects to get. Whether it be an order on some photographer for a portrait for a fictitious book of photography or a ticket entitling bearer on payment of a small sum



ure, promised by the agent to be the very best work of the photographer—a promise seldom or never kept—or whether it be any one hundred other schemes which hold out false inducements, each every one of these schemes lowers the standard of photography business, and tends to make it a fake in the eyes of the public. A small man on the East Side is jeered at for entering the "American" free picture scheme, while the big man, with more money and more help at his disposal, works precisely similar schemes in quiet. The one is as bad as the other in countenancing suchness. In this "American" scheme I believe there are few, very few photographers giving the public just what they are led to

expect. Everywhere there is some little nigger in the woodpile, and so it is with all schemes.

This big free offer, then, may have this good in it, that it will show the public the fake quality of the ticket which for a small sum entitles the holder to a picture the photographer is willing to make for nothing, and it will help to kill that bane of the photographic business, the ticket-solicitor, and further, the public will probably have learned that coupon or no coupon, promises or no promises, the photographer is in the business for the money and is not giving something for nothing, as long as he can figure any way out of it.

J. C. ABEL.

## THE CARAVAN FOR PHOTOGRAPHIC PLEASURE OR BUSINESS.

[From the *Times* of Monday in last week we reprint an article on its attractions for the amateur photographer, and is, moreover, reaching out-of-the-way villages and hamlets. A caravan fitted for amusements in our advertisement pages.—Eds. "B.J."]

For the amateur photographers van life is finding increasing favour, and it is expected, for it enables better photographs to be taken wherever results to be obtained. The ordinary tourist cyclist, motorist, or pedestrian on a rapid journey can, as a rule, photograph one side of a view. He passes a particular spot only once, before the sun is high; and, though by luck he may be there when the light is photographically right, he may be there when the light is wrong. A caravan photographer waits—waiting he is accustomed to or he does not be a caravanner—until the light pleases him, and then he takes his photos or presses. Most landscapes or seascapes yield far better photographs either early in the morning, soon after the sun is up, or in the evening. These two specially favourable periods of the day, as well as all others, are at the disposal of the caravanner, who also has the advantage of a dark-room on the spot for seeing how he or she has not, succeeded in his efforts—for with a little ingenuity the interior of a van can easily be made non-actinic, wherein developments as well as changing plates can be carried on. A well-equipped horse-drawn light travelling van which can be converted with little trouble into a dark-room as well will no doubt before long be put on the market. But in this direction, as in all other directions connected with caravanning, the advancements and improvements come, as up to now they have come, from private and practical enthusiasts and not from the trade.

The carriage-builders in this country have not yet given enough thought to the construction of caravans. The American framework under-carriage are much more suited to touring vans than those found in many of our home-made vehicles. Iron T-pieces and bass wood for panels, or some other material not shrinkable or to crack in sun or rain, would seem to be more suitable for this kind of vehicle than heavy woodwork of mahogany or oak.

### An Hotel on Wheels.

The expert caravanner is he who has acquired the art of packing up his effects in the incredibly small, making the combination of space less than either. He is full of ingenuities for circumventing the difficulties of weight and bulk. He is always fighting the unnecessary; learning the art of discarding. The ideal which all along is his guide is to the convenience of a modern hotel into a parcel to be carried in a pillow-case. The art of doubling is his—"The chest contrived to hold a double debt to pay, A bed by night, a chest of drawers by day." A caravanner imbued with this spirit of concentration can go far and see much country. Of course, such aspirations will not enter into the practical politics of the luxuriantly inclined, who will take to the road to get up an appetite or, maybe, create a desire. One caravanner I know bought a van resplendent with brasses and glittering metal adornments. After a day's arduous journey he cleared the lot out, dumped it down at a wayside village smith's, and sold the gaudy and heavy superfluities for old iron, departing more merrily on his way a wiser and a lighter burman.

### Types of Vans.

The beginner should bear in mind the fundamental principle—the larger the van the nearer to civilisation and the haunts of man.

dealing with the practical side of caravanning, a form of travel which is employed to advantage by professionals able to use it as a means of doing photographic work can often be purchased through the small advertisements.

For touring purposes a one-horse van is much preferable to a two-horse vehicle. In the first place, it is easier to get one good draught animal than two, and experience has shown that the best type of horse for the work is not an omnibus horse or ordinary hackney, but an agricultural horse accustomed to draw the plough. A one-horse van, too, can go into many places where a two-horse cannot. The van can be one or two skinned—there are plenty of advocates for either type. The two skinned van is made of light wood, two-ply, with an air space between so that the internal heat is kept in during cold weather; and the heat is kept out during the hot weather. The one-ply walled van is much lighter, of course, and if arranged with hooks all round the top and bottom of the exterior, for suspending a canvas coat thereto, is nearly as efficacious in heat and cold excluding properties as its two-ply brother.

### Interior Fittings.

The internal arrangements are nearly as diversified as are vans themselves. The consensus of opinion up to the present points to the desirability of the main entrance being in the rear, and there by a door opening inward of two narrow pieces, not running back into the walls. Such a van can be readily entered at any time on the road without stopping progress. Another short door on the near side beside the driver's seat is also desirable, and a small window just behind him, so that free access to the front at all times, even when travelling, is obtainable; for, *pace* the yachtsman, it is always desirable and pleasant in a van to speak to the man at the wheel. Some vans, especially those attached to travelling circuses and theatres, are entered in the middle by a door on either side. On one hand in the interior, across the end, is the fixed bed, on the other the stove, and the centre holds the table. Others are divided by doors, mirror clad, into two separate compartments, with fixed couches all round, convertible into beds at night. Such are all heavy and mostly require two horses to draw, the average day's journey being eight to ten miles. A light, modern van, with 7ft. clear head room inside, which arrived at the recent caravan meet at Ockham, was noticeable for its ample day-room space. A set of lockers on the floor on the off side, with two long light benches placed close to them at night, afforded a good bed, the horsehair mattresses—cushions by day—being placed on top. On the near side a set of lockers near the top ran along the length of the van, with doors hinged to open downwards. These lockers, not being placed close up to the top, afforded there a useful shelf. At night a military camp bedstead was opened out beneath them. The table folded flat against the wall below this set of lockers; and just above it a hinged iron spring mattress could be set out at right angles to the wall at night, when the interior exactly resembled a cabin with three bunks. This particular van had come from Reading in one day, drawn by one horse without fatigue or hurry, a distance of over thirty miles. The ordinary caravanner's day journey is from ten to twenty miles. Needless to say, this light draught van was on high wheels. Vans on small wheels are heavy to draw, and are to be avoided.

There is no reason why a van should not be well lighted up at night so as to ensure ample illumination for reading and writing,

and the system of acetylene lamps would seem to be especially adapted therefor; but up to now no maker has given serious attention to this branch of caravanning. Cooking is done at a fixed enclosed stove in many vans, with a chimney pipe carried through the roof—a system which allows a good drying locker for clothes to be built around the pipe at its upper end. But light touring summer vans save this great addition to the weight, and use simply paraffin wickless lamps, burning a mixture of air and ordinary oil on the Bunsen burner principle. Such lamps give intense heat and no smoke. Many vans carry light portable tents for putting up friends at night, and for bathing purposes, all sorts of portable baths and basins of canvas being carried for that purpose. Aluminium vessels are now largely used, and folding furniture of even a luxurious description.

#### Prices of Vans.

The price of a van varies within very wide limits. A motor van which visited the recent caravan meet at Ockham was driven by a 48-horse power engine, and lit with electricity from accumulators, and

cost hundreds. Another one-horse light touring van (which was also at the meet) was built by its owner for £40. A van was travelling in England last year which cost at least £2,000. Between the figures the intending caravannist has ample choice, to suit his own idiosyncracies and pocket. The demand for vans is now in excess of the supply—that is, for modern light touring vans—and consequently many old-fashioned and heavily equipped vehicles are being unearthed and furnished up, which will cause more trouble than they are worth. Gipsy vans are also being brought forward. They should be viewed with grave suspicion, and if one be purchased it should be well disinfected. Seldom, if ever, is a gipsy van worth what is asked for it. A good watch dog—a “demon guard,” as it is called—is most valuable while on the road; one that can be left in charge of the vehicle during temporary absence. But perhaps the most essential point of all to remember in fitting up a van is to have a really comfortable bed. Unless a good night's rest be always obtainable, the benefit of caravan life will be much lessened.

## MAGNETITE ARC LAMPS.

[Arc lamp usage is undergoing transitions which are almost as startling and as far-reaching as the upheavals which are at present disclosing themselves in the incandescent lamp field, and a very interesting contribution to the literature of the modern arc lamp is found in the “Electrical World,” of New York, contributed by Mr. G. M. Dyott, who reports the results of some investigations made by him in the use of metallic arcs in which the usual carbons are replaced by metallic electrodes.—Eps. “B.J.”]

THE value of the light for photo-mechanical purposes has not as yet been fully determined, but from the character and control of the rays emitted, there should be found interesting possibilities in the specific application of the new method to process uses. It is stated that the total light emitted by a 300-watt arc is approximately twice as great as that from an alternating-current series enclosed carbon lamp consuming 450 watts. The life of the electrodes also compares very favourably with that of the latter, two hundred hours or more being allowed between trimmings. There is a radical difference, however, between the magnetite arc and the ordinary carbon arc in practically every respect. The magnetite arc can only be maintained on a direct circuit, and should be used in conjunction with metallic positive. If the magnetite electrode is used for the positive as well as the negative electrode the arc loses some of its brilliancy, and in consequence its efficiency is impaired. It is found that the positive electrode, when metallic, lasts two thousand hours or more, but when this electrode is composed of magnetite it is consumed fairly rapidly. On alternating-current circuits it is impossible to maintain an arc unless specially prepared electrodes are used. The magnetite electrode must in all cases form the negative, and, as a rule, has been placed in the lower holder of the lamp. On account of the character of the arc, which is dependent on its composition, it is the most important of the two electrodes, and the size of the positive has little effect on the behaviour of the arc; ordinarily it is found satisfactory to make it of a heavy copper rod one inch in diameter. The negative electrode for experimental purposes can be made from the following materials:—Magnetite iron ore,  $\text{Fe}_3\text{O}_4$ ; chrome iron ore,  $\text{FeCr}_2\text{O}_4$ ; titanium oxide,  $\text{TiO}_2$ ; but for commercial work it is necessary to add other substances, which serve to steady the arc, and in regular use the bulk of the electrodes consist of magnetite iron. At this point we begin to be able to see the possible value of the specific quality of the rays for photo process purposes, as it is found that an arc maintained between electrodes of pure magnetite is very rich in blue and ultra-violet rays, but unfortunately the arc is very unstable and emits fumes very copiously. The arc issues from the negative at a point and spreads out like a fan towards the positive. Excessive blue rays emitted by the iron arc alone are largely neutralised with a consequent increase of ordinary luminous efficiency by the addition of titanium oxide in varying proportions according to the other materials used. An arc produced between electrodes of this oxide alone is very brilliant, being of a pure white colour giving off fumes, and forming an insulating slag when cold. It, however, is also very unstable, and the area of luminosity is very much reduced. When the oxides of magnetite and titanium only are used the instability of the arc becomes so great as to render it unsuitable for practical purposes.

In order to overcome these defects, and at the same time increase the life of the electrodes, either oxide of chromium or chrome iron ore,

called chromite, is added, the latter being thought the better of the two. An arc formed of the oxide of chromium is of a dull greenish-yellow colour, and burns steadily, its luminous efficiency being low. The consumption is very slow, and scarcely any fumes are given off, but it forms an insulating slag when cold. The shape of the arc is different to that produced by the previously mentioned compositions, being of about the same width throughout its length. The distinctive characteristics of these metallic arcs is found in the fact that the area of greatest luminosity occurs adjacent the negative electrode, which is the reverse of that found in ordinary practice with carbon electrodes, wherein the area of greatest illumination is found on the positive carbon. The obvious solution for the greater operational efficiency would be the placing of the magnetite in the position of upper carbon, and the copper electrode in the position of the usual lower electrode, sending the current from the copper to the magnetite; but there has been a great deal of difficulty encountered in effecting this arrangement, because of the difficulty in holding the magnetite electrode in mechanical cohesion, but recently there has been placed on the market a lamp which brings about this result. The voltage drop in a one-inch magnetite arc when consuming five amperes is one hundred volts is ninety-three volts, seven volts additional being consumed in the negative electrode between its outer surface and the point from which the arc proceeds.

If the direction of the current is reversed the whole character of the arc is changed. It loses all of its striking brilliancy, and becomes a flaming arc, in the true sense of the word, having a dull yellow colour. The striking characteristics of the arc depend on the negative or magnetite electrode, and it is around the positive or copper electrode that most of the difficulties are found. Among these may be mentioned: First, after continuous service fumes are deposited on the positive electrode, which in adhering to it hang down from the sides so as to completely curtain off the light. Second, material used for the positive, due to oxidation on account of the great heat of the arc, are liable to form oxides, which are insulators when they thereby making it impossible to re-start the arc. Third, globules of molten matter may be taken up by the positive from the negative, such globules affecting the steady burning of the arc. As far as the results of experiments show, the choice of material for the positive seems to be limited to copper, iron, alloys or mechanical combinations of these metals. Iron is consumed too rapidly. Brass appears to be very satisfactory, always being clean, presenting a smooth surface and any globules that may adhere to it at its lower extremity crack off when the light is extinguished. The benefit of these searches made by Mr. Dyott, it would seem, will undoubtedly be taken advantage of by wide-awake process work experimenters. This is especially true in the direction of colour work, and it is thought that the hints given by Mr. Dyott will be of great value in this direction.



## HOLLINGER ON THE SHOW CASE.

W. H. HOLLINGER, the well-known New York professional photographer, at a recent convention of the Professional Photographers' Society of New York, had some striking testimony to make as to the business value of a showcase which is actively used. He said originally he and each of his staff took the showcase for a week at a time, each striving to outdo the other in the display. There were four of them, they each had a month to get ready. It was lots of fun, but very expensive. Now he had the showcase changed every day. He had several ready-made, ready to slip into the showcases. Making a specialty copies, he had one board covered with copies, and this he slipped into the case every second day. In between days he used a board covered with groups, or one showing men's portraits only, or one of children. If he were to keep the copies in for several days together, people would get it into their heads that he made nothing but copies. Therefore he changed every day. Mr. Hollinger said he watched every case on the avenue, and knew which were changed and which were not. And those that were not did "draw" as well as the others. When no one stopped to look at his case he said he would send some one down to look at it, and thus draw a crowd. Mr. Hollinger said his method would at least keep the case clean, which could not be said of all cases.

## LECTURES ON PHOTOGRAPHY AT THE ROYAL INSTITUTION.

DR. SCOTT delivered the third and last of his lectures on Thursday, June 4, beginning it with a demonstration of the printing development of bromide paper. This led to the consideration of the nature of the latent image, and the lecturer favoured a chemical rather than a physical explanation. He considered that evidence pointed to a latent image consisting of silver—that is, the action of light breaks up silver bromide into silver and bromine. Some examples of reversal were shown upon the screen, the lecturer attempted no explanation: he considered the phenomenon to be quite obscure, and did not think that any theory put forward would meet the case at all. The processes of cyanotype, platinotype, and carbon were then dealt with, and applications of the principles of the carbon process in photographic work were pointed out. Colour processes came next, results by the Lippman, Sanger-Shepherd, and Lumière processes were shown upon the lantern screen. Sensitising a bromide emulsion to colour was described as due to the formation of a lake of silver bromide and a dye, and the formation of a lake of alumina carmine was demonstrated. Dr. Scott then referred to the production of photographs by agencies other than light, and a description of Dr. Russell's experiments proving that the effect is due to emanation, probably of hydrogen peroxide, and not to radiation. He drew attention to some interesting tests for the purity of ether of mercury founded on the radio-activity of the peroxide rendered impure by the impure substances. He stated that only about one part in a thousand was pure enough to stand the test, and in the case of mercury an admixture of 1,300th per cent. of ether or 1 part in 30,000, could be detected by this means. Quite pure mercury has no effect, but if a piece of zinc is simply dipped into the mercury and withdrawn again as quickly as possible, the mercury becomes sufficiently impure to affect a plate. Examples of the effects of wood and coal upon plates concluded the lecture.

LATE MR. ROBERT STEWART.—Mr. Robert Stewart, photographer, Elgin, died in Edinburgh on Tuesday of last week after a long illness. Mr. Stewart succeeded to the business of his father twenty years ago. As a photographer his work was widely appreciated. A series of postcard photographs of Elgin "characteristics" of last generation met with a very large sale, and he was well known for his admirable scenic photography, while his early work was of the highest class. Mr. Stewart was retiring in position, his one aim being to keep abreast of the rapid progress being made in his profession, and he took no part in public affairs. At the time of his death he was fifty-eight years of age. He left a widow and a young son.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents were made between May 25 and 30:—

**CINEMATOGRAPHS.**—No. 11,333. Improvements in synchronously operated cinematograph and talking machines. Heinrich Bayer, 6, Lord Street, Liverpool.

**PLATES.**—No. 11,341. Improvements in photographic dry plates. Bernard Klatte, Chancery Lane Station Chambers, London.

**CINEMATOGRAPHS.**—No. 11,395. Apparatus for protecting cinematographic bands or films against conflagration. Amedée Lertourné, Birkbeck Bank Chambers, Holborn, London.

**PHOTO-TELEGRAPHY.**—No. 11,446. Method of and means for transmitting pictures and the like from a distance. Francesco De Bernochi, 7, Southampton Buildings, London.

**CINEMATOGRAPHS.**—No. 11,551. Improved driving mechanism particularly adapted for cinematograph apparatus. Carlo Rossi, 111, Hatton Garden, London.

**BALLOON PHOTOGRAPHY.**—No. 11,651. Improvements in and connected with photographic apparatus for taking moving pictures from balloons and the like. Thomas Macready Down and Herbert Lindo Mocatta, 82, Mark Lane, London.

**SHUTTERS.**—No. 11,687. Improvements in or relating to photographic shutters. Kodak Ltd., Chancery Lane Station Chambers, London.

**COLOUR SCREENS.**—No. 11,698. Improvements in or relating to the manufacture of screens or coloured surfaces for coloured photography. Louis Dufay, 111, Hatton Garden, London.

**TRIMMING MACHINES.**—No. 11,708. Improvements in apparatus for cutting or trimming photographic and drawing papers and other thin materials or substances. John Merrett, 36, Chancery Lane, London.

**TRIMMING MACHINES.**—No. 11,709. Improvements in apparatus for cutting or trimming photographic and drawing papers and other thin materials or substances. John Merrett, 36, Chancery Lane, London.

**CAMERAS.**—No. 11,746. Improved device for the adjustment of photographic camera fronts and backs. John Arthur Harrison, 28, Chippendale Street, Castle Boulevard, Nottingham.

**ENVELOPES.**—No. 11,779. Improvements in light-proof envelopes for use in photography. Edgar William Houghton and Houghtons Ltd., 88, High Holborn, London.

**CINEMATOGRAPHS.**—No. 11,791. Improvements in and relating to cinematograph apparatus. William Friese-Greene, 70, Chancery Lane, London.

**MOUNTING.**—No. 11,798. Improved method of mounting and preserving photographs, engravings, prints, designs, paintings, and the like. Saul Freedman, 31, Bedford Street, Strand, London.

## COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

**SCREEN PLATE COLOUR FILTERS.**—No. 20,384, 1907. The invention relates to plates or films for colour photography. It is well known that in the manufacture of plates having multiple line or dot screen filters it is almost impossible to prevent the lines or dots from more or less overlapping, owing to the extreme difficulty of obtaining accurate registration. The object of the invention is to provide means whereby the necessity for obtaining registration is avoided. We first print upon the plate or film by any suitable process, as for instance, the fish glue process, a series of lines covering one-third of the area of the plate, for instance, in practice, first a series of straight red lines with intervening spaces of twice the width of the lines is printed, and a sensitive film applied over the lined side of the plate.

Next, a series of, say, green lines is printed crossing the red lines at a suitable angle, using a negative in which the black and white lines are of equal width; instead, however, of placing the negative on or in contact with the coated side of the plate, we print through the glass or film so that the lines first printed form a

portion of the negative, the result being that although the proportions of black to white in the negative used are equal, the printed area owing to the interposition of the previously printed line is only one-third of the total area of the plate.

After development the plate is recoated and exposed to light through the glass, the red and green lines previously applied acting as the negative to cover two-thirds of the area, the remaining one-third being coloured blue.

In printing, the colouring matter may be incorporated in the fish glue solution or the solution may be clear and the prints subsequently stained; in the latter case an insulating film of celluloid or other suitable varnish may be used.

The claims are for:—1. The method of producing multiple line or dot screen filters upon plates or films for photographic purposes consisting in printing upon the plate a series of evenly distributed lines, say red, covering one-third of the surface, then sensitising the surface so printed and exposing the same to light through a negative applied to the unsensitised side of the plate and having a series of alternating lines and spaces of equal width, then staining the sensitised surface so as to obtain a series of, say, green lines crossing the red lines, and finally, after again sensitising the printed side of the plate, exposing it to light through the glass so as to colour the remaining surface blue. 2. Plates or films having a parti-coloured surface produced in the manner hereinbefore described. Edward Sanger-Shepherd, 68, Adelaide Road, Hampstead, London.

**EMBOSSED PHOTOGRAPHS.**—No. 4,523, 1908. The invention consists in a process of embossing photographs or other pictures, consisting in providing a mould having recessed parts in its face corresponding to those parts of the picture which are to be in relief, mounting such a mould on the moving head of a press, placing a layer of a composition upon the opposed bed of the press (this composition being plastic but calculated to set hard) such as a mixture of plaster of Paris, dextrine and water, covering this composition with a layer of paper, bringing down the mould with pressure on to the paper-covered composition whereby the composition and its paper cover is formed to correspond with the mould, then allowing the die to set hard, backing the picture with stout soft paper, which is caused to adhere by means of adhesive. The picture thus mounted is placed upon the composition die with its picture face towards the mould so as to register with the die. It is pressed between the die and the mould, and finally removed and set to dry.

The die is made directly upon the stationary bed or platen of the press with the aid of the mould already mounted on the moving head. By so doing (that is by making the die *in situ* in the press) the die automatically registers with the mould. To carry this out a piece of soft paper, such as thick blotting-paper, is secured by some adhesive material, such as dextrine, to the surface of the stationary platen of the press beneath the wood mould, and the moving head is then brought down so that an impression of the block is produced upon the paper on the platen.

A composition is then prepared consisting of plaster of Paris, dextrine, and water, mixed in such proportions that the paste will not easily flow, and this composition is spread over the paper on the platen or bed of the press, being roughly placed so that there is a thicker layer over those parts marked on the paper pad which will constitute the relief portions of the picture which is to be produced.

Over this composition is then laid a piece of fairly stiff paper, which is firstly treated with dextrine solution on its surface, and the treated surface is then applied to the composition. The paper may be, for instance, glazed brown paper.

The moving head of the press is then brought down carrying the wood matrix, and the paper cover of the die which is to be formed, and the layer of composition beneath the paper, is forced by pressure so that the paper cover enters the intaglio portions of the mould.

The composition and the paper cover may completely fill those intaglio parts of the block where they are not very deep, but in many cases when the mould is brought up again, it will be seen that the soft paper-covered composition has not completely filled the intaglio portions of the mould. That is to say, by observing the impression of the mould upon the paper covered composition it will be at once observed whether the impression upon the material

which is to compose the die is perfect or not, and if it is perfect—which may frequently occur—the paper cover of the composition is pulled off, and this can be done without in any degree disturbing the composition beneath it; and then a further supply of composition is placed upon those portions which obviously require a greater height. The paper, or another of paper treated with dextrine, is laid over the composition augmented, and the head of the press is again brought down. It will be found in most cases that a perfect impression is produced of all the intaglio portions of the mould upon the paper-covered composition which when dry forms the die proper.

A paper copy or print of the original picture is then taken, upon the back thereof is fixed a piece of thick soft paper, such as stout blotting-paper, by a layer of adhesive material, such as dextrine.

The original picture, thus backed, is then placed upon the press with its outlines corresponding to that die—which is effected with the aid of the register marks in the well-known way—and then the head of the press is brought down with considerable pressure, and after remaining under that pressure for a few seconds, the picture can be removed and it will be found that the predetermined picture has been permanently raised and given the effect of a bas-relief. The picture, and the backing of the picture (as the adhesive material holding it to the picture dries) permanently retains the partial relief and prevents the same being again flattened. Allowing Scopes, Dalton House, Dalton Park, Ipswich, and Allington Limited, 115, Newgate Street, London.

The following complete specification, etc., is open to public inspection before acceptance under the Patents Act, 1901:—

**CINEMATOPHONES.**—No. 11,395, 1908. Apparatus for protecting cinematographic bands or films against conflagration. Letourneau

## New Trade Names.

**PELICAN.**—No. 302,333. Chemical substances used in manufacturing photography, or philosophical research, and anti-corrosives, not including sulphate of magnesia, sulphate of lime, aluminium chloride of zinc, and not including any goods of a like kind to those excluded goods. Fritz Beindorff, trading as G. Wagner, 80, Milton Street, London, E.C., ink and colour materials. April 15, 1908.

## New Materials, &c.

**"Satin-Surface" Zigo Self-Toning Paper.** Made by Thomas Illingworth and Co., Ltd., Willesden Junction, London, N.W.

This new variety of the well-known "Zigo" paper should be received with approval. Its surface has the fine matt texture kind commonly described as "carbon." The sample sent to which we have found to tone in the hypo bath in the customary "Zigo" manner—is of a faint mauve tint which contrasts in striking manner with the rich brown of the print. A cream-toned paper would, we think, lend itself to the tone given by the "Zigo" emulsion when prints of a more harmonious character are aimed at. Messrs. Illingworth, who already issue such cream paper in a series of their manufactures, might consider the advisability of applying it also to "Zigo." Meanwhile we can advise applicants to them for a specimen print on the new paper, which is sold at the prices of the other brands of "Zigo."

**BRUSHES FOR THE OIL PROCESS.**—Messrs. John J. Griffin Sons, Ltd., of Kingsway, W.C., have sent us samples of two brushes which they are now supplying for the oil and brush processes. The "Prima" is a fine hog-hair brush mounted on handle and ferrule of convenient shape. This brush is issued in three sizes:—No. 2, 1s. 3d.; No. 6, 1s. 9d.; and No. 10, 3s. 6d. The other is a fitch-hair brush issued as the "Gradator." It is with a metal tube or sleeve which protects the hairs when the brush is not in use, and also permits of the worker obtaining more or less softness in the hairs by pulling out the "sleeve" to greater or less distance. The sizes and prices of the "Gradator" are:—No. 2, 1s. 6d.; No. 6, 2s. 6d.; and No. 10, 5s. Particulars



se and other materials for the new pigmenting processes are available from Messrs. Griffin.

**LEOPOLD PLATONA PAPER.**—Messrs. Ilford, Ltd., announce a reduction of price in their platinum paper, which in future is sold at per tin of two sheets, 24½ x 17, or 1s. 3d. per tin of twenty quarter-plate pieces.

**TRADE PRINTING.**—A price list of trade printing and enlarging reaches us from Mr. B. Matthews, 104, Idle Road, Bradford. The list gives the prices for bromide postcards, black and sepia, carbon arguments, and bromide enlargements finished in black and white. Mr. Matthews, if we may judge from some sheets of postcards which he has sent us, turns out good work at a moderate price.

### CATALOGUES AND TRADE NOTICES.

**MESSRS. BOOTS,** of 29, Farringdon Road, London, E.C., in issue the 1908 edition of their annual catalogue, have introduced a new feature in the form of a literary section. This includes, amongst a quantity of other useful information, notes and hints on the use of short-focus lenses, enlarging on bromide papers, instructions for working "Carbograph," hints on the use of various makes of papers, on mounting, on passe-partout framing and mounting, several useful tables. The section devoted to the description of prices of photographic apparatus, materials, accessories, etc., is well illustrated and comprehensive, and the whole forms a useful guide for the amateur worker, both for choice of apparatus, and useful hints as to its use.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

SATURDAY, JUNE 13.

**LEWIS PHOTOGRAPHIC SOCIETY.** Excursion to Welford.  
**NEWCASTLE PHOTOGRAPHIC SOCIETY.** Excursion to Bookham.  
**SEA AND DISTRICT PHOTOGRAPHIC SOCIETY.** Excursion to Hayes Common and Keston.  
**WIMBORNE PHOTOGRAPHIC SOCIETY.** Excursion to Charwelton and Badby. W. F. Dawson.  
**A SUBURBAN PHOTOGRAPHIC SOCIETY.** Excursion to Otford and Shoreham. P. T. Edwards.

MONDAY, JUNE 15.

**HAMPTON CAMERA CLUB.** "'Tabloid' Photography." S. G. Kimber.

TUESDAY, JUNE 16.

**LEWIS PHOTOGRAPHIC SOCIETY.** Opening of a One-man Exhibition, by W. Bennington.  
**CHESTER AMATEUR PHOTOGRAPHIC ASSOCIATION.** "Oil Printing" Demonstrated. Rev. H. W. Dick, S. L. Coulthurst, and J. J. Phelps.

WEDNESDAY, JUNE 17.

**SEA CAMERA CLUB.** "Figure Studies." A. Cohen.  
**MIDDLESEX PHOTOGRAPHIC SOCIETY.** "Oil Printing." H. Stuart.

THURSDAY, JUNE 18.

**SEA AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.** "Why and How it was Done." Ernest Human.  
**SEA SOCIETY.** Short Papers.  
**LEWIS PHOTOGRAPHIC SOCIETY.** "The Law of Photographic Copyright." S. S. Taylor.

**CENTRAL TECHNICAL COLLEGE PHOTOGRAPHIC SOCIETY.**—At the meeting held on May 27 a paper on "Some Points in the Design of the Photographic Objective" was read by H. C. Patey and V. H. Kinney.

The authors attempted to give a simple explanation of the causes of the six-lens aberrations and of the means which are adopted to get rid of them in photographic lenses. The function of a photographic lens is to give over a fair sized angular field of view sharp definition over a flat surface, and as a lens system it may be regarded as lying between the systems of the telescope and the microscope, which gives images respectively by means of very narrow or very wide incident pencils. The conditions of perfect, or collinear, relations between object and image were then discussed, and the uses and limitations of the pinhole mentioned.

An example of work done with a pinhole was submitted, and the following formula given (allowing for the effects of diffraction) for the best working distance D of plate from pinhole:—

$$D = \frac{P^2}{0.00064}$$

where P is the diameter of the pinhole in inches. Against the advan-

tages the pinhole possesses of freedom from distortion and flatness of field must be set that of slowness, a slowness which becomes impracticable for portrait subjects, and also want of definition. To get greater rapidity it becomes necessary to utilise a lens which, while receiving a larger cone of light, introduces special defects of its own, which defects or aberrations were next considered.

### THE SIX ABERRATIONS.

**AXIAL.**—(1) Chromatic. (2) Spherical.  
**OBLIQUE.**—(3) Coma. (4) Astigmatism. (5) Curvature of field. (6) Distortion.

Chromatic aberration, due to the dispersive effect of glass on white light, is corrected by combining a positive crown lens of comparatively low dispersion with a weaker negative flint lens of higher dispersion.

Light incident to a spherical surface of glass is not brought to a single point focus, the defect being known as spherical aberration. The correction depends, not on the power (or focal length) of the two lenses in a combination (as does achromatisation), but on the relative disposition of their curvatures. A point lying on the principal axis of a lens is correctly defined by a lens system corrected for these two aberrations, but points removed therefrom render necessary the consideration of the oblique aberrations of coma, astigmatism, curvature of field, and distortion.

Coma is an asymmetrical spherical aberration, the effect of which on the image was shown by means of a slide of a photographed disc, perforated with small holes. It is corrected in lens systems by means of the doublet arrangement.

Astigmatism, the cause of which is the different effective powers of a lens on the various meridians of an incident oblique beam, while the result is two focal lines in the image of a point object, was explained by means of a model of silk threads.

Between the two focal lines due to astigmatism are the circles of least confusion, the nearest approach to a sharp image, and the figure containing these circles of least confusion is the curvature of the field of the lens.

The condition that a combination of the two lenses should have a flat field makes it necessary that the positive crown lens, while having a lower dispersion, should have a higher index of refraction than the associated flint, and this condition, while impossible with the old crown and flint glasses, can be approximately fulfilled by using certain modern Jena glasses. Distortion is caused by a lens or system of lenses having spherical aberration in respect to the stop and the image which the lens may be said to form of the stop, and is approximately corrected in any doublet system.

In conclusion a rough sketch of the means adopted to get rid of the above aberrations in a modern anastigmat lens was given, starting from the basis of two similar single lenses, symmetrically placed about a stop.

## Commercial & Legal Intelligence.

**A NORWICH BANKRUPTCY.**—A meeting of the creditors of Alfred Ernest Priest, photographer, of 21A, Prince of Wales Road, Norwich, and residing at 51, Sprowston Road, was held at the office of the Norwich Official Receiver on Saturday. The debtor's statement of affairs showed gross liabilities £407 7s. 2d. and a deficiency of £359 8s. 9d. Debtor, who filed his own petition in consequence of several judgments having been obtained against him, attributed his failure to "competition in the photographic trade, and losses in my ventures as a lanternist and entertainer." He commenced trading at 129, Magdalen Street, Norwich, in July, 1904, having previously been a watchmaker's assistant. He had no capital, but was in debt to the extent of £70. During the whole of his trading, and before, debtor had undertaken the responsibility of arranging animated picture and variety entertainments throughout the district, and the greater part of his liabilities had arisen in connection with these ventures. Early in 1907 debtor took over a photographic business at 21A, Prince of Wales Road, Norwich, paying in cash and goods about £80 for the apparatus, unexpired lease, and goodwill, and the Magdalen Street premises were given up a few months later. The debtor has kept no books beyond diaries, but he admits having been aware of his insolvent position during the whole of his trading.

Recently, when pressed for cash, debtor is alleged to have sold the more valuable part of his goods and appliances, some of which had not been paid for. Part of the furniture is claimed by the debtor's wife, as having been purchased with her savings. The estate remains in the hands of the Official Receiver as trustee.

## Correspondence.

*\*\* We do not undertake responsibility for the opinions expressed by our correspondents.*

*\*\* Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*

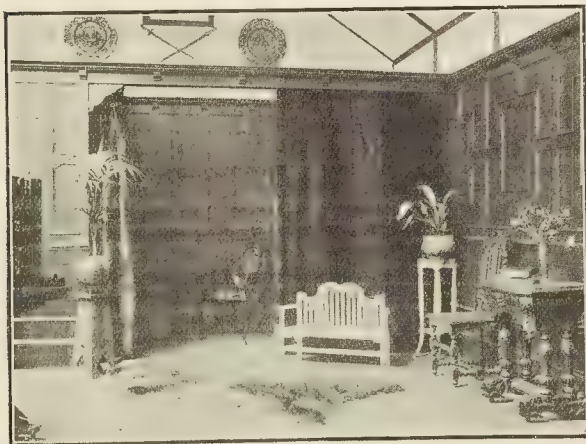
### STUDIO DECORATION.

To the Editors.

Gentlemen,—I have been following with interest the article running through the "B.J.P." on studio decoration and construction,



as for the last several weeks I have myself been altering an old matchboard-lined studio—through the shrunken grooves of which dust blew with the least wind—into a presentable and useful studio. I now enclose you two photographs, taken each end, showing the



same studio finished in imitation oak by Messrs. F. E. Jones, of Gray's Inn Road, which has a most realistic effect and the advantage of dust-proof ceiling. In No. 2, the left-hand corner is the changing-room, but by carrying a beam right across the studio it not only kept the

cornice line continuous and pleasing, but made a good support curtains and a darkened recess for a heavy-toned background. Of the great points in its favour is the cheapness, when the effect is considered from both a decorator's and photographer's point of view, as one can practically photograph all round the studio with various effects.—I remain yours truly,

GORDON CHASE (late of Tunbridge Wells)  
1, Princes Avenue, Muswell Hill, N.

### THE PHOTOGRAPHIC CONVENTION.

To the Editors.

Gentlemen,—I shall be glad if you will allow me, through the medium of your columns, to ask those members who have not already advised me of their intention to attend the Brussels Convention kindly to let me hear from them without further delay.

I am anxious to do all I can for their comfort and convenience, but certain arrangements have to be made on the Continent, which cannot be hurried, and it will greatly facilitate matters if I know well in advance, how many are likely to be going, and by what route they intend to travel.

I may mention, perhaps, that the meeting promises to be unusually large, indeed we have already nearly 60 absolutely new members on this side of the Channel alone.—Thanking you in anticipation, remain, Gentlemen, yours truly.

F. A. BRIDGE, Hon. Sec. and Treas.  
East Lodge, Dalston Lane, London, N.E.

## News and Notes.

HER ROYAL HIGHNESS THE PRINCESS OF WALES on June 10th honoured Mr. Langfier, Court photographer, 23A, Old Bond Street, W., with a special sitting.

"PAR EXEMPLE."—

An English girl living in Gand  
Was asked to oblige with a song;  
When asked what she'd sing,  
She said: "God Save the King."  
The Convention is coming; "c'est bon."

SCOTTISH FEDERATION EXCURSION.—On Saturday last the annual excursion of the Scottish Photographic Federation was held at Stirling. The excursionists were met by Messrs. P. D. I. (Secretary), R. K. Holmes, and J. J. Munro, the Excursion Committee, and enjoyed a walk to the Castle via the Back Walk. The sunlight filtering through the trees on the walk tempted not a few exposures. At the Castle permission had been granted to photograph by Major Mackenzie, M.V.O., and the party had the benefit of Mr. Shearer, well known as the publisher of the popular guide to Stirling. He pointed out the salient features of the ancient fortress, and was most helpful to inquiring ones. Mar's Work, Guildhall, and some of the closes around the Castle formed favourable subjects for the camera, and in due time the Golden Lion furnished food for the body. Major Mackenzie presided, and welcomed the visitors in a few felicitous words. Mr. A. Symon, M.A., B.Sc., President, spoke the thanks of those present to the Major, and Mr. Drinkwater performed a like duty to the Excursion Committee. Messrs. Holmes and Nairn acknowledging. A drive formed the afternoon programme. On past old Stirling Brig, skirting the foot of Abbey Craig to Airthrey Castle, open by kind permission of Mr. Graham. Here the reflections of the Wallace Monument in Loch, and a herd of Highland cattle kept the photographers cool, and it was with difficulty that a start could be again made. An endeavour was made to get a "group" (Mr. Dan Dunlop being the camera), but so anxious was everybody to secure masterpieces that a full muster was impossible. Cambuskenneth Abbey claimed attention, and while the architecturally inclined photographed the relics of the past, the "arty" folks stalked with patience and varying success a herd of surprised cattle. A cup of tea in the Golden Lion Hotel made a pleasant ending to a pleasant day, and so the fifth excursion became a thing of the



## Answers to Correspondents.

Matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 2A, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.

Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.

Communications relating to Advertisements and general business matters should be addressed to MESSRS. HENRY GREENWOOD & Co., Wellington Street, Strand, London, W.C.

For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 2A, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1d. each photograph, to cover cost of registration fee, form, etc. Unmounted copies of each photograph must be sent with the

### GRAPHS REGISTERED:—

Thomas, Show Van, Lowcock's Yard, Great Clowes Street, Salford, Lancashire. Photograph *Lady with Long Hair*.  
 Edie, 416, Union Street, Aberdeen. Photograph of *Marischal College, Aberdeen University*.

—1. Rogers and Webster, High Holborn, London, W.C. do not know the method. The results are very similar to

—2. The firm has no house here. Mr. Baker, we believe, is in Australia. Your best course is to write to Melbourne.

—3. I should be much obliged if you could advise me on this question. I am selling a lot of photographic cards, taken by me. I do not copyright them. Now I find a large postcard dealer making penny ones from same. Please say the best way to their sale, if possible.—R. C.

—4. You need do is to register your copyright in the photographic. This will enable you to stop further sales, but not to prevent penalties in respect of sales before registration. If you wish your publishers can effect the registration. See notice at the bottom of this column.

—5. COMES.—1. I have been getting a brown stain on my Autochromes, and have traced it to the permanganate (c) bath, which I have made up some time. The remedy, I suppose, is to make a weak solution of oxalic acid. If so, what strength? Will Autochromes stand this? 2. Would you kindly give Messrs. Lumière and Leitz's formulæ on page 45 "B.J." Colour Supplement, June 5, 1907, in solid and fluid ounces? Also reduce ammonia .920 to the strength .880.—H. F.

—6. Oxalic acid is the best remover of the permanganate stain. 2. Formulæ are:—

Water .....	3½ oz.
Bisulphite or soda liquor .....	2 drops.
Pyrogalllic acid .....	46 grs.
Potass bromide .....	46 grs.
Water .....	2½ oz. 116 minims.
Soda sulphite anhydrous.....	154 grs.
Ammonia .880 .....	½ oz. 32 minims.

Use, dilute BB to quarter strength—i.e., 1 oz. with 3 ozs. water. For a half-plate take water, 4 ozs.; A.A., ½ oz.; B.B. (or strength), ½ oz.; and use at 60 deg. Fahr. Place at hand for use 2½ ozs. of solution B.B. (quarter strength).

—7. None.

—8. HAPLIN and others.—In our next.

—9. 1. If the negative is sold with assignment, in writing, copyright, the latter is destroyed. 2. The copyrights having been null and void, you (or any one else) can copy a portrait and retain copyright in your copy. 3. We believe not. It is a point.

—10. 1. Yes, certainly. You yourself can publish or through a house. You had better get prices of cards, say from Hood & Co., St. Bride Works, Middlesbrough, or the London Studio, 10, St. Bride Street, London, E.C. 2. Yes, certainly.

—11. GELATINE.—In the course of some experimental work I have done I require to stick down a small piece of thin hardened paper on to a piece of polished metal so as to be transparent

and show the metal through. I have unsuccessfully tried several ways as follows:—Copal varnish would not dry under film; coating of bichromated gelatine solution (substratum) peeled off when dry; fish-glue, smeared on with a drop of bichromate solution, would not become sufficiently insoluble, but came off in water. (It was exposed to sunlight when dry.) 1. I think something like Canada balsam might do it, but I don't know how to use it, and should be glad of advice on the matter. 2. A formula for sticking paper to metal is given in "B.J. Almanac" (gum and aluminium sulphate solution); would this be suitable for my purpose, and what is the purpose of the aluminium sulphate?—FILMO.

1. What you desire to do is not a very easy thing, if the metal is highly polished. The method of using Canada balsam is given, in reply to a correspondent (W. Creasey), on page 428 of the JOURNAL for May 29. It is there given for the cementing of lenses, but that will give you the way it is used generally, and it may possibly answer your purpose. 2. We should advise you to try it. The object of the aluminium is to give extra hardness to the cement. We should think your best way of getting what you want would be to apply the gelatine in a fluid state, instead of attempting to cement a dried film to the metal. Whatever method you use, it is imperative that the metal must be thoroughly clean, that is, absolutely free from all traces of grease used in the polishing, otherwise the film will split off when it becomes thoroughly dry.

ALBUMEN AND COLLODIO-ALBUMEN.—Is there any actual difference between the collodio-albumen and the albumen processes, or is it only in the names? My reason for asking the question is this? In reading the details of the albumen process I see that the glass is coated with iodised collodion before the albumen is applied, and it appears to me that the sensitive film must be a compound of iodide of silver in collodion, and iodide of silver in albumen, so why is this called merely the albumen process?—INQUISITIVE.

The two processes are different. In the collodio-albumen process the plate, after coating with collodion, is sensitised in the silver bath, as in working the collodion process. It is then washed and coated with the iodised albumen, dried, and again sensitised in a silver bath. You will now see that there are two sensitised coatings on the plate—one collodion and one albumen. In the albumen process the collodion only acts mechanically as a substratum, as all the iodide is washed out of the film before it is coated with the albumen. The reason for using old iodised collodion for the substratum is that such collodion is of a more porous character, and allows the albumen to permeate it better than plain collodion would do. Collodio-albumen is more sensitive than albumen.

PEDLARS ACT.—I have been a photographer for over fifteen years, but now, unfortunately, I am in very low water. For the last year I have been getting my living, such as it is, by visiting the villages of Somersetshire and obtaining orders for taking portraits of the villagers. Being a good photographer, I supply better pictures than the general run of itinerant photographers, and keep my promises as to the time of the delivery of the portraits. In this way I find my work slowly increasing, as I visit the places periodically. One day last week I was stopped by a police sergeant, who asked to see my pedlar's licence, when I told him that I was a photographer. He then said that if he caught me again working without a licence he should take me before the magistrates. Will you kindly say if the law requires a photographer working as I do to hold a pedlars' licence? I may add that I only take a small deposit in the first instance, but with those I have done pictures for before I do not ask for one.—BROKEN DOWN.

Yes, the way you do your business certainly brings you within the Pedlars Act, and you require a licence. It is only quite recently that the police have troubled about itinerant photographers. This is probably due to large numbers of so-called "photographers," who are infesting country places and committing more or less fraud on the inhabitants.

INDUSTRIAL ALCOHOL.—Will you please inform me if there is any difference between industrial alcohol and the ordinary methylated spirit of the shops. I want some methylated spirit, but it must be free from the mineral spirit which I believe the latter contains.—T. WALTREV.

The ordinary methylated spirit contains 10 per cent. of wood naphtha and a certain percentage of mineral spirit. The indus-

trial alcohol contains but 5 per cent. of wood naphtha and no mineral spirit. To purchase this a licence from the excise is necessary. No charge is made for the licence, but a bond has to be entered into that the spirit is only used for the purposes the licence specifies. Then the spirit must be purchased direct from an authorised methylater in quantities, the minimum being, we think, ten gallons. The local Excise Officer of your district will give you all particulars.

**COPYRIGHT.**—I have had a photograph brought to me to make an enlargement from. It is stamped copyright. It is of the customer's mother, and I said that if the picture was copyright I could not execute the order. He said he knew nothing about any copyright in it, as he took his mother to the photographer's to have her portrait taken, and he paid for it in the ordinary way, and the prints were sent to him.—R. C. J.

If the facts are as stated, the copyright belongs to the son who paid for the taking of the portrait. Therefore, the picture is illegally marked copyright, and you may, of course, execute the order for the enlargement, or make any copies of it that may be required. It is illegal to mark a photograph "copyright" in which no copyright exists, as it claims a monopoly that is not possessed. In the case of patent, anyone who marks a thing patent when there is no patent in it renders himself liable to a heavy penalty. Some few photographers, we are aware, mark pictures copyright in which they hold no such right, but so far as we can call to mind they have, as yet, not been proceeded against for this illegality.

**CHONDRIIN.**—I want some pure chondrin for some experiments I am going to make. Will you please say where it may be had, and its price?—T. CHILDS.

Chondrin is not an article of commerce, and we do not know how you can obtain it. Chondrin is gelatine made from cartilage, and some gelatines contain it in large proportions.

**SALE OF INVENTION.**—I have made an invention (a new kind of apparatus which I think will prove of some value), but I have not the capital to put it on the market, or the money to spare for a patent. If I offer it to any of the large houses they will see what it is and perhaps exploit it without my getting anything for the invention at all. Any information you can give me as to how I may obtain some remuneration for the invention I shall be thankful for.—INVENTOR.

The best advice we can give you is that you obtain a provisional protection, which will only cost you one pound, and will give you invention protection for six months before the complete specification need be lodged. In the meantime you can show the apparatus to as many as you like, and negotiate for the sale of a patent for it.

**BELLOWS OF CAMERA STICKING.**—The bellows of my camera—a whole-plate one—when it is put away out of use for a week or two sticks together when opened, and, at times, I have a difficulty in separating the gussets. Can anything be done to prevent this, as I am afraid that the bellows will get damaged each time it is opened. Would oiling the bellows do any good?—G. W. ROBERTS.

We should certainly not advise you to apply oil to the bellows, which would make it messy to use, and, after a time, do injury. The best treatment will be to well rub the gussets over with French chalk each time the camera is put away. With this treatment, after a time, you will probably find that the varnish on the bellows will have lost its tackiness.

**BUILDING LAWS.**—I am having a studio 25ft. by 12ft. put up in the garden here for professional portraiture. A few days ago the town surveyor came, saw the building, and has since ordered it to be taken down forthwith, or proceedings would at once be taken. The studio is of wood and glass only, no brickwork. It is 6ft. from the back of the house, and 2ft. from the garden walls at each end. A friend tells me that the Building Act cannot compel me to pull the studio down, as it is not infringed. Another says that if I put wheels under the building that will get me out of the difficulty. What is your opinion?—QUANDARY.

Our opinion is that if the town authorities have condemned the building you will have to take it down. Different towns have different building by-laws, and one may fairly surmise that, according to them, the authorities are within their rights in ordering the studio to be pulled down. It would be of no use,

as your friend suggests, to put wheels under the building. The best advice we can offer is that you interview the town surveyor and learn from him if any modification can be made in the thing so as to conform with the local by-laws.

**INJURED STUDIO.**—I have the above premises on a seven-year lease—two still to run—I to do all necessary repairs. There is on the top of the house and much exposed. During a gale a few weeks ago the wind did much damage to the several panes of glass were blown in, and one sash bar was broken quite through. In fact, the studio is almost a wreck until repaired. I have seen the landlord and asked him to do the necessary repairs, as the damage was not due to fair wear and tear. He repudiates the claim, and says I must do all the necessary. As the damage was done by the wind, is not it classed as "an act of God," and he (the landlord) become liable to do the repairs?—POOR PHOTO.

We do not see that you can call upon the landlord to do the repairs. You hold the premises on a repairing lease, and it is to us that it was for you to see that the studio was kept in sufficiently strong state to resist the wind, even in a strong gale. Had the place been wrecked by, say, an earthquake, the result might be different. As it is, we surmise, the loss will fall on you.

**VARNISHING NEGATIVES.**—Will you please tell me if the varnishes sold for varnishing negatives, such as those the formulae for which are given in the "Almanac," can be applied with a brush. I find that when I pour it on, as directed, making the negative hot, I get as much on the back as the front, and nothing of what gets on my fingers and hands.—ALF. C. SYMONS.

The varnish may be applied with a broad camel-hair brush that will entail a great waste of it, as well as of spirit for drying the brush for future work. The simplest and most economical way of varnishing negatives is to flow the varnish over them in the usual way. It requires no special skill or knack. The difficulty has, probably, been due to the negative not being thoroughly dry before the varnish was poured on. Or, possibly, the plate was made too hot. If that was the case, the varnish would not flow freely over the gelatine film. The plate should not be made more than just luke-warm; then the varnish will flow freely, and, when the surplus is drained back in the bottle, the plate should be made as hot as the hand can well bear.

**MAGIC PHOTOGRAPHS.**—Will you kindly tell me how to make what are called magic photographs? A customer of mine has some shown recently at a children's party. A piece of paper, says, was shown on which nothing could be seen, but when pressed between sheets of damp blotting-paper a portrait, a grotesque picture, appeared, which was evidently a photograph. My customer wants me to supply him with similar pictures.—PROVINCIAL.

A print is made in the ordinary way, preferably on albumen paper, fixed and washed, but not toned. It is then put in a solution of bichloride of mercury until the image disappears, is again washed and dried. Some blotting-paper is saturated with a solution of hyposulphite of soda and also dried. To reproduce the image the blotting-paper is moistened with water, and the invisible photograph pressed in contact with it, when the image at once appears.

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## SUMMARY.

Method of preparing the half-tone block by direct exposure in camera or directly from a negative has been worked out by Mr. Payne. (P. 468.)

According to reports from several sources, manufacturers and dealers of photographic goods in Germany are feeling the effects of the war, and are leaving no stone unturned to get business from foreign markets. (P. 467.)

Professor G. H. Bryan has published a description of a system of calculating photographic exposures in which only numerical addition is employed. (P. 476.)

The Blenheim Club, which on Monday last transferred itself to the new Rooms, had a veritable house-warming in the shape of a dinner which broke out on the top floor. (P. 479.)

Self-portrait shutter release, a posing accessory, daylight loading, and photo-pendants are among the patents of the week. (P. 478.)

Dr. Sheppard's lecture (the second) on the chemistry of colloids dealt with the structure of gels and the phenomena of dialysis, which many colloid bodies exhibit. (P. 469.)

W. Scheffer has made a further microscopic study of the action of reducers upon the gelatine plate. (P. 472.)

The half-made reversing C solution would appear to be the secret of the fading stains on Autochromes. (P. 465.)

The recent annual report of the Patent Office shows that there has been a considerable abatement of the number of applications for photographic patents. (P. 465.)

## EX CATHEDRA.

### Permanganate Stains on Autochromes.

We have had several queries with regard to the prevention of stains produced by the permanganate reversing bath, and it appears that many meet with this trouble and endeavour to obviate it by the use of other solvent solutions. In our experience such stains are easily avoided by using fresh solutions only. A permanganate and acid solution that has been mixed for some little time stains very readily, but if the two ingredients are kept separate until the time of use then a stock permanganate solution will keep well for at any rate some weeks. After a month or so it will begin to produce stains even if the acid is only added just before use. The secret of success is then only to use a recently made up permanganate solution and to add the acid just before use. As regards other solvents, we are doubtful if there is anything that can be described as better than the one recommended by Messrs. Lumière. In our hands it has always worked excellently so long as we observed the precautions suggested above, and did not attempt to use it more than once.

\* \* \*

### 4,154 Photographic Inventions.

The twenty-fifth report of the Comptroller-General of Patents, Designs, and Trade Marks, which has just been issued, details noteworthy information regarding the progress of patented inventions. The latest available figures given show that the average number of complete specifications published each year in the class devoted to photography continues high. From the years 1855 to 1883 the average number of specifications published per year was only 16, whereas the quinquennial averages per 12 months for the first twenty years under the important Act of 1883 were:—1884-88, 89; 1889-93, 146; 1894-98, 161; 1899-03, 208. In 1904 the figures advanced to 232; in 1905 to 235, but in 1906 they fell to 206. The total patents affecting photography for 1855-1906 was 4,154; the average per year (1855-1906) 80. During 1907 the Patent Office dealt with 29,040 applications for patents of all kinds. There were 19,630 provisional and 18,893 complete specifications and 16,272 were sealed. Designs were registered to the number of 24,039 (applications totalling 24,928), and 6,255 trade marks were registered, there being 10,796 applications.

\* \* \*

### A New Photometer.

In view of our recent note on the Rumford photometer a modification of it suggested by W. Biegon von Czudnochowski in the "Illuminating Engineer" for April is of considerable interest. The writer does not seem to be aware of the advantages of the two-rod photometer, as the Rum-

ford photometer that he describes is a single-rod one, that he calls the "Lambert" or "Lambert-Rumford" photometer. In his modification he substitutes a diagonal square network for the rod, and arranges matters so that the shadows of the square apertures overlap and form a series of smaller squares. The shadows are received on a diffusing or semi-transparent screen, and a binocular viewing apparatus is employed so that the shadow image formed by the right-hand light source is observed by the left eye, and that formed by the left-hand light is observed by the right eye. It is claimed that a stereoscopic effect is produced, and that colour differences disappear when the lights are properly balanced. The reasons for this are not quite clear, and an analogy between this apparatus and the "Anaglyphs" of Du Hauron renders the matter even more obscure, but the writer claims for his photometer great sensitiveness, simplicity, and value for the comparison of differently coloured lights. As it can be used on a photometer bench it should be adaptable for photographic density measuring, and therefore it seems worth while to give it some attention. If it has all the advantages that its inventor claims it should be of considerably greater service than some of the photometric devices in common use. It is hardly fair to criticise the device from the very meagre description published, but we should like to point out that if the effectiveness of the photometer depends on the binocular blending of the differently coloured shadows, and this is the only idea that we can gather from the description, then the accuracy of the results will be open to question. The two eyes may differ in colour sensitiveness, and, moreover, colours do not blend binocularly in any very determinate fashion, and when they do blend they do not necessarily give a grey, as the writer seems to suggest. Possibly, however, we are misinterpreting his ideas and arguing from wrong premises.

#### Repairs and Leases.

We are continually receiving queries that show very clearly that photographers, like many other people, very readily get into difficulties through pure ignorance of their legal obligations. A correspondent last week complained that his studio, which he held on lease under the obligation to keep it in repair, had been damaged by a gale, and that the landlord expected him to put it right again. Naturally he would do so, but the tenant states that he asked the landlord to do the repairs as the damage was not due to fair wear and tear, from which we may conclude that he is under the impression either that he is himself liable to make good the effects of fair wear and tear or that the landlord is not. If he had taken the trouble to ascertain what obligations he incurred when he took the studio he would probably have found that the liabilities were exactly the reverse. The tenant is usually exempted by the lease from responsibility for anything that can be classed as fair wear and tear, while if he has entered into a general covenant to repair there is hardly any kind of damage, outside the fair wear and tear, that he cannot be compelled to make good. Even if he has not assented to any repairing clause he will still find himself liable to effect repairs unless he has a definite contract with the landlord to the effect that the latter will repair. The law does not show any particular tenderness for tenants who do not look after their own interests in these matters, and if lessees are not prudent enough to employ a solicitor when taking up a lease they may find themselves let in for undreamt of obligations in the case of any disastrous damage. A rough and ready but safe point of view for the tenant is that he may have to effect at his own expense any repairs that the landlord is not especially compelled by the lease to per-

form. The popular view is more or less the opposite of this, hence many fall into trouble. Everything depends on the wording of the lease, which cannot be scrutinised too carefully, for the things omitted may be of greater importance than those included.

\* \* \*

#### Building Laws and Studios.

A complaint that we very frequently receive relates to the cruel behaviour of local authorities who insist on the removal or drastic alteration of a fine new studio that the querist has just had erected. Such troubles are very easily avoided by proceeding in a business-like manner from the start. The building bye-laws vary in different localities, but a copy of them can always be obtained simply asking for it. If the building is erected in accordance with the bye-laws there will be no trouble, and there is any doubt as to their meaning and requirements it is only necessary to personally submit the drawings to the local authorities, who will in a few minutes point out any mistakes and give all necessary explanations. Owing to want of funds, it is impossible to build in accordance with the bye-laws, the only safe course to adopt is to submit drawings to the County Council, or whatever proper authority may be, and ask for special permission. If the erection is a small one and the proposals involve no obvious danger this permission will generally be granted. If, however, permission cannot be obtained for an 'irregular' building, there is no sensible course but to alter it and make it regular, or else abandon it. Attempts to dodge the laws, such as mounting the erection on a temporary structure, so that it may be claimed to be not a building, will fail, and may prove extremely expensive. Another and very common dodge is the attempt to run up the building when the authorities are not on the watch. This involves a heavy fine for not giving notice, in addition to other expenses, and though often attempted it seldom succeeds. The authorities are, or should be, always on the watch for such proceedings, and if they fail to see the irregularity it is fairly certain that some kindly person will inform them.

\* \* \*

#### Marquois Scales for Multiple Mounting.

A writer in a contemporary has suggested a method of trimming the vignettes on the mounts used in multiple mounting, and this is certainly worth trial. Practically all the Marquois scales used by mounters are draughtsmen's, though the writer does not seem to value or appreciate the use of the proper instruments. Briefly described, Marquois scales consist simply of straight drawing scales and a 60 degree set square. On the hypotenuse of the longest side of the set square an index mark or arrow is stamped, and if this side of the square is kept against the drawing scale, and lines are ruled by the longer of the two ruling sides, then the separation between these ruled lines is always exactly half the distance that the index point is from the scale. If, for example, we wish to rule parallel lines one-eighth of an inch apart, the scale is first adjusted so that one division comes against the index. The drawing scale is then ruled; the set square is slipped along the drawing scale for one-quarter of an inch, and the second line is ruled, the result being two lines exactly one-eighth of an inch apart. The instrument is very simple and extremely accurate. Any scale can be used and any 60 degree set square provided an index mark is placed on the edge. A scratch is sufficient, and a draughtsman can always find his own Marquois scales in a few seconds, though proper instruments are available upon the market at a price adapted to the innocence of purchasers. The advantages of such scales in multiple mounting are obvious.



curious that no one seems to have suggested their use. A large set square is, of course, necessary, and the one used is best if square edged, and of the same size as the set square.

**Trade in Germany.** According to a report (just issued by the Foreign Office) by the British Consul on the trade of Leipzig and Chemnitz, for the year the branches dealing with the manufacture of photographic apparatus and requisites were fully occupied up to the middle of the year. After this, the bad weather did trade unfavourably, and the stock in hand was only cleared off by means of concessions made to buyers. There has been a large over-production of photographic requisites and printing paper, which naturally lowered prices. The system of payment by instalments for articles required for amateur photography continues to cause loss of trade, and the manufacture of studio instruments has been hampered by the institution of photographic branches in emporiums, whereby a number of professional photographers have been thrown out of work. The trade in the manufacture of photographic apparatus and requisites has also during the last months of 1907, the business in photographic reproductions, which is chiefly dependent on the export of picture postcards, having to maintain itself against the crisis in the American market; the duties of other countries are also unusually distasteful, and the export of photographic articles has therefore still more diminished. Further, British American dry-plates, at equal and at even higher prices, have competed successfully with German goods, this being attributed to the low duty in Germany and to the good quality of the foreign output.

#### THE MANUFACTURE OF PHOTOGRAPHIC APPARATUS AND MATERIALS IN GERMANY.

A yearly report of a leading photographic apparatus manufacturing firm, in Dresden, Germany, which has just been published, affords some insight into the present state of the photographic manufacturing business in that country. The profits of this company for the past working year amount to £2,000 15s. (40,015 mark.). It has been decided to invest this sum in the improvement of machinery and in raising the general efficiency of the factory; consequently the shareholders are not to receive any dividend. On account of the slight increase of capital which the published accounts show, this small profit on the year's working leaves much to be desired, especially when one takes into consideration the comparatively large sum invested. Though there is no particular cause for alarm, the directors, nevertheless, seem to consider that some explanation is necessary, and they conclude their report with the following remarks, to which special attention might be called, since they doubtless express what is felt in many another manufacturing business outside of Germany: "If the outlook for the photographic industry is not a generally favourable one, there is still, however, hope that there will be some improvement in the future, especially as competitors will eventually be forced to see that underselling and at the same time increasing the amounts of discounts given must ultimately find its natural bounds; especially in those markets where the demand for goods leaves nothing more to be desired. We hope that in the business year upon which we are entering, should no unforeseen accidents disturb our existing arrangements or other unexpected hindrances occur, to show a much more satisfactory result." In connection with this same subject it may be worth while drawing attention to an article which has just appeared in a German photographic contemporary urging German manufacturers of apparatus and photo-

graphic materials to make a bold bid for the Oriental market, especially Greece. The writer even sees prospects of improving the markets for these goods in the whole of European and Asiatic Turkey, in the islands and lands lying to the East of the Mediterranean Sea, in Egypt and in various parts of Northern Africa. Though English and American goods are at present on the market the business is for the most part in the hands of the French. The reason for this is not only because the French language is spoken and generally understood in these countries, but the French business men have flattered the merchants by learning their language, so that they may speak and correspond with them in it. One point to which this article calls attention is the great advantage of having the price lists, or other commercial literature intended for circulation in these countries, printed in the language of the country, and the prices to be given in the current coin of the particular district. Attention is drawn to the fact that the resident Consul in any or all of these countries can be of great service to firms in getting addresses of commercial houses interested in photographic or other goods; and later, when business relations are about to be established, the Consul is the most reliable source to go to for information concerning the financial position of the house and other particulars regarding it.

There are various signs and indications that German firms engaged in the manufacture of photographic apparatus and other similar articles will in the near future be even more energetic than they have been in the past. One reason for this is that the struggle among themselves is becoming keener and keener, since new firms are constantly being established, and the most natural outcome of this is that markets abroad, which have been more or less commanded by British and American manufacturers, are likely to feel more keenly the pressure brought to bear upon them by German representatives. We do not mean to suggest by these few remarks that German goods are likely to catch all the markets, to the detriment of British goods which are already in popular demand. That can only happen if the British manufacturers fail to grasp the situation before it is too late. Therefore, so far from posing as alarmists, we merely mean to suggest which way the wind is blowing; to give what we feel is a timely warning, and at the same time we hope we may be instrumental in bringing the attention of new firms to what promises to be a good field for their goods. No doubt there is room for all; still, it is well to keep in mind the old motto that "the early bird catches the worm." And what is of equal importance to the business man is the fact that when he has secured his market he must keep a constant eye on his own interests in it, study its changing moods and requirements, and do all in his power to keep his hold and influence on what he has secured.

One peculiarity of the German manufacturer is that he seems to be more anxious to secure foreign markets than he is to monopolise the home markets. Various reasons might be given for this characteristic of nearly all German businesses, but to give some of these reasons would launch us into a more or less political subject entirely out of our province. Still, the fact remains that in order to secure foreign markets German manufacturers often sell their goods abroad at very much lower prices than one can buy the same goods in Germany, and that, in spite of the increased costs of carriage and other incidental expenses necessary to the placing of the goods in the hands of the consumers.

Of late the somewhat coercive methods employed by German manufacturers in supplying their own markets at home have caused much heart-burning. Some of the larger firms are over-capitalised and are working at a loss. This has led to the attempt to form rings, or combines,

which have for their object the cutting out of the smaller manufacturers, and the raising of prices. So far the attempts to monopolise the markets have been mismanaged and some bungling has resulted, causing the various parties to be more or less divided against each other. Professional and amateur photographers have closely followed all that has been going on. They have decided not to wait until they see if order is likely to come out of the chaos, but are preparing themselves to do battle against the manufacturers. Indeed, there has already been one direct outcome of this activity in the shape of a general union of most of the amateur photographic societies in the German Empire. This Union was accomplished in February of this year, and is composed of thirty-five

societies, with a membership of 2,791. It held its first general meeting in Berlin in the middle of April. At the opening gathering the President, Captain Kiesling, explained that the object for which the Union existed was not to attack the manufacturers, but to protect the interests of amateur photographers. The new Union established its headquarters in Berlin, though it has arranged to hold its yearly meetings in different towns within the Empire attended by delegates from all the various States.

Apparently the amateur photographer in Germany possesses an interest in the politics of his hobby which can rarely be discerned in his British prototype. But it may be doubted whether either would take a serious part in the event of a general trade dispute.

## PROCESS BLOCKS BY DIRECT EXPOSURE IN THE CAMERA.

A REVOLUTION in photo-engraving is promised by a new process or method of block-making, which, if not yet fully perfect, is certainly a step towards a goal which process-workers have been trying to reach, namely, the production of a photo-engraved



From negative. With 133-line screen.

plate in the camera without the intervention of a photographic negative. Such a system has obvious advantages in point of economy and speed of working, and therefore considerable in-



From negative of picture. With 65 line screen.

terest attaches to the announcement which we make of a process of which more is immediately to be heard.

The process, as we now roughly outline it, has been worked out by Mr. Arthur Payne, of Newcastle-on-Tyne, well known

as a practical worker in photography, an easy writer on technical subjects, and the technical manager of a dry plate works—a combination of faculties not often met with. The process which is to bear his name is already the subject of application for a patent, and therefore our description of it must be general. Suffice it to say that the process dispenses with the screen negative, and substitutes for it a metal plate, on which, in the camera, the screen image is formed. The plate is then



From negative. With 65-line screen.

An ordinary half-tone impression from a block of this same subject will be found in "E.J." July 6, 1906, p. 531.

treated as to form an efficient resist for the etching bath. Mr. Payne gives fourteen minutes as the average time in which one man can produce a plate (ready for etching) from a negative original. The production of the resist does not involve the use of electric arc light, as in the present method of enameline printing. The apparatus necessary for the operations amounts only to a developing dish and a "whirler," and the process, moreover, has the advantage of being worked in the cold, so



the zinc of the plate is not destroyed by heating, as is the case with the usual enameline processes. As far as the process affects the photo-engraver, it may be said



Portrait of Mr. Arthur Payne. Block prepared by the new process.

the prepared metal plates should be marketable at about the price which is now paid for metal and dry plates. The process-

worker thus pays no more for his material, while he saves time, and the cost of polishing, of fish-glue, of electric light, etc.

The examples shown herewith are from half-tone blocks by the new process, and, though only Mr. Payne's amateur experimental results, they show the "workability" of the process. Moreover, these results are obtained on hand-coated plates. As regards the adaptability to work of different classes, it is found that the process is suitable for screens up to a fineness of 133 lines per inch. It is also fitted for intaglio and relief line work in addition to half-tone printing.

The original in the case of each subject here shown is a negative. The system also includes the making of a positive "process" impression from a positive print, though this process is more difficult and takes a longer time (20 to 25 minutes) than when preparing a positive process impression from a negative.

In addition to its use in process work, this method can be applied to the production of engraved metal plates for use as name plates, illuminated brasses for churches, ship work, engraved dials, engineers' name plates, furniture goods, etc., by photographing printed matter, or line sketches, direct on to the metal plate, which is then etched and the intaglio marks filled in with coloured wax.

It ought also to be an economical process for the production of engraved glass and engraved flashed glass designs much used now by railway companies, restaurants and hotels, tram car advertisements, and similar uses.

The process probably could also be used by calico printers and wallpaper printers.

## THE CHEMISTRY AND PHYSICS OF COLLOIDS.

The following abridged text of the second Bolt Court lecture by Dr. S. E. Sheppard on the Chemistry and Physics of Colloids is more particularly with the properties of gelatine and similar bodies. The third lecture was delivered last evening. "B.J.]"

In the last lecture I endeavoured to present a general, but necessarily rough, picture of the field of colloid chemistry. Dealing with colloid solutions, or hydrosols, we saw that these consisted of extremely fine suspensions of particles in the solvent, the particles being electrically charged. The aggregation of these particles into a solid coagulum may be brought about by a variety of physical and chemical agencies; in some cases a coagulum is redissolvable, in others not. In the first case we are said to be dealing with "reversible colloids," in the latter "irreversible." Furthermore, it was shown that certain colloid solutions—notably those of organic colloids—possessed the property of "setting"—i.e., on cooling they form a gel or solid, partaking of the properties both of solids and liquids. Because these gels are of such great importance both for photographic and photo-mechanical processes, we must consider them in somewhat greater detail. But first a few points touching the preparation and investigation of colloid solutions should be noticed.

### Preparation of Inorganic Hydrosols.

*By Metathesis or Chemical Interaction.*—This method, with conditions giving a precipitate under ordinary conditions, gives a "hydrosol" if the reaction is retarded—e.g.,  $\text{AgNO}_3 + \text{KBr} = \text{AgBr} + \text{KNO}_3$ , one electrolyte in slight excess. The electrolyte may be removed (a) by washing out, which explains why in precipitates pass through the filter unless washed with water holding electrolyte; (b) by dialysis—(A variety of membranes may be used for dialysis, according to the nature of the liquid—pig-bladder, purified with alcohol, may be used, also parchment of colloidion); (c) by filtration—(Although the colloidal particles pass through ordinary filter paper, they may be removed by earthenware filters of the kind used in bacteriology,

and some conclusions as to the size of the particles may be drawn from their behaviour—cf. R. Zsigmondy, *Zur Erkenntnis der Kolloide*, p. 120. Recently H. Bechold has introduced specially prepared filters, consisting of filter paper impregnated with hardened gelatine or other colloid, which may be used for the separation of colloids).

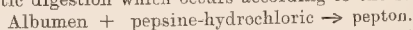
(2) *Hydrolysis.*—Another general method, by which the insoluble hydroxides may be prepared, is by the hydrolytic dissociation of the salts. The salts of weak bases are acted on by water according to the scheme,



the solution becomes acid, and the hydroxide remains in solution or suspension. The acid may be partially removed by dialysis. Conditions favouring the hydrolysis are increased temperature and dilution.

(3) *Action of Reducing Agents on Salts of the Noble Metals.*—This was the method used by Carey Lea to prepare soluble, allotropic silver. By its means, in one form or another, most of the noble metals may be prepared in this state—e.g., silver with the reducing agents used in photography (ferrous sulphate, pyrogallol, amido-phenols). In the presence of "Schutz-kolloide," or organic colloids in small traces, which exert a stabilising influence, the preparation is much more certain. Gelatine is especially efficient.

(4) *Peptisation of Gels.*—Many gels have the property of liquefying with quite minute quantities of an electrolyte and giving the hydrosol. The name is given owing to the analogy with pancreatic digestion which occurs according to the scheme



From this analogy it has been proposed (B. Szilard, *Beiträge zur Allgemeine Kolloidchemie*) to term the peptising electro-

lytes "pepsoides." Thus silicic acid gel was shown to be peptised by minute quantities of caustic soda by Graham.

(5) *Electric Dissipation or Zerstäubung*.—It was shown by Bredig that if a small arc is passed between poles of a metal in well-cooled aqueous solution, the particles from the cathode form a colloidal solution. By this means hydrosols of most of the noble metals may be obtained, and Svedberg has obtained solutions of the light metals in organic solvents.

### The Ultramicroscope.

The formation of colloid solutions by the dissipation into dust of the cathode is another argument in favour of the view that these consist of suspensions of fine particles, albeit ultra-microscopic. But it is possible to bring this to a direct test, for, although the particles are too fine to be seen themselves, they may be rendered visible. There is a theoretical consideration which expresses the practical limit to our optical division of things seen. The condition that two points should be optically resolved by a microscope system is given by the formula

$$e' = \frac{\lambda}{2n \sin \alpha} > \frac{\lambda}{2a}$$

where  $e$  is the distance between the points required to be separated. This formula is based on the application of the theory of the grating made by Helmholtz, Rayleigh, and notably Abbe. In explaining the terms, we may suppose the space between the object and objective entirely filled by homogeneous matter having a refractive index  $n$ , then  $\lambda$  represents the wave-length of light for the radiation employed. If  $\alpha$  is the angle subtended by a point of the object on the lens of the objective, then  $n \sin \alpha$  is called the "numerical aperture" N.A. =  $a$ . It will be seen that we can increase the resolving power—i.e., make  $e$  smaller, either by lessening  $\lambda$  or increasing  $a$ . The former method is limited by our limited range of vision through the spectrum, but a great extension may be obtained by using photography with ultra-violet light. The second condition, increasing the N.A., is limited by the refractive index of the materials we can employ. In the best dry objectives, where  $n$  is the index of the air,  $\alpha$  reaches 73 deg., for example, and the numerical aperture is 0.95. With cedar-oil immersion objectives, index 1.515, objectives may be made of numerical aperture 1.3 or 1.4.

But the conditions become easier if, instead of proposing to study, under their true forms, the objects considered, we merely desire to render them visible. The sole condition, then, is that the object to be seen be sufficiently remote from others, and that it be self-luminous. Such a point will have in the plane of the image a small field of diffused light standing out against a dark background. The eye will always see it, provided the intensity of this light be sufficient. It is thus that we see the stars, even with the most powerful telescopes. With the naked eye we only see them by night, because the general illumination of the sky in daylight drowns their feeble radiance. Now, just as the telescope, by concentrating more light, enables us to see more stars than with naked eye, so we can employ the microscope to render visible ultra-microscopic objects by concentrating on their images more light than they would give directly. Now, although few objects are naturally self-luminous, we can make them so by concentrating an intense beam of light on



Fig. 1

them, when they scatter or diffuse this light in all directions—i.e., behave as light sources, as you see dust in a sunbeam. Just

as the dust is best seen in a darkened room, so with the scope we require "dark field" illumination—i.e., *no illuminating beam must penetrate into the objective used for observation*. Several methods have been evolved to fulfil this condition: the simplest in theory is by *lateral illumination*; objective B concentrates an intense beam on the specimen which is viewed by the second objective A. This method, refined, is that employed by Siedentopf and Zsigmondy in their first apparatus.

Another method has been evolved by Cotton and Montanari, French scientists. The principle is as follows:—Illuminate the preparation, contained, as usual, between slide and cover-glass, by a sufficiently oblique beam coming from below, the rays of this will undergo total reflection on the upper face of the cover-glass at the air surface, and will be thrown back, none penetrating the objective. The particles on the path, however, will diffuse the light, sending it in all directions, including the microscope. When viewed in such an instrument, the particles appear as small spheres of varying intensity of illumination and colour. They move in zigzag paths, like a swarm of gnats on a fine day. These movements are the same as the Brownian movements of fine microscopic particles.

### The Structure of Gels.

In the last lecture it was stated that gels consist of two portions, one part being a semi-solid wall of the colloidal other (enclosed in the former) a colloidal solution of the other in the solvent. Suppose A be the colloid, B the solvent, we have in the gel walls, or partitions, consisting of much A, little B, enclosing a solution, much B, with little A. The sponge-like structure of gels can be demonstrated in several fashions. It explains certain phenomena in photographic reactions. The cellular structure of gelatine may be shown by coagulation with tannic acid and microscopic investigation, as done by Bütschli. The inhomogeneity is made evident by filling the cells with a substance having a different refractive index. This is shown in the case of gelatine films rapidly dried in alcohol, which frequently show an opalescence, as Lüpcke has pointed out.

Bütschli found that the sponge or foam structure was microscopically visible with agar jelly and coagulated albumen, but not with gelatine. If the albumen is dried, it becomes yellowish with a glassy transparency, and the structure is no longer visible, showing that the walls have fallen together in the desiccation.

Bütschli treated gelatine with absolute alcohol, and dried it on a cupboard at 54 deg. C. The gelatine became white and opaque with gas bubbles, and showed, with a magnification of 3,125 (sponge structure, the elements being of some  $.7 \mu$  = 1-1,000 mm.) in diameter.

Hardy has also shown the cellular structure of gels microscopically under certain conditions—viz., albumen, coagulated with heat, by sublimate, bichromate; silicic acid by hydrofluoric acid, by sublimate, formaldehyde, or bichromate. Gelatine showed a closed network of cells, with concentrations above 7 per cent., when fixed by alcohol or sublimate. But with smaller concentrations, or by the long action of excess of formaldehyde, an open network similar to that of albumen is obtained.

Thin collodion films, after treatment, also show a definite structure in the ultramicroscope. When very fluid collodion are solidified they frequently become white, and the foam-structure can be observed microscopically; the opalescence is attributed by Bütschli to air; the diameter of the elements or pores is  $.8 \mu$ , of the walls, in the mean  $.2 \mu$ .

Cellulose, celluloid, cotton, etc., possess a similar fine cellular structure. This porous formation gives a plausible explanation both for the phenomena of swelling and for the easy diffusion of substances in swollen gels.



### Membranes.<sup>1</sup>

Membranes may be defined as film-like, extended, solid bodies, subject to all the actions under the influence of electro-colloids, temperature, etc., found for the mass, but showing specialised phenomena, when, for instance, separating two fluids. They may be formed by the action of time, without solution of the milieu, on the surface of colloid solutions, at contact surface of reacting solutions, or by deposition. When separating two fluids they may be able to alter the equilibrium between the two in quite special fashions; in this way they act as regulators and valves in organised nature.

### Swelling Phenomena.

It is understood the taking up of fluid by a solid substance without any obvious "chemical" reaction, in the sense of the law of constant proportions. The increase in weight of the system is generally accompanied by an increase in volume. We must distinguish between—

Imbibition by a porous mass with preformed air-filled spaces as with pumice-stone: capillary imbibition.

A porous mass takes up water into preformed hollows, and is filled with a fluid, by endosmosis: imbibition by endosmosis.

A homogeneous mass free from pores takes up fluid by osmotic imbibition. It is questionable if this last category is necessary, if we consider that gels of the nature of gelatine consist of porous masses.

In the first case the swelling depends on surface tension phenomena, in the second we have osmotic effects. For the third or true swelling the following principles have been ascertained:—

A body which can swell can only take up a certain maximum quantity.

This maximum is dependent on the chemical nature of the body, on the fluid, the temperature, and on the viscosity of the fluid.

The swelling is accompanied by an evolution of heat.

The total volume of the swollen substance is less than the sum of its original volume and that of the fluid taken up.

The swelling and its opposite, contraction, depend to some extent on the surface tension between the substance and the surrounding fluid.

Lehmann<sup>2</sup> has investigated the influence of temperature on the velocity of swelling, and finds for the quantities of water absorbed by one gramme of gelatine at various degrees Centigrade:—

Temperature....	1°	3.4°	9°	20°	30°
Water.....	2.43	2.2	3.48	6.28	9.48

The increase in velocity is probably due to the lessened viscosity of the water. Various formulæ have been proposed to express the rate of swelling, but they depend on the mechanical division of the substance. Interesting experiments have been carried out on the swelling of gels in salt solutions. If we arrange them according to their capacity to favour the swelling or hinder it we have—

Barium sulphate, sodium tartrate, sodium citrate, sodium acetate (alcohol, dextrose, cane sugar),

Water,

Sulphates of potassium, sodium, and ammonium, sodium chlorate, nitrate, bromide.

With a solution of salt, and plates of glue, it was found—

The increase of weight is due to the taking up both of salt and water, but the proportions do not remain the same as in solution.

The taking up of water increases at first with increased concentration of the salt solution, reaches a maximum, and then sinks as the concentration still increases.

(3) The amount of salt taken up increases fairly proportionately to the concentration.

(4) A gel already swollen with water takes up more salt than water.

Generally the influence of salts is found to run parallel with that which they exert on the setting power. (See Lecture I.) Wolfgang Ostwald has typified the action of varying concentrations on the physico-chemical properties of colloids by the following schematic curves:—

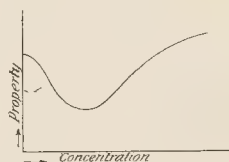


Fig. 2.

### The Theory of Photogravure Etching.

Dr. E. Lehmann<sup>3</sup> has applied these results in colloid physics to explain apparent anomalies in photogravure etching practice. It is known that the velocity of etching decreases with increased concentration of the etching bath, and increases with its temperature; further, that the addition of alcohol slows the action. It has been suggested that this phenomenon is to be explained by considerations of tanning and diffusion. It was supposed that stronger iron chloride solutions tanned the film to such an extent that it became impermeable to the etching fluid. Lehmann points out that this is improbable in that the film has already been tanned by the action of light; such a subsequent tanning may take place, and is sometimes employed in practice, but it would in this case show itself in the thinnest portions by restraining the etching there, whereas these are still attacked by the concentrated solution. To this may be added that from the researches of Lüppo-Cramer on the tanning of gelatine by iron salts, that conditions favouring their hydrolysis, as dilution, favour the tanning action.

Another explanation was based on a supposed slower diffusion of the stronger solution. But this is contradicted by the general law of diffusion, which states that the rate of diffusion is proportional to the concentration gradient. Concentrated iron solutions should, therefore, diffuse faster, and Lehmann found that this was actually the case for concentrations such as are employed in etching.

Actually, Lehmann finds that a dilute etching solution does not really work faster than a concentrated one; it only begins to etch—i.e., to dissolve—the copper sooner, and from the time of starting concentrated solutions etch at least as fast as the more dilute.

Lehmann applies the laws of swelling treated of in the foregoing. Two separable processes take place, the imbibition or swelling, then the osmosis or diffusion of the etching salt, which attacks the copper. The swelling is not proportional to the time, but gets slower as the maximum is approached. The thinner the film, the faster this maximum is approached, and hence the commencement of etching. Hofmeister found that a layer of .2 mm. thickness reached its maximum in five minutes, one of .7 mm. in sixty minutes. And the smaller the absolute thicknesses, the greater do these differences make themselves felt. In heliogravure the thicknesses vary between .015 mm. and .005 mm. As the maximum difference is only .01 mm., only such a rapidly varying condition as the attainment of maximum swelling will explain why a graded etching is possible; differences in the diffusion time can hardly come into consideration with such thin layers, which is supported by the following:—If a copper plate is.

<sup>1</sup> H. Zangger. Vierteljahrsschrift d. Naturforschenden Gesell. in Zürich. p. 501.  
<sup>2</sup> Ann. Phys. 1885 (3) 25 145-153 1885).

(<sup>3</sup>) Zeitschrift für Reproduktionstechnik. 1907. IX. p. 54.

brought immediately after development of the relief and still wet into the iron chloride, this etches it almost immediately, and there is practically no gradation. It is suggested that the partially dried plate might be allowed to soak in water first to obtain softer results from very hard originals. If the swelling is hindered by alcohol, no etching takes place.

When salt solutions are absorbed instead of water, the con-

ditions are more complicated (see foregoing). With treated solutions, especially of hygroscopic salts, the decreases with increased concentration owing to the action of the salt molecules. It is obvious that with iron this effect will be very pronounced, and in this is to be found an explanation of the slower action of concentrated solutions.

S. E. SHEDDEN

## FURTHER RESEARCHES IN THE ACTION OF REDUCERS

DR. STÜRENBURG has recently stated that an alkaline solution of ferricyanide of potassium, reduces in a different manner from the Farmer reducer made up in the usual way. The alkaline solution is stated to act in a more delicate way. I therefore made up a solution in accordance with Dr. Stürenburg's formula, and applied it to the reduction of negative plates. Sections of these films show no difference in local action between the alkaline and the ordinary ferricyanide solutions.

Fig. 1 is a section of a film reduced with the ordinary Farmer

reducer. Next, several plates were exposed for an equal time under the same conditions, developed, fixed, washed, and dried; and were then reduced; some with the usual Farmer reducer, and others with the alkaline solution of Dr. Stürenburg. They were reduced in solutions until there was an equality of intensity in the (most strongly lighted) places. These experiments showed that the action of the alkaline and of the ordinary reducing solution was identical. The conclusion arrived at from the identity of local action in the first experiment was thus confirmed.



Fig. 1.



Fig. 2.

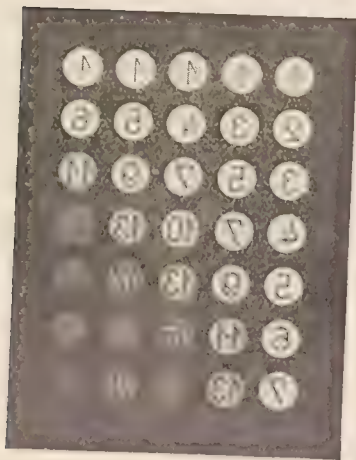


Fig. 3.

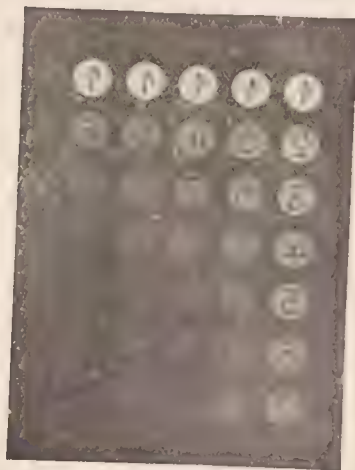


Fig. 4.



Fig. 5.

reducer. We see here the sharply contrasted border of the action which I have formerly described as belonging to the Farmer reducer.

Fig. 2 is a section of a film reduced with the solution made strongly alkaline.

So far as we can see from the microphotographs, this solution has acted in exactly the same way as that which was not made alkaline. According to these photographs it follows that the addition of alkali changes nothing in the action of the Farmer ferricyanide reducer.

Figs. 3, 4, and 5 are representations of photometer negatives, showing the results described.

Fig. 3 is the plate before reduction. Fig. 4 is the plate after reduction with the ordinary Farmer reducer, and Fig. 5 is the plate after reduction with the alkaline ferricyanide solution, according to Dr. Stürenburg.

All my experiments have been made with Agfa plates. I have used both the acid and the ordinary fixing baths, and have employed



various developers. Some of the plates also were treated with various hardening solutions. In all cases the result was the same—namely that the recommended addition of soda to the solution made no perceptible difference in the actions. It is possible that certain kinds of plate might yield another result. I, however, have not succeeded in discovering any influence of the alkaline addition in causing a harsher or more delicate action of the reducer.

Dr. Lüppo-Cramer has, as is well known, shown that the addition

of sulphocyanide of ammonium to the ammonium persulphate solution causes it to act in a similar harsh way as the Farmer reducer. It is worthy of note that in this case the film section (Fig. 6) gives a similar

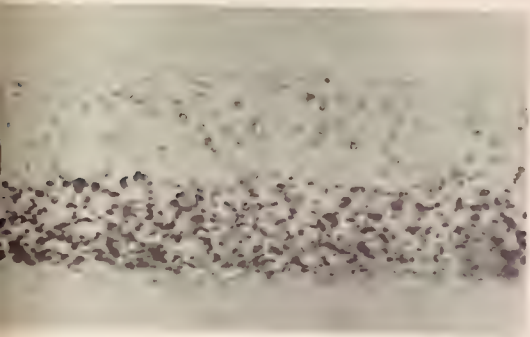


Fig. 6.

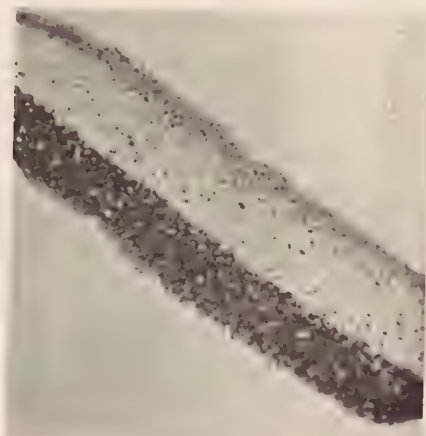


Fig. 7.

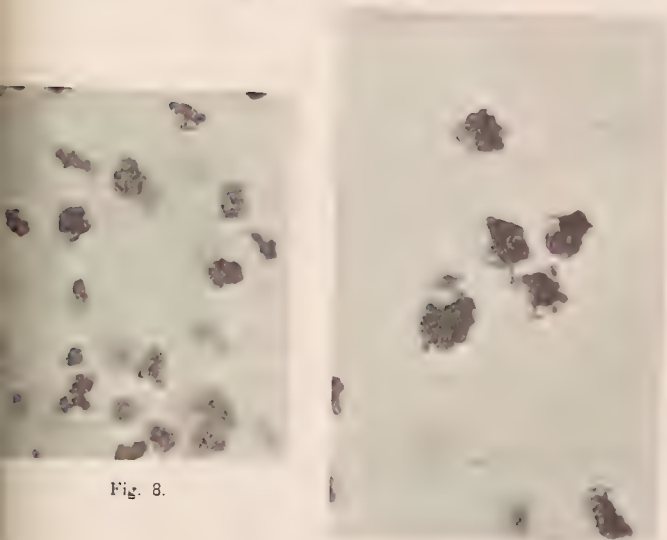


Fig. 8.

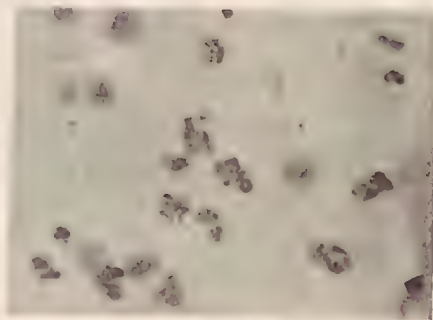


Fig. 9.



Fig. 10.

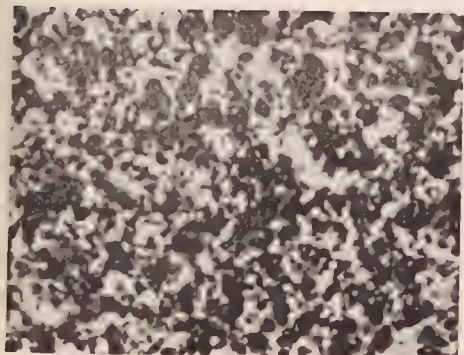


Fig. 11

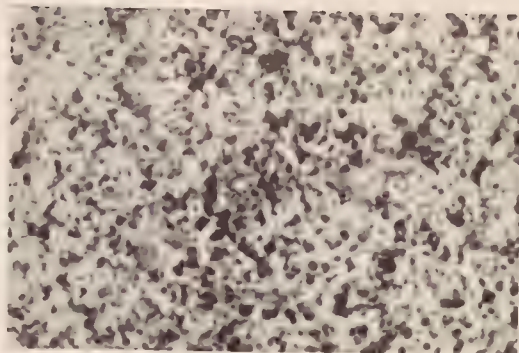


Fig. 12

image to that shown by the ferricyanide reducer. The harshly working permanganate of potash was also investigated by means of sectional inspection. This section also (Fig. 7) shows the harsh edged action which was to be expected. It may be stated generally that the harsh working local action of the reducing agents, displayed in Figs. 1, 2, 6, and 7, is accomplished by a solvent action, that is rapid in proportion to their diffusibility.

Dr. Lüppo-Cramer also states that the black, fully developed grain of the strongly lighted parts of the film behave in a different way in the ammonium persulphate solution from the weakly lighted parts.

Figs. 8, 9, and 10 confirm this statement, and also give for the first time a graphic representation of this noteworthy fact.

show a closely united crystalline formation. Those that lie consist of extremely fine grained separate structures. (Note: minute detail of the negative is somewhat lost in the reproduction.)

The grain in the weaker lighted parts behaves in quite a different way. It is for the most part left unaltered; only at its outer edge we see delicate ring-shaped formations (Fig. 10), which, from an optical behaviour, appear to be highly refractive crystalline. In the weakly lighted places there is no essential difference observed between the upper and lower-lying granules. Apparently the ammonium persulphate is not able to dissolve the developed grain in the weakly lighted (exposed) places, in time sufficient to dissolve the black masses of the strongly lighted parts. These parts

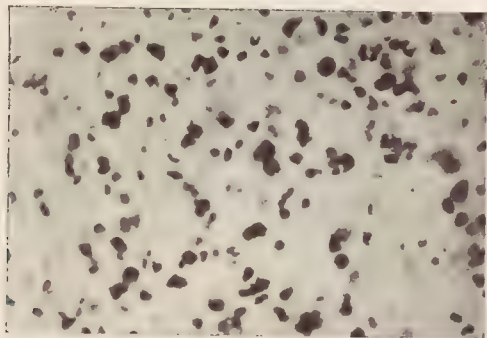


Fig. 13

In these cases a plate was exposed under a photometer scale, and after full development, fixation, and washing, was treated with the ammonium persulphate reducer for so long a time, that the darkest circles had become almost as transparent as the lighter ones. In the previously darkest circles a characteristic brownish coloration then showed itself, whilst the less lighted circles retained their original colour.

Figs. 8 and 9 are representations of the grain in the strongly lighted parts. In place of the black developed grains we see delicate brownish coloured formations. In many of these, especially in the deeper parts of the film, we can see a fine-grained structure. Here and there we see in the remaining undissolved parts of the grain small black portions showing this structure, and lying more in the upper than in the lower stratum.

The difference between the upper (Fig. 8) and the deeper lying (Fig. 9) granular remnants is very marked; whilst the upper granules

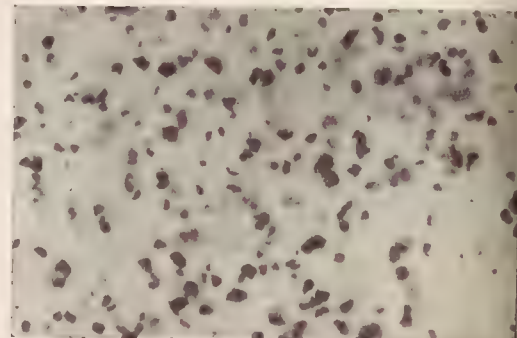


Fig. 14.

make it appear probable that the building up of the grains in the weakly lighted places is different from that of the strongly lighted places. In the latter the grains lying near the surface behave differently from those that lie deeper; in the weakly lighted places there is no difference to be seen between the upper and the lower-lying granules. The fragments of the grain in the weaker lighted portions appear to build themselves a kind of protecting wall against the penetration of the ammonium persulphate solution. It was noticed that the strongly lighted places were, after treatment with ammonium persulphate, no longer soluble in hot water, whilst the weakly lighted places that remained black after reduction were easily dissolved in water that was only warm.

Figs. 11, 12, 13, and 14 show precisely the same places before and after reduction with ammonium persulphate.

Fig. 11 is a strongly lighted piece full of grain before reduction. Fig. 12 is the same piece after reduction by ammonium persulphate.

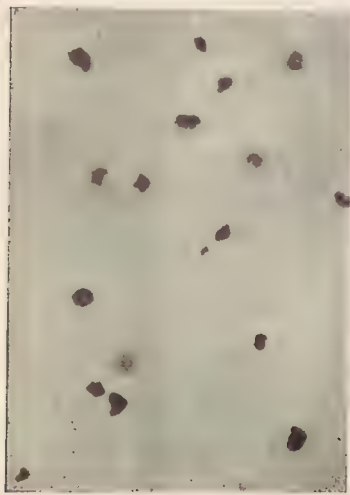


Fig. 15.

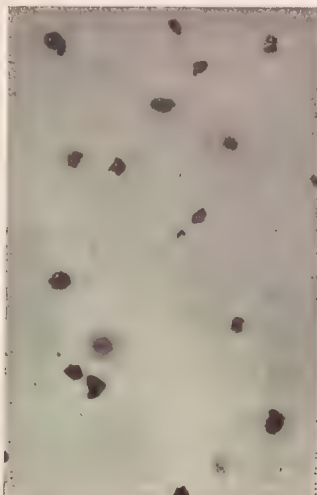


Fig. 16.



Fig. 17.



Fig. 13 is a weakly lighted piece from the same negative before reduction, and Fig. 14 is the same piece after reduction. Naturally, except for the exposure, all the experimental conditions for the two portions were just the same, since they were all portions of one and the same plate. It is to be observed that in the weakly lighted parts there is no change in the grain to be seen. The phenomena exhibited in Figs. 8, 9, and 10, only became noticeable after a longer action of the reducer.

In the course of my experiments I was struck by the following re-

sult and the thin films upon the slip of microscope glass. The ammonium persulphate solution acted in a remarkable degree, more slowly on the thin films than on the original negative. When the action on the grains in the strongly lighted parts of the original negative had become very decided, those in the strongly lighted piece that had been taken from the same negative and spread thinly on the microscope slip, showed no trace of change. Naturally, the grains from the more weakly lighted places that had been spread thinly on the glass were also not attacked. The slip was now left for a whole night in a strong solution of ammonium persulphate. During the night a reduction took place, both of the weak and of the strongly lighted portions. The strongly lighted grains showed a materially greater loss of substance than the less exposed ones. This is shown, not so clearly, however, in the pictures, since the continued action of the ammonium persulphate solution had dissolved a part of the gelatine, so that the formerly swelled film had settled down, and there is an appearance of an increase in the number of the grains. Figs. 15 to 20 are the result of this set of experiments. Fig. 15 is the grain

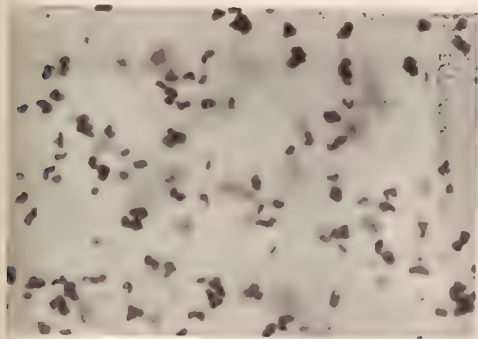


Fig. 18

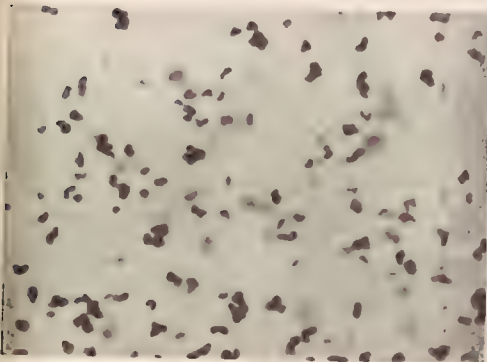


Fig. 19

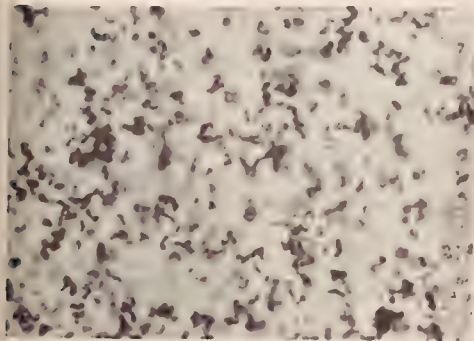


Fig. 20

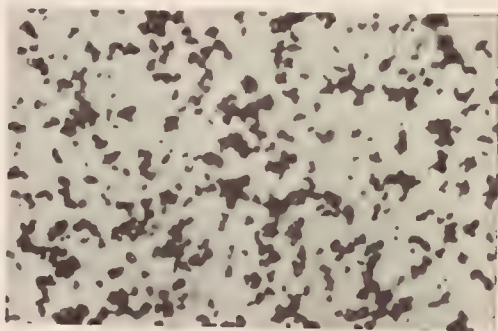


Fig. 21

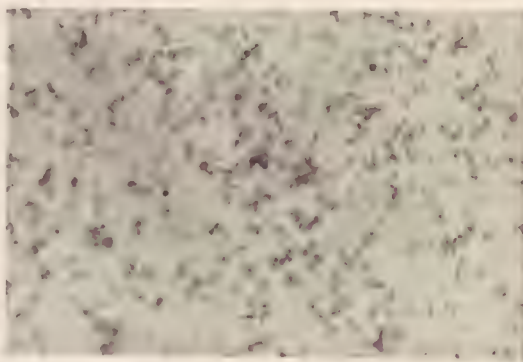


Fig. 22.

in the weakly lighted part. Fig. 16 is the same place after a time of reduction that sufficed in the case of the strongly lighted place in the original negative to render it very transparent. It will be seen that in these grains (Fig. 16) no change is observable. Fig. 17 shows the same piece after twelve hours' immersion in the strong solution of ammonium persulphate. It will be seen that the original configuration of the grains is very well maintained. The black constituent of the grains, however, is almost entirely gone, but there is left a framework of small crystalline bodies which maintain distinctly the original shape of the grains. Unfortunately, in the reproduction the details of the individual character and the grain formation have been largely lost.

Figs. 18 to 20 show grains in the strongly lighted part, 18 before, and 19 after, a stay in the reducer, which, in the case of the most strongly lighted circle in the original negative, sufficed to cause it to become almost as transparent as the least exposed part.

Fig. 20 is the same portion after a night's immersion in the reducer.

able result. In order to have as thin a film as possible I dissolved warm water, from a finished and washed photographic negative, a film from a dark and one from a light circle, and spread them in films on to a slip for examination and microphotographic reproduction during the various stages of reduction. For comparison I used simultaneously in the same solution the photometer negative,

As the film, owing to a partial solution of the gelatine, had considerably settled down, it looks like being fuller of grains. The individual grains can be seen to have become noticeably more delicate. This settling down can also be very clearly traced in Nos. 16 and 17. That the portion of the film in these figures is the same is beyond question. We see in Fig. 17, besides those which were already present, some grains which appear to be newly arrived. For example, the grains numbered 1, 2, 3, and 4. That these grains have actually come into view through the settling down of the film on the stage of the microscope, we see clearly in the grain numbered 1. This is already visible, though fainter, in Fig. 16.

In the image reduced by ferricyanide, characteristic foundation formations can also be seen. These are, however, so delicate that they cannot well be seen in the ordinary way.

Fig. 21 shows the plate grain before reduction, and Fig. 22 shows the same place after such a powerful reduction by the ordinary Farmer reducer, that, when held against a well-lighted white background, it appeared as clear as glass. Fig. 21 is the same piece as Fig. 22, as can easily be decided by comparison of the two pictures. It will be seen that the delicate remains of the granules show distinctly the configuration as seen before the reduction. The image

of No. 22 was photographed by light of wave-length  $f$  to 400.

In the foregoing experiments it was necessary, when dealing with magnifications of 2,000 diameters, to be able to adjust the plate exactly the same place on the stage of the microscope, at various intervals of the treatment. Besides all the care on the part of the operator, the appliances are essential. It is my pleasure to tender again my best thanks to the Zeiss establishment for the very excellent apparatus which, in the most obliging way, was placed at my disposal. It enabled me to succeed, even when dealing with magnifications of 2,000 and still greater diameters, in re-adjusting exactly the plate in the same position on the stage. In the foregoing graph, Fig. 23, for instance, it was almost impossible to say positively whether the same part of the object was actually in the field of view. The fitting of the objectives to the microscope proved also to be such a task that I was able at intervals to apply the microscope to quite a different purpose, and yet, after replacing the suitable objective, continue my researches without further adjustments.

All the photographs except that of Fig. 10 are enlarged 6,000 diameters. Fig. 10 is enlarged 6,000 diameters.

DR. W. SCHREIBER.

## THE INDEX METHOD OF CALCULATING PHOTOGRAPHIC EXPOSURES.

The following article, which we quote from the current issue of our contemporary, "Knowledge," deals with a method of calculating exposures, which, as the author states is quite familiar to users of logarithms. The "logarithm," however, has a formidable sound in the ears of non-mathematical persons, and therefore the explanation of the same system given by Dr. Bryan (who is Professor of Pure Mathematics in the University of North Wales) may be commended for its absence of all difficult symbols and formulæ. Eds. "B.J."]

THE exposure required to take an ordinary photograph, such as a landscape, with a hand or stand camera, depends at least on the following four factors:—

- (1) The light value.
- (2) The stop employed.
- (3) The subject.
- (4) The speed of the plate.

Of these factors the light value may, of course, be determined by an actinometer, but if calculated independently, it depends essentially on:—

- (1a) The altitude of the sun, which again depends on the time of year, time of day, and latitude of the place;
- (1b) The state of the atmosphere, whether clear or cloudy.

In order to simplify the multiplications and divisions required in taking account of these factors, various exposure calculators, based on the principle of the slide rule, have been put on the market. Unfortunately, however, a slide rule with a single movable scale cannot perform a multiplication or division sum with more than three factors, and we find that one of the calculators in question only gives the exposure for one particular stop, another only for one particular class of subject, and if the exposures have to be calculated for other stops or subjects it is necessary to count a certain number of divisions to the right or left.

These difficulties may be entirely got over by the use of index numbers, and the final exposure calculated in a very simple way by a single addition sum, which may either be performed mentally or jotted down in the exposure note-book.

In the first place, it will be observed that when it is found that any particular exposure is a little too short, the photographer usually doubles the exposure; if it is a little too long the exposure is usually halved. For more accurate work, such as bromide enlarging, where errors of exposure cannot be compensated for by a corresponding increase or decrease of density, it is necessary to make smaller changes by increasing the exposure in the proportion of 3 to 2 or 4 to 3, but the difference between the fractions  $\frac{3}{2}$  or  $\frac{4}{3}$  is not sufficient to make any great difference in the final result, and intermediate intervals are rarely used. It will thus be noticed that doubling and halving are the most important variations commonly made in exposures.

Now, consider the series of index numbers given by the following table:—

TABLE A.												
Number .....	1	2	4	8	16	32	64	128	256	512	1024	
Index .....	0	1	2	3	4	5	6	7	8	9	10	

It will be seen that every time we double a number we add its index, and conversely. Thus, if we add 1 to 2, which is the index of 4, we get 3, which is the index of 8. If we multiply a number by 4 we add 2 to its index, if we multiply by 8 we add 3 to its index, and so on; similarly, to divide by 2, we subtract from the index, and so on.

The mathematician who understands logarithms is perfectly familiar with all this, and we find nothing new in the idea.

For intermediate indices it will be sufficiently correct to take a number midway between the previous and following numbers.  $2\frac{1}{2}$  is midway between 2 and 3, and is the index, roughly speaking, of 6, which is midway between 4 and 8.

If, now, any change in the light value, subject, plate speed, stop requires the exposure to be multiplied by 2, 4, or 8, that requires an addition of 1, 2, or 3, as the case may be, to the index number. All these changes can be taken account of in a single addition sum if we draw up tables of index numbers for the various sun's altitude, weather, stop, subject, and plate speed.

(2) Index of the Sun's Altitude.—The light received from the sun per square foot or square mile of the earth's surface is greatest when the sun is vertically overhead at a place within the tropics at noon. We may take the corresponding index to be 0. When the altitude is 30 deg. the lighting is halved (doubling the exposure so that the index for 30 deg. is 1, similarly for altitude 45 deg. the index is  $\frac{1}{2}$ ).

The following table gives roughly the values of the sun's altitude index for the several intervals preceding and following noon in any country:—

TABLE B.					
January .....	Index.	Interval	July .....	Index.	Interval
February .....	$\frac{1}{2}$	11 to 1	August .....	$\frac{1}{2}$	9 to 1
March .....	1	10 " 2	September .....	1	10 to 2
April .....	$\frac{1}{2}$	10 " 2	October .....	$\frac{1}{2}$	11 to 2
May .....	$\frac{1}{2}$	9 " 3	November .....	2	11 to 2
June .....	$\frac{1}{2}$	9 " 3	December .....	2	11 to 2

For times outside these hours the usual rule would appear to be equivalent to the following:—Add  $\frac{1}{2}$  for every hour till the index number is about 24. This index number corresponds to an altitude of about 10 deg., after which the changes of altitude cause a variation in the index, and the effects of a variation in latitude or an error in estimating the longitude in order to correct the would be considerable.



For this altitude the shadow of a stick is about 5.6 times the height of a stick. If it is required to make use of the last gleams of sunshine in photographing an object which cannot be re-visited, or, indeed, to make use of the strong contrasts obtained when the sun is shining low down in the sky, the best way is to measure the length of the shadow of a stick and divide it by the length of the stick. Thus, if a stick 3 feet long gives a shadow 12 feet long, that is, 4 times the length of the stick, we take the index number under 4 as the altitude index of the sun, and this from Table A is 2. If the length is 12 times the length of the stick, then, since 12 is midway between 8 and 16, we take the index to be  $3\frac{1}{2}$ , and so on. This method only answers at low altitudes, for if the shadow were the same length as the stick, the altitude would be 45 deg. and the index would be  $\frac{1}{2}$ , whereas the index number opposite 1 is 0, and gives an incorrect result.

(3) Weather Index.—If we take the brightest sunshine to have as its index, the index numbers for the states described in the Burroughs, Wellcome, and Co. light tables will, except in the extreme cases when the sun is low down in the sky, be as follows:—

TABLE C.

"Bright Sunshine" .....	0
"Sun Shining through Light Clouds" .....	$\frac{1}{2}$
"Diffused Light" .....	1
"Dull" .....	$1\frac{1}{2}$
"Very Dull" .....	2

The correction for height above sea-level will be made according to the B.W. Tables by subtracting  $\frac{1}{2}$  for 2,500 feet. According to another source the index is  $\frac{1}{2}$  for cloudy and 1 for gloomy weather.

(4) Aperture or Stop Index.—The proper unit to take in this case the maximum aperture conceivable. If the lens were close up to the plate (a condition capable of practical interpretation in the case of microscope objectives) the incident light would form a cone of vertical angle 180 deg. The same is the case in contact printing when a plate in its printing frame is exposed to light from the sky all directions out in the open. We may take the index number the aperture in this case to be zero, and the system of index numbers will thus readily enable comparison to be made between exposures in contact printing and enlarging respectively. The list of index numbers for the various apertures will work out as follows:—

TABLE D.

Stop .....	f/4	f/6	f/8	f/11	f/16	f/22	f/45	f/64
Index .....	6	7	8	9	10	11	12	13

This list is easy to remember if we notice that 8 is the index of f/8, the largest stop used with cheap negatives, and that each succeeding stop of the scale commonly used increases the index by unity.

(5) Index for Colour Screen.—For a 2, 4, or 8 times screen the corresponding index numbers will be 1, 2, 3 respectively (Table A).

(6) Index for Objects in the Shade, Narrow Streets, and Ravines.—In this case the most rational plan, if the sun is not shining directly on the objects, is to make a rough estimate of what proportion of the sky is visible from the point at which the objects to be photographed are situated. For example, if a group is under the shadow of a tall building or perpendicular rock, only one-half of the light from the sky will fall on it, and the corresponding index is 1. The rule will be as follows:—

TABLE E.

Proportion of sky visible ...	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{16}$
Index .....	$\frac{3}{4}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$

(7) Index for Interiors.—Here the opening in the windows takes the place of the stop in the camera, and the light admitted to the room correspondingly reduced. If the window is not opposite any tall buildings the index can be calculated by measuring the area of the window in square feet, and the distance of the windows to the opposite wall of the room. In taking indoor portraits the distance should be measured from the sitter to the window. The rule will be as follows:—Double the index of the distance from the window and add  $\frac{1}{3}$  to it, and subtract the index of the area of the windows.

For a skylight receiving light from the sky in all directions the constant to be added would be the index of 3.1416, which is just over  $\pi$ . For a window in a wall only half the sky is visible, making the

constant  $2\frac{1}{2}$  or over. The absorption by the glass of the window would increase the constant, but it would be slightly decreased by the light reflected from the ground. Probably 3 would be safer than  $2\frac{1}{2}$ , except when a very light foreground outside is exposed to strong glare, or there is snow on the ground, when it might be possible to reduce the constant down to 2.

(8) Subject Index.—The subjects which require the shortest exposure are sea and sky, and the natural plan is to take the index of such subjects as zero. We then have the following list:—

TABLE F.

Clouds and sky .....	0 to 1
Sea .....	1
Open landscapes, shipping, etc. ....	2
Landscapes with bright foreground ..	3
Street scenes, groups, landscapes with strong foreground	4
Outdoor portraits in shade .....	6

(9) Index of Plate Speeds.—This has to be so chosen that when the various indices are added up their sum which gives the exposure index is 20 when the exposure is 1 second. This is a matter of convenience, but it is a fortunate coincidence that this makes the speed index zero for the fastest plates on the market working with the most efficient focal plane shutters.

The speed index of the various brands of "Special Rapid" plates with an H and D speed of about 200 is  $2\frac{1}{2}$  for a full exposure or 2 for a short exposure. The plates of half this speed (H and D 100) would have an index  $3\frac{1}{2}$  for a full exposure.

(10) Exposure Index.—As just stated, it is convenient to choose the exposure index, so that for an exposure of 1 second the index is a multiple of 10, and 20 is the smallest multiple that will answer the purpose. The system of indices of the plate speeds just described is based on this choice, but happens, as we have said, to exactly fit the circumstances of the case. With this convention the complete table of exposure indices will stand as follows:—

TABLE G.

Index ...	10	10 $\frac{1}{2}$	11	11 $\frac{1}{2}$	12	12 $\frac{1}{2}$	13	13 $\frac{1}{2}$	14	14 $\frac{1}{2}$
Exposure	$\frac{1}{1000}$	$\frac{1}{800}$	$\frac{1}{640}$	$\frac{1}{512}$	$\frac{1}{400}$	$\frac{1}{320}$	$\frac{1}{256}$	$\frac{1}{200}$	$\frac{1}{160}$	$\frac{1}{128}$
Index ...	15	15 $\frac{1}{2}$	16	16 $\frac{1}{2}$	17	17 $\frac{1}{2}$	18	18 $\frac{1}{2}$	19	19 $\frac{1}{2}$
Exposure	$\frac{1}{80}$	$\frac{1}{64}$	$\frac{1}{50}$	$\frac{1}{40}$	$\frac{1}{32}$	$\frac{1}{25}$	$\frac{1}{20}$	$\frac{1}{16}$	$\frac{1}{12}$	$\frac{1}{10}$
Index ...	20	20 $\frac{1}{2}$	21	21 $\frac{1}{2}$	22	22 $\frac{1}{2}$	23	23 $\frac{1}{2}$	24	24 $\frac{1}{2}$
Exposure	$\frac{1}{10}$	$\frac{1}{8}$	$\frac{1}{6}$	$\frac{1}{5}$	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{1}{2}$	$\frac{1}{1}$	$\frac{1}{1}$	$\frac{1}{1}$
Index ...	25	25 $\frac{1}{2}$	26	26 $\frac{1}{2}$	27	27 $\frac{1}{2}$	28	28 $\frac{1}{2}$	29	29 $\frac{1}{2}$
Exposure	$\frac{1}{40}$	$\frac{1}{32}$	$\frac{1}{25}$	$\frac{1}{20}$	$\frac{1}{16}$	$\frac{1}{12}$	$\frac{1}{10}$	$\frac{1}{8}$	$\frac{1}{6}$	$\frac{1}{5}$

(11) To reduce from seconds to minutes, subtract 6 from the index of the exposure in seconds (6 is easy to remember, being the first figure of 60, the number of seconds in a minute). This is equivalent to dividing by 64, which is quite sufficiently accurate for the purpose of calculating exposures.

(12) Final Rule.—The whole process of calculation may now be summed up in the following single rule:—

Add together the index numbers for the day and hour, weather, subject, plate speed, and stop; the final sum gives the exposure index. In working in interiors the index calculated, as explained in Section 7, must also be added, and if a colour screen is used its index must be also added in.

Examples.—In illustration of the index method we append the following examples:—

Ex. 1.—January, between 2 and 3 p.m., cloudy (diffused light), open landscape, with no strong foreground, special rapid plate, stop f/16.

	Table.	Index.
Sun's altitude up to 1 p.m. ....	B	2
Correction for 2 hours .....		1
Weather .....	C	1
Subject .....	F	2
Plate speed .....		$2\frac{1}{2}$
Stop f/16 .....	D	10

Exposure index 18 $\frac{1}{2}$   
Required exposure= $\frac{1}{4}$  second

Ex. 2.—Landscape with strong foreground, taken near sunset, tripod 4 feet high, casts a shadow 38 feet long, slight haze in sky, special rapid orthochrome plate, with 4 times screen top f/32.

Here the shadow is more than 9 times the height of the tripod, and

will lengthen before the picture is taken; we therefore take the next higher altitude index corresponding to a shadow 12 times height.

	Table.	Index.
Sun's altitude .....	A	$2\frac{1}{2}$
Corrections for haze .....		$\frac{1}{2}$
Subject .....	F	$\frac{1}{2}$
Plate speed .....		$2\frac{1}{2}$
Colour screen .....	A	2
Stop $f/32$ .....		12

Exposure index  $23\frac{1}{2}$   
Required exposure = 11 seconds.

Ex. 3.—February, 3 p.m., "very dull," indoor portrait, sitter distant 6 feet from a window, measuring about 15 square feet in area, facing a building which cuts off about  $\frac{1}{3}$  of the sky, as seen from the window, ordinary plate half the speed of the "Special Rapid," stop  $f/22$ .

	Table.	Index.
Sun's altitude up to 1 p.m. ....	B	$1\frac{1}{2}$
Correction for 2 hours .....		1
Weather .....	C	2
Subject portrait, referred to the open .....	F	6
Correction { Distance from window $2\frac{1}{2}$ for { Constant $2\frac{1}{2}$ Interior. { Area of window $4$ $2 \times 2\frac{1}{2} + 2\frac{1}{2} - 4 =$		$3\frac{1}{2}$
Effect of obstruction $\frac{2}{3}$ light visible .....	E	$3\frac{1}{2}$
Speed of plate .....		11
Stop $f/22$ .....	E	11
Exposure index in seconds .....		29
Reduction to minutes, subtract .....		6
Exposure index in minutes.....		23
Required exposure = 8 minutes.		

(13) Index Tables for Actinometers.—If an actinometer be used its time of exposure will be calculated under the conditions, as to weather, under which the photograph is required, and if used in an interior it will give the light value for that interior. There will thus be only a single index in place of those of §§2, 3, 6, and 7. The rule for calculating the index of the light value from the actinometer time will necessarily vary with the actinometer used. With the Imperial actinometer the index of the light value appears to be obtained by subtracting  $21\frac{1}{2}$  from the index of the exposure in seconds (Table G), or 15 from the index of the actinometer exposure in minutes if the final exposure is to be calculated in seconds.

(14) The advantages of the Index method may be summarised as follows:—

- 1.—The calculation of exposures is reduced to a single addition sum.
- 2.—Slide rules are dispensed with. As we have seen, these do not suffice to take account of all the data required in determining an exposure.
- 3.—Any number of factors on which the exposure depends may be taken into account, and the method is thus applicable under the most complex conditions.
- 4.—Cumbersome fractions are avoided, only halves being used in the index numbers.
- 5.—When the sun is low down in the sky a change of latitude or longitude would cause a considerable error in the light value if calculated from tables, and in this case an estimate based on the length of the shadow can be substituted, which is free from this uncertainty. If it were necessary to use an actinometer the light might go while the paper was blacking up.
- 6.—There would be no difficulty in graduating a camera with the index numbers of the different stops and exposures, and in this way the calculations would be further simplified.
- 7.—There is practically no need to take account of the tens in the addition, as there is no fear of mistaking, for example,  $13\frac{1}{2}$ , or an exposure of  $\frac{1}{75}$  for  $23\frac{1}{2}$ , which gives an exposure of 11 seconds.
- 8.—The rule for conversion from seconds to minutes is very simple and easy to remember.
- 9.—It is not difficult to write down the exposures corresponding to the various indices without looking at the table by counting powers of 2 or  $\frac{1}{2}$  from the nearest multiple of 20. Thus, for example, if the index is  $23\frac{1}{2}$ , or  $3\frac{1}{2}$  more than 20, we count (1, 2); (2, 4);

(3, 8); ( $3\frac{1}{2}$ , 12); or the exposure is 12. If the index is  $17\frac{1}{2}$  short of 20, we count (1,  $\frac{1}{2}$ ); (2,  $\frac{1}{2}$ ); ( $2\frac{1}{2}$ ,  $\frac{1}{2}$ ). In this way anyone can easily employ his own method of counting, which will certainly understand better than following mere printed instructions.

G. H. BRYAN, Sc.D., F.R.S.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents were made between June 1 and 6:—

PLATES.—No. 11,816. Improvements in the method of producing sensitised plates and in means therefor, and for exposing the plates in a camera. Arthur Augustus Brooks, 57, Barton Arcade, Manchester.

CAMERAS.—No. 11,835. Improvements in devices for adjusting focussing slides of cameras. Emil Wünsche Akt.-Ges. für Photographische Industrie, 57, Barton Arcade, Manchester.

PLATES.—No. 11,842. Improved means and apparatus for the treatment of photographic plates, films, and the like. Sidney Herbert Nathan, 115, Cannon Street, London.

CAMERA STAND.—No. 11,901. Improved easel, suitable for use with a photographic camera stand. Edmund Hodgson Smart, 23, Southampton Buildings, London.

CINEMATOGRAPH.—No. 11,968. Improvements in cinematograph apparatus. Arcade Mallet, Birkbeck Bank Chambers, Southampton Buildings, London.

CINEMATOGRAPHS.—No. 12,059. Improvements in processes of apparatus for projecting cinematographic projections. John Mathias Arnold, 111, Hatton Garden, London.

CHEMICALS.—No. 12,071. Improvements relating to the manufacture of ammonium thiosulphate. August Zimmermann, 24, Southampton Buildings, London.

TONING.—No. 12,341. Improvements relating to toning reagent processes for toning photographic prints. Harry Edmund Smith, 322, High Holborn, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

These specifications are obtainable, price 8d. each, post free, from Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

SELF-PORTRAIT SHUTTER RELEASES.—No. 14,728, 1907. The invention consists in a device for effecting the automatic operation of the shutter after a certain determined interval of time, during which the photographer may retire from the camera and thus himself appear in the picture. The release is of pneumatic type, that is, the interval before actuation of the shutter of the camera is determined and regulated by pneumatic means. Gravity is the force serving to actuate the mechanism. A weight is employed in combination with a pneumatic cylinder, together with means for transmitting the pressure of the weight to the trip-mechanism of the shutter and means for automatically attaching the apparatus to the camera. Charles Chase Lee, 32, Lightston Street, San José, California, U.S.A.

PHOTO-PENDANTS.—No. 28,233, 1907. The invention has for its object to provide means whereby pendants may be made in a cheap and effective manner, and to enable a photograph being inscribed expeditiously.

Fig. 1 shows a front and side elevation of a photograph pendant made in accordance with the invention. Fig. 2 is a vertical section of the same, and fig. 3 a side view.

Figs. 4, 5, and 6 are detail parts. *a* represents the photograph frame provided with a double bezel *b* *i*, *e*, one on each side to hold two pictures. The frame is made in the form shown in side view fig. 2, and the end view fig. 4.

A fork-like carrier *d* is made as shown in side view (fig. 5), and



lan (fig. 6). This carrier consists of two prongs *e, e*, adapted to take and hold two pictures back to back within the groove.

When the pictures are in their place the carrier *d* is placed in the frame *a*, the spring *g* (fig. 2) clips and tightens up the prongs

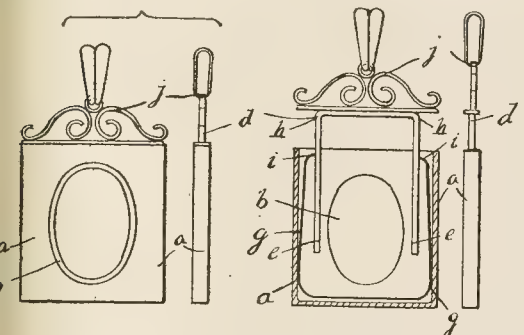


Fig. 1.

Fig. 2.

Fig. 3.

*e*, against the edges of the pictures, on pressing the holder down into the position shown at fig. 1.

In some cases a notch is formed at *h, h*, with which the ends *i, i* of the spring *g* engage. The object of this is to afford a better hold when the carrier *d* is in its place in the frame.

On pressing the prongs *e, e*, laterally the carrier is easily

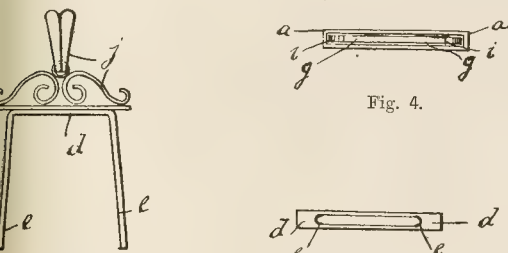


Fig. 5.

Fig. 4.



Fig. 6.

inserted in the frame. The carrier *d* is furnished with the ornamental attachment *j* for the purpose of attaching the same to a watch-chain or the like. Instead of making the spring *g* in the manner shown at fig. 2, a short spring may be attached to each side of the frame *a* so arranged as to press laterally against the prongs *e, e* for the purpose of contracting the same. Clarence Flint, 186, Park Road, Bearwood, Birmingham.

**FAST LOADING OF PLATES.**—No. 4,338. 1908. The invention consists in means of packing plates in readiness for exposure in a camera without the aid of dark-room or changing bag. Two plates are arranged back to back with an opaque backing sheet between them. Against each film surface two frames or strips are so arranged as to form frames a sufficient distance apart to admit of a slide or shutter passing between them.

The materials preferably employed are cardboard and paper, or other inexpensive light materials, while a suitable fabric may be employed for binding the parts together, and in this manner the plates are packed in pairs in what practically amounts to a double slide of such a construction and produced at such a cost as to admit of its being destroyed after the plates have been used. In practice it is preferred to pack six of these frames, each containing two plates, in a box, the frames being taken direct from the box and inserted in the camera. Guy Arthur Chambers, Reponga, Gisborne, New Zealand.

**ATTACHMENT.**—No. 21,470. 1907. The invention relates to a photographic posing chair, having adjustable head and arm rests. The primary object is the production of a device of this character which can be applied to any type of chair or stool and be adjusted to hold a child in the desired pose for taking its picture. By varying the direction and form of the holding arms it may be used vertically, horizontally, or at any angle, as may be most convenient in securing it to an object. The support may serve

as a back-rest, and the entire device will be hidden from the point of view from which the picture is to be taken, and to otherwise improve on devices for a similar purpose. The details of the construction of the chair require the six drawings in the specification for their explanation. Frederick William Charles Pohle, 380, Plymouth Avenue, Buffalo, New York State, U.S.A.; and Paul Werner, 330, Hudson Street, Buffalo.

**CINEMATOGRAPHS.**—No. 22,109. 1907. The invention relates to a cinematographic apparatus of the kind known as the start-and-stop type, that is, of the kind in which the feeding of the film is intermittently effected through the medium of a Maltese cross and eccentric pin feeding-drum.

The invention has for its object to provide improved means whereby the position of the film with respect to the optical axis of the lens can be adjusted.

The feed spindle upon which the Maltese cross is mounted is made hollow, and is provided with a longitudinal slot. Upon this spindle there is loosely mounted a sleeve carrying the usual pair of toothed feed wheels, around which the film passes. This sleeve is formed with a spiral slot or internal recess. Extending through the hollow spindle is a rod, the outer end of which projects beyond the end of the spindle. The inner end is provided with a pin or projection, which extends through the slot in the spindle, and engages with the spiral groove or recess in the sleeve.

With this arrangement by moving the rod axially within the hollow spindle the sleeve is caused to partially rotate, thus adjusting the film relatively with the optical axis of the lens without in any way interfering with the relative position of the other parts of the apparatus.

In practice it is advantageous to form the hollow spindle with two longitudinal slots opposite one another, and to make the rod which extends through the spindle with two pins or projections at its extremities, which pins engage the slots. Moreover, the spiral slot or recess in the feed drum sleeve is preferably so made that the normal feed movement of the sleeve tends, with the assistance of a spring, to force the adjusting rod outwards, so that the requisite adjustment of the film at any time can be easily effected by the operator, who merely has to press the rod more or less inwards. The rod may be retained in the position to which it is adjusted by any suitable means. Alfred Wrench, 50, Gray's Inn Road, London; and William Engelke, 72, Duke's Avenue, Muswell Hill, Middlesex.

The following complete specifications, etc., are open to inspection before acceptance under the Patents Act, 1901:—

**CINEMATOGRAPHS.**—No. 11,968. Cinematographic apparatuses Mallet.

**CINEMATOGRAPHS.**—No. 12,059. Process of, and apparatus for, projecting cinematographic projections. Arnold.

## New Trade Names.

**MATONE.**—No. 301,113. Chemical substances used in manufactures of photography, or philosophical research and anti-corrosives. Lewis Berger and Sons, Ltd., 201, Morning Lane, Homerton. London, N.E., manufacturers. March 7, 1908.

## CONVENTION LYRICS.—No. 5.

At Antwerp, that town by the Scheldt,  
Some slight curiosity's felt

Lest the members should try,

On the 10th of July,

To pronounce all French words as they're spelt.

**THE BLENHEIM CLUB**, which on Monday last installed itself in new quarters, formerly known as Willis's Rooms, took fire just as the first lunch of its career was being laid. The fire originated in the kitchens on the top floor, and within a few minutes the greater part of the roof was a mass of flame, the spectacle attracting a huge crowd. A district call was given, and occupants of surrounding property began hastily to remove their belongings. With the prompt arrival of a large force of firemen, however, the danger was quickly at an end, and after an exciting twenty minutes the fire was extinguished.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Caravanning for Photographers.

As many will be quite at sea (states a writer in "The Amateur Photographer and Photographic News" for June 16) as to the probable cost of this type of holiday, I append a few figures. A van for two persons costs, to-hire, in August, the sum of fifteen guineas; in July and September ten. The vans are not let for less than one month at a time. The hire of the horse is £1 per week, and 2s. 6d. per week extra is charged for insuring it—a very desirable precaution. A coachman, who may be taken or not, as fancy dictates, costs 25s. per week. Food for the party costs as much or as little as you choose to pay. The horse's food and stabling, in my own experience, works out at 2s. 6d. per day. For a photographic tour, caravanning is ideal. The moment you have "worked out" a neighbourhood you move on to another—taking your "lodgings" with you. Not that one really works out any neighbourhood; but undoubtedly one gets "stale" if a whole month of the summer be spent in one place, however beautiful. I never developed any plates in the caravan, but I changed them every night, making a dark-room by pulling the curtains across one of the bunks and working within. I have changed plates during the day, similarly; but this takes more preparation. Development would be quite feasible at night—as long as the other members of the party do not mind being inconvenienced. Frankly, there is not much elbow-room in a caravan!

## New Books.

"Annuaire des Photographes Professionnels pour 1908." (Second Edition.) Paris: Office of the "Photo-Revue." 1fr. 50c.

This publication is a new edition of a directory of professional photographers in France, the French colonies, and Belgium and Switzerland. Photographers in Paris are listed separately from those in the "départements," and the list is certainly a useful one for reference. To what extent the value of the list is nullified by the migratory habits of photographers it is not possible for us to say, but we fear a similar list of photographic studios in Great Britain would—within a twelvemonth—become so inaccurate as to be commercially of very little value.

"Répertoire Général des Marques et Spécialités Photographiques et Cinématographiques." Paris: Office of the "Photo-Revue." 3fr. 50c.

This most useful compilation is a directory of trade names of photographic articles of manufacture (apparatus and materials). The entries are arranged in alphabetical order, and against each are given details as to the nature of the article and the name of the manufacturer, thus:—Cristallos—developers and fixers, intensifiers, etc. E. Jumeau, Paris.

The list is not confined to articles of French manufacture, but appears to include the trade names of Great Britain, America, and Germany. It is certainly most useful, despite the fact that the compilers appear to have relied on French sources alone to collecting their data. For example, under "Ensign," they give only the name of "The Austin Edwards Company, London," and ignore the many articles manufactured by Messrs. Houghtons Ltd. under this trade mark. The directory also includes a list of trade marks which have been abandoned or are thought to be so, the articles to which they refer being no longer manufactured.

Incomplete as such lists are bound to be, the present publication is certainly a most useful one, and should be worth its cost many times over to the dealer or wholesaler, who is asked to procure some article of which he has never heard.

"THE BLUE BOOK," 1908.—This pocket-book of the Scottish Photographic Federation apparently bases its claim for approval chiefly on being a complete photographic guide to Scotland. The "Gazetteer" section of the "Blue Book" is the largest, yet we doubt whether any one would seriously set out on a photographic

tour of Scotland under its guidance. Our own opinion is that the guide-book work that is being done by the Scottish Federation and other similar bodies is most of it sheer waste of time. It ignores the personal equation. The scenery that a guide-book may describe as "fine and picturesque" will fail to please one man, while another may think it a photographer's paradise. For example, our "Blue Book" tells us that at Pollokshaws there is "the Pollok Estate, River, Calt, Crookston Castle and woods (apply Factor, 216, George Street, Glasgow)." Seriously, one asks whether a federation that wants to do something is wise to let its energies lead it in this direction. But, indeed, we must do the Scottish Photographic Federation the justice of saying that in many instances it has appointed "reporter," who presumably is able and willing to intending visitors information they need. The "Blue Book," contains a directory of a goodly array of Scots prepared to help photographic (and federated) brethren in some branch or other practical work. There is also the circulating portfolio of the federation.

"CAMERA WORK." No 23.—The current issue of this engaging magazine is, as far as its illustrations are concerned, a Clarence White number. There are sixteen sumptuous plates, all instinct with high artistic feeling and originality of idea. We ourselves place a feeling above their originality, for the groping after a new and hackneyed method of attack does not always result, happily for the artist. Mr. White seems deliberately to traverse many of the principles accepted by painters and photographers alike. For example in the portrait of Miss Everett he has introduced disquieting lights upon what is presumably a muff. If the hand is placed in this plague spot to hide it the rest of the work is extremely beautiful. Similarly the bright spots made by the hand and the flower in "Girl with Rose"—a sort of echo of Rossetti's "Blessed Damsel"—throw the chief appeal of the picture into its secondary parts. The lighting of this is quite unexplained. Mr. White is fond of forcing out a spot of dazzling brilliance and leaving the rest of the picture in an illogical gloom. The plan may add force, of a sort, but certainly adds no beauty. To our minds the best of these pictures are two highly romantic works, "Morning" and "Boys Wrestling," which pleasantly posed "Mr. Harrington Mann." But all are remarkable in some way or other. A note upon Mr. White's work is given by Chas. H. Caffin, and Mr. Steichen contributes an article on painting and photography, wherein he says anew many things which have been said often enough before. His sincerity and conviction, style, however, give his article freshness and much interest. Alfred Stieglitz treats of the frilling of Autochromes.

## New Apparatus, &c.

The Busch "Leukar" Anastigmat. Sold by the Emil Busch Optical Company, 35, Charles Street, Hatton Garden, E.C.

This is a symmetrical double anastigmat of  $f/6.8$  aperture, and very small and compact form. The No. 2, which is between 4 and 5½ inches in focus, will cover anything up to 7 x 5. Thus, as it is listed to cover a 4-plate sharply at full aperture, we find it gives very good results on a half-plate. The complete doublet is an excellent lens for general work, and the price, £3 15s. for the No. 2, is certainly moderate. The corrections seem to be very good, the single combination also serves well as a narrow angle long focus objective. "Leukar" lenses can be obtained in three varieties of mount—a plain iris mount, a focussing mount, and a "bellows" mount, with which the flange comes at the front of the lens. Focal lengths vary from 2½ to 18 inches, so there is a wide range to select from. "Leukars" are also supplied in Unicum, Automatic, Koilos shutters, and a No. 2, in Koilos shutter, only costs £5 10s.

SUICIDE OF AN EX-PHOTOGRAPHER.—At Darlington last week the verdict of "Suicide whilst temporarily insane" was passed upon Tobias R. Braybrook, formerly a photographer in Church Street, West Hartlepool. At the time of his death deceased was a well-known traveller.



## New Materials, &c.

ette" semi-matt P.O.P. Made by the Halifax Photographic Company, Halifax.

Is brand of P.O.P. the half-matt surface of albumenised paper many collodion P.O.P.'s is very successfully obtained. The tints and tones well in the ordinary sulphocyanide bath, and ults obtained with it are very effective for portrait work, giving prints particularly suitable for reproduction. The new obtainable in the usual sizes of packets and as postcards.

ORNE" AND "REMBRANDT" MOUNTS.—Mr. H. W. Green, of Wm. Manufactory, Rotherham, sends us specimens of a new f mount, the "Osborne," which is supplied, with embossed ark, in white, green, or brown. The mounts are put up in 1,000 packets, and are made for circle, oval, and rectangular. Prices are moderate, 3s. 3d. per 100 for 9 x 6½ mount, for cabinet or 4in. circle, or 30s. per 1,000.

Rembrandt" is a mount with a pasted-on ornamental tint, old at 4s. 11d. per 100 in 9 x 6½ size, or of slip-in pattern cards or cabinets at 6s. 6d. per 100.

## CATALOGUES AND TRADE NOTICES.

STOCK LENSES.—A most handsomely printed list, containing is half-tone reproductions, is this of the Munich firm of Roden-foreover, the tables and rules given in the first twenty pages contain a good deal of information of a kind which is of service in the choice and use of a photographic lens. The rt of the list gives very full specifications of the lenses and made by Rodenstock, and obtainable, as is the catalogue om the British agents, Chas. Zimmermann and Co., 9 and 10, y-at-Hill, London, E.C. Special mention should be made two pieces of accessory apparatus, such as the iris universal ler and a screen-holder by which circular iso screens of izes can be quickly attached to lenses, also of various sizes.

NGTON and Co., of Sydney and Brisbane, Australia, send price list of photographic goods for 1908-9. It is a sub-volume of 360 pages, and shows the very full representation ritish and Continental goods of the leading makers obtain in Harrington's hands among photographers in the Antipodes.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

SATURDAY, JUNE 20.

Amateur Photographic Association. Excursion to Blackburn and Essex Photographic Society. Record Outing to Pinner. Era Club. Excursion to Otley. Urban Photographic Society. "London and the River." F. J. er, F.R.P.S. eoscopic Society. Outing to Zoological Gardens. Riley Fortune. Photo Art Club. Excursion to Midmar.

TUESDAY, JUNE 23.

otographic Society. "Hand Cameras."

WEDNESDAY, JUNE 24.

otographic Society. Excursion to Grandborough. G. B. Morgan. Essex Photographic Society. Exhibition of Affiliation 1907 Prints.

THURSDAY, JUNE 25.

Provincial Photographic Association. Annual General Meeting. Photographic Society. "Hyposulphite of Soda, its Chemical and ropic Properties." C. F. Proctor.

### ROYAL PHOTOGRAPHIC SOCIETY.

held Tuesday, June 16, the president, Mr. J. C. S. Mum- the chair.

eting was the occasion of the opening of a house exhibition raphs by Mr. Walter Benington, who, in the shortest of ry addresses, said that all he had to say in reference to raphs was on the walls.

Jules Richard and Co. exhibited a number of stereoscopes

of their taxiphot reservoir pattern, containing Autochrome stereo- scopic transparencies. These will be on the tables during the hours at which the Benington exhibition is on view—namely, daily from 11 to 5. A paper was then read by Mr. Horace Mummery on "The Artistic Impulse," which called forth some interesting discussion.

## Commercial & Legal Intelligence.

A NORFOLK BANKRUPTCY.—The creditors of Scott Stanley Meale, photographer, of Coltishall, Norfolk, met at the Official Receiver's office, Norwich, on June 10. Debtor returned his liabilities at £580 12s. 2d., and assets at £503 12s., leaving a deficiency of £77 0s. 2d. The Official Receiver said the receiving order was made on the debtor's own petition, consequent upon three creditors having obtained judgments against him. Debtor had been a photographer at Coltishall since 1896. In April, 1907, he acquired the premises in which he had been carrying on business for £420, raising the greater part of the money upon mortgage. Latterly he had found himself hampered for want of money, but he regarded himself as solvent, believing the premises to be worth what he gave for them. When he tried to sell them, however, he was unable to find a purchaser. The principal creditors are the mortgagees of the property and the debtor's bankers, who hold a policy upon his life. Debtor attributes his insolvency to bad trade. The Official Receiver remains trustee of the estate.

LEGAL NOTICE.—A dividend is to be paid in the bankrupt estate of Arthur Frederick Eastmead, photographer, of 173, High Street, Rochester, Kent. Proofs should reach the Official Receiver at Maidstone by June 26.

THE INSTALMENT BUSINESS.—At the Ashby-de-la-Zouch County Court last week, before his Honour, Judge Wrightman Wood, Esther Wright, wife of John William Wright, collier, of Spring Cottage, Overseal, Leicester, sued A. and G. Taylor, photographers, of Queen Street, London, E.C., for £1 7s., money paid by the plaintiff to defendants. There was a similar action by plaintiff's husband, John William Wright, against defendants for 32s. Mr. A. H. Timms appeared for the plaintiffs, and Mr. Lister, confidential clerk to the defendant's firm, appeared.

Mr. Timms said in this case the order for the photographs was given in March, 1901, the photographic firm being then at Derby.

John William Wright stated that he gave the order for his photograph in 1901 to a man named J. J. Askew. He received a card and paid a deposit of 1s. upon it. He continued to pay instalments regularly for about three months. Twelve months after the calls ceased he wrote to the defendants at Derby.

His Honour remarked that the last stamp, which formed the receipt, was dated November, 1903.

Mr. Lister said his firm never received the letter referred to. The only letter they received was in last August, in which Mr. and Mrs. Wright said that after four years they had changed their minds, and asked for the money paid on account, £2 19s., should be refunded.

His Honour asked what they could get for all that money. If they came to Ashby they could get their photographs taken for 5s.

Mr. Timms: Of course they could.

In reply to his Honour, Wright said that for 45s. he was to have an oil painting and half a dozen cabinets.

His Honour, after examining the letter produced by Mr. Lister, said that the date was evidently January, 1908.

Wright said that for a short time after the agent ceased to call he went to Derby to have his sitting, and found 65, London Road, but not A. and G. Taylor. He discovered the London address from a case reported in the "Burton Chronicle," and which took place in the Burton County Court. After receiving a letter from a firm stated to be the liquidators of the Derby and District Photographic and General Supply Company, of 24, The Strand, Derby, he placed the matter in the hands of his solicitors. In further correspondence the defendant company laid the blame on the plaintiff, and stated that they were prepared to carry out their part of the contract, and, further, that that part of the business had been sold three or four years, and had since been placed in liquidation.

Mr. Lister stated that his firm were prepared to carry out their

part of the contract, and gave the plaintiff opportunity of having a sitting at Overseal, but he failed to have it.

Wright said he had only one opportunity. He denied that the agent ceased to call at his request.

Mrs. Esther Wright said someone called at her door in March, 1901, and showed a specimen portrait. She gave an order, and the collector called once a week for three or four months. He then got very irregular, and finally four years ago ceased to call at all. When they were given an opportunity of sitting it was not convenient as they had not paid in sufficient. She went to Derby with her husband, and found that the shop at 63, London Road, was closed.

Mr. J. J. Askew, of Hanley, for the defence, stated that he managed the Derby business up to four years ago, and took the order from the plaintiffs. Mr. Lamb then took over the management, and after eighteen months or two years the business was sold to the Derby and District Photographic and General Supply Company.

Mr. Lister again said that Mr. Taylor was prepared to fulfil his part of the contract, and had given every opportunity for sittings.

His Honour said he could not accept that view. He thought defendants had broken the contract in two ways. It was clear that the collector should have called from time to time, and this he failed to do, and then the defendants had changed their address without notifying the plaintiffs. He thought that was a most unscrupulous thing to do. He did not think the plaintiffs were bound to have their photographs taken until they had paid all the money. He did not know, but the woman might be vain enough to hold that, whilst she was prepared to have her photograph taken in 1901, she might not desire to hand down to posterity her photograph as she was in 1908. He should give judgment for the plaintiffs in both cases, with costs.

## Correspondence.

\*• *We do not undertake responsibility for the opinions expressed by our correspondents.*

\*• *Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*

### A NOVEL METHOD OF PHOTOGRAPHING INTERIORS.

To the Editors.

Gentlemen,—In these days of great photographic possibilities one is often obliged to take in a great deal connected with what used to be called our "art-science," but it is not often one is expected to actually swallow a camera and electric light plant at one gulp. The following paragraph is from "Tit-Bits," June 15:—

"PHOTOGRAPHING THE STOMACH.—An improved apparatus has been made by Dr. Fritz Lang, of Munich, by which the inside of the stomach can be clearly photographed. The camera is actually swallowed by the patient, and no sooner does it reach his stomach than the walls thereof are illuminated by a small electric lamp attached to the apparatus. At the bottom of the camera is wound a photographic film 20in. long and a quarter of an inch wide. All the surgeon has to do is to pull the cord and thus run the film past the lens. The electric light is then turned on, and after the sensitive film has been impressed with the image the current is turned off and another section of the film is brought into play until the requisite number of pictures have been obtained. When this is done the entire apparatus is withdrawn from the stomach."

I have written to the gentleman, whose name and address are given, asking if he can make it convenient to come to Brussels on the evening of the Convention conversazione and exhibit the apparatus. If he accepts the invitation we shall doubtless have quite a rush of members anxious to obtain a reliable record of the working of their digestive organs.—Yours truly,

F. A. BRIDGE.

East Lodge, Dalston Lane, London, N.E.

### INK IMPRESSIONS ON P.O.P.

To the Editors.

Gentlemen,—I enclose herewith a piece of Marion's P.O.P., which had been put by in Smiles's "Self-Help." On picking up the book

the piece of paper fell out, and I at once was struck with the print that had come out on the P.O.P. Is it the iron in printers' ink that had decomposed the silver? If not, can you, through your valuable paper, give a solution of the above? I have not toned or fixed paper for fear of losing the characters.—I remain, yours truly,

3, Dixon Terrace, Darlington.

DOUGLAS H. VET

[The effect described by our correspondent is a curious one. Paper is discoloured similarly to stale P.O.P., while the print shows practically no discoloration. That is, the effect is one of printing on a darker ground. On fixing a small portion of the general discoloration disappears, and the printing is then visible in the form of dark lettering on a light ground. The is thus reversed by the fixing operation. A developer darkens lettering in the unfixed print; but has no apparent effect on the print. Lettering is visible on both sides of the paper, and impression on the back takes the form of white lettering on a stained ground when a developer is applied. The impression on back of the P.O.P. is therefore in all probability simply a g impression from the printing ink. That on the front is probably due to an emanation from the ink that renders the silver developable, but at the same time checks any discoloration.—"B.J."]

### THE P.P.A. AND ASSISTANCE TO NON-MEMBERS.

To the Editors.

Gentlemen,—I am directed by the Committee of the Professional Photographers' Association to request the opportunity to announce that in future, when an applicant for admission to membership for immediate assistance in legal or other difficulties, they will consider themselves bound to render the aid required unless applicant joins the Association for at least three years before paying his subscriptions in advance.

The necessity for this resolution arises from the fact that number of applications for admission under the conditions referred to is steadily increasing, showing that while the objects and usefulness of the Association are perfectly well known and appreciated by photographers throughout the country, in many cases it is seeness or other unworthy considerations that prevent them from joining the Association, the funds of which are used to a very extent for the benefit of professional photography generally, personal necessity drives them into the fold. The new regulation is in no sense a hardship. The 15s. for three years' membership would go a very little way if a solicitor were consulted, and in legal matters are involved a solicitor or the Association are generally the only alternatives. But membership includes many other advantages besides legal advice and assistance, and when the cost of membership, which works out at a little over a penny a week is considered, it is obvious that a photographer who has any business at all can hardly fail to find some feature of the Association's that justifies the outlay.—I am, etc.,

ALEXANDER MACKIE, Hon. Secretary.

CELLULOID MANUFACTURE.—The Mitsui concern in Japan (referred to as the "Chemist and Druggist") is about to establish a celluloid factory with a capital of a million dollars, although at present only \$350,000 is needed. The demand for celluloid has increased within the few years, the imports amounting to about \$500,000 annually. Hitherto there have only been two small celluloid factories in Japan. The company intends to produce artificial silk and other celluloid products.

TOURIST GUIDE TO THE CONTINENT.—Not the least valuable of many guide books at the disposal of the tourist is that issued by the Great Eastern Railway Company, and edited by Mr. F. Lindley. The tourist who desires to explore the most picturesque portions of Holland, Belgium, Germany, Switzerland, Austria, Scandinavia will here find, in addition to copious topographical details, the various routes well mapped out, whilst many of the illustrations are of sufficiently large size to give a fair idea of the subjects dealt with. Several good maps also add to the value of the book, which may be obtained from the Continental Department, Liverpool Street Station; 30, Fleet Street, E.C.; and 12a, Roper Street, W.



## Answers to Correspondents.

matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.

Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.

Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., Wellington Street, Strand, London, W.C.

For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 7d. each photograph, to cover cost of registration fee, form, etc. No unmounted copies of each photograph must be sent with the

### PHOTOGRAPHS REGISTERED:—

Edinburgh, 1, Hanover Street, Edinburgh. Two Photographs. Group of Ten in the Fife and Forth, One with Two Agents.  
"Woodview," Beeston, Leeds. Photograph of Councillor F. Ogden, a Candidate for Parliamentary Division of Pudsey.  
Glasgow, 8, Battle Place, Glasgow. Photograph. Lampden Park Scottish Cup 1902.

SUBSCRIBER.—We should limit the competition to contact prints enlargements. Your division into classes is very convenient, in regard to other rules we do not see that we can say anything except that the cleanness and neatness of the printing mounting, in short, the technical excellence of the work, is the standard that need be considered.

QUESTIONS.—I want to get full particulars (with drawings if possible) of the periscopes used in the submarines of the Royal Navy. You kindly refer me to any published accounts of them or to the required information?—T. C. CHAPLIN.

QUESTIONS.—I cannot answer your question. Matters of this kind are not to be published in detail, as they are kept secret as long as possible, or until a better device is found. The only published descriptions we know of are extremely vague and relate only to tube instruments. The general principle is that of a tube reflector at both ends, the one at the upper end reflecting an image downwards that is observed in the lower reflector. Total internal reflection and also parabolic reflectors have been used, but I believe they have all proved unsatisfactory. What device is in use now we do not know. The Patent Office is the only place where you would be likely to get any information, and that would involve searching the patent specifications.

DAMAGED CARBON PICTURE.—Having received a carbon enlargement of a picture, I find it all covered with what looks like mildew. On trying I am informed that the picture was hung over the fireplace where there could be no possibility of damp to cause mildew.

On rubbing over with a tuft of cotton wool the fungus was removed, but there remain rusty-like marks, varying in size from the head of a pin to the diameter of a pea. It seems to me that they are caused by the mountant that has been used to fix the flexible to the card (on which it is mounted) decaying, or it may be due to impurities in the mount or mountant. Any information as to how these spots could be removed would greatly oblige.—GEO. HAN.

QUESTIONS.—Without seeing the picture it is impossible to say decidedly the nature of the markings. But from the description we have little doubt that they arise from mildew. Probably the picture was damaged when it was first hung over the fireplace, and the mildew developed the mildew. The only suggestion we can make is that the markings be rubbed off with a soft rag and then repainted with water colour.

PAINTING.—(1) I shall feel greatly obliged if you will kindly inform me, through the medium of the "B.J.J." which is the best way to copy a large painting in oils, somewhat dark, in vivid colours, figures of soldiers and horses in the distance, what kind of backing, backed or not, and exposure of same in a studio (well lighted, north light). I have tried ordinary Ilford and backed Ilford, but not satisfactory, although I tried it indoors and out

of doors, clear day, no sun; also one with vivid colours on. (2) During the cold weather and damp I had some trouble with my plates owing to leaving the P.O.P. on the negative over-night, and found in the morning the same stuck, and leaving spots all over the plate. Is there any means to remove such spots from negative?—R. J. OWEN.

(1) As you do not say in what way the result was "not satisfactory" we can only conjecture that you did not use a light filter. Ilford chromatic (preferably backed), with the suitable (Ilford) screen, ought to give you good rendering of the detail in all parts with, at the same time, correct colour values. But the exposure must be ample. (2) Try rubbing over the surface of the negative with pumice powder, afterwards immersing negative in strong hypo solution. If this fails to remove the stains the formula on page 793 of the "Almanac" is about the best remedy.

POSTCARD PHOTOGRAPHS.—A firm of postcard publishers have reproduced three of our photographs as postcards and put them on the market. We have since copyrighted these three. Will you inform us if we can stop them putting any more on the market?—SUSSEX YOKEL (Hastings).

Certainly; you can obtain an injunction to stop further copies, but a letter from your solicitors should be sufficient.

A DISPUTE.—W agrees to take photographs of machines made by the firm of X, and supply a copy for a certain price, the negative to be the property of X, but to remain in the possession of W till X wants it. Y buys the business of W, but he enters into no agreement with W or X concerning the agreement of W with X, either verbal or written. Y takes three or four pieces of machinery and supplies prints in the usual way to X. X's firm bankrupts and pays 10s. in the £. A new firm is established to carry on the same kind of business with some old hands and some new at the head of affairs. X sends for a copy from a negative which Y has lost or broken, so he cannot find it, and tells X so. X wants all the negatives back that W took, as well as those Y took. Can X demand them, considering it is a new firm and Y never signed any agreement whatever?—X Y Z.

It seems pretty clear that, according to the arrangement made, the negatives were the actual property of X, and on the bankruptcy they became the property of the trustee in the bankruptcy proceedings. It is more than probable that they passed, by sale, with all the other estate, to the new firm, and are, in fact, their property. They being the property of X the firm had no right to part with them to Y or anyone else. We expect that Y will have to give them up, as they seem to be the firm's property. But before doing so he might refer the firm to W, as it was he who held the negatives in trust, and should be responsible for them.

S. PORTER.—A light-filter will help matters, reducing glare. Probably also you have too strong front light on the painting. Try a light more from one side.

DAMAGED DAGUERRETYPE.—I should be obliged to you if you could tell me what to use to brighten the enclosed miniature, as it has got rather dull with age. Awaiting your kind reply.—HUTLY SCROFIELD.

The picture has been damaged by someone, who, not knowing the nature of the Daguerreotype image, has attempted to clean off the varnish by rubbing it, and in that way has removed a portion of the image and scratched the plate. The varnish remaining on the margins of the plate may be removed by the method described on page 311 of our issue of April 17 last, but that will not improve the face or the figure.

R. J. P. H.—We are sorry we cannot trace your second inquiry. Please repeat it. "Lustralene" rubbed into the prints may remove grain to some extent, but we doubt if it will be of very great advantage, and its alteration of the appearance of the print may be a drawback if the print is not yours to do what you like with.

ANOTHER DAMAGED DAGUERRETYPE.—Can you tell me if it is possible to restore this Daguerreotype and remove the stains from the face and neck? I should be very much obliged if you will do so.—AMY CASSELS.

The reply given to H. Schofield in this column answers your query. But in your case the stains can be removed to a great extent by the treatment to which we referred that correspondent. You must, however, bear in mind that the Daguerreotype image is a very delicate one to deal with. If the picture is a valued one

we should advise you to put it in the hands of one who is familiar with the working of the Daguerreotype process rather than attempt the work yourself.

**BLINDS QUERY.**—Will you kindly advise me as to the most suitable blinds for my studio, also the colours? I thought of having green and white ones, and is it better to have blinds to fall down or run horizontal, and shall I have three large blinds or six small ones (half the length)? I am trying to obtain a soft lighting on sitters. My studio is very narrow, and the light pours in very strong in summer. Your advice on the matter I shall value. I send measurements of glass in studio. Owing to it once having been an attic there are some very awkward beams which I cannot remove to alter glass.—**STUDIO.**

As the studio is small and there are beams that may interfere with the light we should advise that the blinds run horizontally. In the circumstances you will do better to have six small than three large ones. Although you send a sketch you do not mention the aspect of the building, so that we cannot say definitely what would be the best colour; but green and white, as a rule, are good for most aspects.

**PHOTOGRAPHS ON METAL.**—I have been trying to get a carbon print on to a metal cigarette case, following your instructions in February 7 issue. In my first attempt I succeeded in transferring the picture to case (double transfer), but a few minutes after stripping off the temporary support a split appeared right across the picture, and then it gradually cockled up everywhere and came right off. I tried again, and this time, within five minutes of contact, the support and picture came right away, with a nice glaze, as the gelatine had simply come away with it. Can you kindly explain? Do you think single transfer would be easier, though double transfer seems to me to be the best, as with single transfer one cannot be certain of getting the picture in exact position required? I may say I cleaned the case thoroughly with strong soda water before applying gelatine.—**E. E. CLEEVE.**

It is a little difficult to say the precise cause of your failure. The only suggestion we can make is that the metal was not absolutely clean. It is imperative that it should be so, more particularly in the case of highly polished surfaces. Try cleaning the metal with ammonia and well rinsing afterwards. We think the cause of the trouble lies here, and that idea is strengthened by the fact that the gelatine itself splits off the metal. In producing carbon pictures on metal surfaces it is desirable to have the carbon film as thin as possible, such as one gets by employing a thin negative to print from, so as to obtain an image with very little relief. Thick films of gelatine on a rigid support are liable to contract and split up when they become excessively dry. If you do not get on with double transfer, try single; it is rather easier to work.

**RETURN OF MONEY.**—I have had the misfortune to smash and fog about twelve negatives of people who live in my district, and I have written to all these people asking them to come and be taken over again. Is this sufficient, or ought I to return them their money? I do not wish to return any money, as they all live within easy distance of my studio. What I want to know is, am I compelled by law to return their money if they do not come to sit again?—**ANXIOUS.**

If the people cannot, or will not, come to you and sit again, of course you must return the money they have paid to you. It is not their fault that you accidentally smashed or fogged the negatives.

**E. P. C. (Nailsworth).**—If the prints at once obtained a thorough fixing in plain hypo solution or in one of proper composition they should not suffer.

**PHOTOGRAPHING SILVER PLATE.**—We have arranged to photograph a large silver challenge cup next week, and shall be glad of any hints you may give us on the best way of doing the work. We know that the usual method is to dull the silver by dabbing it over with putty, but this is not allowed by those in charge of the cup. It must not be tampered with in any way.—**J. AND CO.**

The best procedure, under the present circumstances, is this. Place the cup in position and arrange the light so as to have no strong reflections on it. Focus, and get everything ready for the exposure. Then mark the exact position of the cup so that it can accurately be replaced. Next put it in a cold place—out of doors

in cold weather will do, or a cold cellar—so that the metal is thoroughly cold. Then bring it into the warm studio and it in its former position, when in a few seconds moisture will be condensed upon it and dull the surface. The plate should at once be exposed. After the exposure has been made the moisture will quickly evaporate and the metal left as before. I may emphasise the fact that the plate must be exposed immediately the surface of the cup is dulled, otherwise the moisture will continue condensing upon it, and will then trickle down the sides, which would, of course, show in the picture. In a cold weather the same end would be secured by putting a few pieces of ice in the cup.

**COST OF STUDIO.**—Can you tell me the probable cost of erecting a studio for professional work on the top of a house? The space I propose to put up will be 25 x 11 feet. It will have to be substantially built, as it will be much exposed to weather. The roof I propose will be of the ridge-roof form and glazed both sides. What I want to know is how much the building is likely to cost. Any information you can give me in this direction I shall be thankful for.—**AT PRESENT AN AMATEUR.**

Your query is one that it is impossible to answer. Sometimes when a studio is erected on a housetop the alterations necessary to the roof for its reception, the staircase up to it, and incidental expenses come to as much, and in some instances more, than the actual cost of the studio itself. The best advice I can give you is to get out plans of what you want and then show them to a local builder, who, after seeing the premises, will give you an estimate for the work.

THE "FINANCIAL NEWS" HOLIDAY NUMBER, which was published with the ordinary daily issue of that paper on Monday last, is a gazetteer in brief and concise form for the help and information of the tourist, whether at home and abroad. The matters dealt with are of a practical character, including such necessary details as routes by which to travel, cost of tickets, hotels, boarding-houses, etc., whilst two good maps, one of Great Britain, the other of Central Europe, add to the efficiency of the publication.

**A NEW KODAK COMPETITION FOR EASTMAN PLATES.**—A competition, in which handsome cash prizes amounting to £240 are offered, is announced by Kodak, Ltd. The competition is for amateurs done upon Eastman plates, and is divided into three classes: Class I., for novices, restricted to those who have never won a prize in a photographic competition; Class II., open for amateurs not competing in Class I.; Class III., a special class for negatives developed in the new Eastman plate tank. The prospectus, which can be obtained from any dealer or by addressing a postcard to Kodak, Ltd., Clerkenwell Road, London, E.C., gives full particulars of the competition, including prize list and entry forms. The competition will be taken in three sections, closing respectively on August 21, September 21, and October 20, 1908, £80 being offered in each section, in amounts ranging from £1 to £15. Amateur photographers who are glass plate workers will doubtless be quick to grasp the opportunity of winning one of the attractive prizes offered by Kodak, Ltd., and the competition will doubtless represent a success which has attended previous contests of this nature organised by Kodak, Ltd.

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## SUMMARY.

Mr. H. E. Smith has made a step forward in the use of thinning agents by adapting them for use with P.O.P. A method is available which gives agreeable and permanent tones without use of gold, but closely resembling those obtained with the precious metal. (P. 490.)

An editorial article deals with the devices which may be employed in concealing the hand-camera when in use. (P. 487.)

Some notes on the personalia of the forthcoming Convention foreshadow a record meeting at Brussels. (P. 493.)

The eighth yearly handbook of the Professional Photographers' Association has just been issued. (P. 485.)

A case in which the delivery of postcards to time is concerned heard in the King's Bench Court last week. (P. 500.)

An ingenious device for helping the sale of frames for photographs has been described by an American art dealer. (P. 496.)

Flex cameras, photographs on china, and the telegraphic transmission of photographs are among the patents of the week. (P. 497.)

Last week's lecture by Dr. S. E. Sheppard on the chemistry of dyes dealt with absorption and the tanning of gelatine. (P. 479.)

Among the exhibitions now open are Mr. Benington's photographs at the R.P.S., and oil-pigment prints at the office of the "A.P." (P. 496.)

The exhibition of the Society of Colour Photographers closes to-morrow (Saturday) at 5 p.m.

## EX CATHEDRA.

**The Congress of Applied Chemistry.** The Congress of Applied Chemistry, an international body which hitherto has held its meetings on the Continent, will next year assemble in London from May 27 to June 2. The session of the Congress is divided into eleven sections, No. 9 being photographic chemistry, which will meet under the presidency of Sir William Abney. Many societies associated more or less directly with the chemical industries are represented in the organising committee of the Congress, and the support of foreign chemists is being obtained through committees in other countries. Further particulars may be obtained from the honorary secretary, Mr. Wm. Macnab, 10, Cromwell Crescent, London, S.W.

\* \* \*

**The Professional Photographers' Association.** The eighth handbook of the Professional Association is a summary of the present welfare of this body after seven years of activity. Those who have watched its career during this period can certainly credit it with having done much to carry out its avowed object, namely, "to improve the status of those practising photography as a profession; to defend their interests; to assist its members by advice, and to uphold the rights and dignities of the profession by all legitimate means." The current handbook shows in particular the aid afforded by the P.P.A. to its members in business matters, and we are glad to note the advice given on some items of business routine, the neglect of which frequently involves the photographer in dispute, if not in loss. As we have many times pointed out to those who have sought from us aid which it is out of our province to give, the professional photographer owes it to himself to be a member of the P.P.A., and, putting it on the lowest ground, we cannot recommend to him an equally remunerative investment for five shillings per annum.

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**Technique.** In Mr. Horace Mummery's very excellent lecture on "The Artistic Impulse," given at the R.P.S. at the last evening meeting, he dealt with the question of technique in the way familiar to every painter. That is to say, he took it for granted that in a work of art the technique must be perfect, or as nearly perfect as it is possible to make it. At the same time he pointed out that something more than fine technique was required to make a picture, and also that technique was so difficult to master in painting that many painters failed to acquire that something else. They had to devote so much of their time to the one thing that they were apt to neglect, or perhaps forget the importance of, the other. This is, of course, absolutely the right way to consider the question of technique, but we fear it is not exactly the way that many

photographers look at it, and we even doubt if all those who heard Mr. Mummery fully appreciated the force of his arguments. Good technique is certainly not looked upon as a *sine quâ non* by all photographers, and it is to be feared that some even follow exactly the opposite course to that laid down by Mr. Mummery. They strive for the pictorial "something more," but neglect the technique altogether. Possibly Mr. Mummery's lecture, when published, will do a little to convince them of the errors of their ways.

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**Competitions.** In the course of the discussion which followed Mr. Horace Mummery's lecture at the R.P.S., Mr. Hector Maclean made some very pertinent remarks with regard to the doubtful influence of exhibitions and competitions upon pictorial photography. His humorous sketch of the methods of the pot-hunter was full of point, and did not in the least over-state the case. Success in winning competitions, or in getting pictures accepted, is sometimes attributed to superlative artistic skill, and sometimes to luck; but there is another factor. A competition is not unlike a general examination. It is next to useless to fill a student with knowledge if at the same time you do not teach him how to pass an examination, and just as the art of "getting through" is a thing that can be learnt, so, no doubt, can the art of winning competitions. In the case of examinations, "passing" has long been a fine art, and this is so well recognised that the mere fact of having passed is no longer looked upon as a proof of knowledge. The passee may or may not be a very clever fellow, but judgment is reserved until by quite other methods he has shown what he knows or can do. Even now it is much the same with competitions in artistic work, and we fancy that many, even among competitors and judges themselves, are inclined to think with Mr. Maclean that competitions are of doubtful value.

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### The Commercial Side of Balloon Photography.

Apropos of our recent note of the proposed exhibition of balloon photography, a correspondent mentions how a West London photographer, debarred from entering the Franco-British Exhibition, made an ascent in the Dunlop captive balloon, and secured a number of excellent negatives. A year or two's time—when the photographer can hail an aero-taximeter—will doubtless see many examples of this kind of resourcefulness, and exhibition authorities will not find it so easy to sell sole rights of photographing if there is the aerial invader to reckon with.

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### A New Method of Combination Printing.

It is risky to describe anything as "new," and we are very doubtful if the method of combination printing to which our attention has recently been directed can be properly so called. For use in exhibition pictures actually hung on the walls of an exhibition gallery it possibly is new, but for other purposes it is undoubtedly old, for we have a dim recollection of having ourselves made use of it for pictorial purposes at about the age of two or upwards. It is a useful and very easy method, and the wonder is that no photographers seem to have used it in exhibition pictures before. There is no troublesome blocking out, no masking, no possibility of bad register, and no awkward joint to retouch. Neither is there any limit to the number of negatives that may be utilised. Whether we take two or twenty negatives does not matter. The work is just as easy, though the twenty may take up a little more time. Briefly, the procedure is this. Take two negatives, one for the sky, and one for the foreground. Make a print from each. Cut the bad sky off the good foreground print and

paste the remainder on to the good sky print. The foreground will thus be covered up, and only a good picture will remain. The proof of the pudding is in the eating, and the efficacy of the method can be studied at an exhibition that is being held within a hundred miles of this office.

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### The Paintings of Sorolla at the Grafton Galleries.

We heartily recommend a visit to Grafton Street for the pleasure and profit to be gained by a view of these remarkable paintings. Joaquin Sorolla is a Spaniard and an artist of the keenest and surest vision, with touch only surpassed by that of Sargent for directness and surety. His colour is dazzling and rich, and never cruel. In portraiture he is not always great, but his large array of small sketches displays great powers of truth and rapidity; whilst his larger landscapes and nudes in shades and shade are both subtle and broad. Not the least of his portraits is that of his father-in-law, Antonio Garcia, who stands holding a negative before his eyes, drying racks and other apparatus around him. He has also a portrait of "The Photographer Franzen" in the act of making an exposure with a large stand camera. We believe this is the first time that photography has served painter's subject-matter.

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### Photography in Finland.

Figures have been published in one of the German papers of the condition of professional photography in Finland, from which it appears that the sixty-two studios in the country give employment to 209 persons, and produce an output to the value of £22,500. Of the 209 employees, 151 are females—that is to say, there are two females employed for every male. Among the employees are twenty-eight foreigners, chiefly in the three most important towns, Finland, Helsingfors, Abo, and Viborg.

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### Chemical Synonyms.

Those who glance at the French and German periodicals may pick up information even if they are not familiar with either languages. Figures and formulæ are usually comprehensible, and, as Mr. Tony Lumpkin would have observed, such circumstances, is often the cream of the article. Here also there are pitfalls into which even those ordinarily familiar with the language have fallen disastrously. The Continental custom of writing the decimal point as a comma, and the comma (which we usually place before a set of three figures) as a full point, has led before now to some appalling transcriptions of French and German solutions. And the names of chemical substances are also open to confusion at the hands of the non-technical translator. "Soda" and "potasche" in German, for example, indicate the carbonates respectively of soda and potash, and not our caustic alkalies, soda and potash, which are written "Aetznatron" and "Aetzkali." And this, again, is a minor difficulty compared with "Unschwedligsäures Natrium," which the German easily rolls off his tongue in preference to our euphonious and convenient "hypo."

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### Silver Photo Salts and Subsalts.

One of the most interesting photographic exhibits in the Science Section of the Franco-British Exhibition is one by Major-General J. Waterhouse. This includes a number of specimens showing images produced by the action of light on silver and gold surfaces of various kinds, and a number of samples of the so-called subsalts of silver prepared by Wöhler's and E. Vogel's methods. In view of the fact that these, or very similar compounds, are continually being met with by photographic investigators, it



specimens collected here are of great interest. The variety of colour are very striking, and for purposes of reference and comparison it would often be useful to have such collection at hand. At first sight many of the specimens would probably never be recognised as mere combinations of silver with halogen, and similar combinations may often meet with, but mistaken for something else.

## DISGUIISING THE HAND CAMERA.

There are some subjects which are difficult to photograph where there is any outward evidence of a camera's proximity—street studies and groups in quaint, out-of-the-way neighbourhoods, for example. To exhibit an ordinary hand camera inevitably provokes curiosity, self-consciousness, even antagonism in the prospective subjects. In such cases it is good policy to mask or conceal the camera so that its nature is not perceived. There are, besides, numerous branches of work coming under the heading of secret photography in which a concealed camera is useful, and nothing of its possible employment, by the proper authorities, in the detection of crime. It is the intention of the present article to describe sundry simple methods by which the desired result can be accomplished. Let it be insisted, at the outset, that there is no excuse, in any circumstances, for taking photographs of individuals in groups against their will, or where it may reasonably be suspected that there would be an objection. It does not matter much that such a procedure is "bad form"; what is of far greater consequence is that it is unfair, unkind, and contemptible. There are, however, numerous cases where it may be taken for granted that no such objection would be made, but where the result would prove utterly failure through the conscious expression of the subjects if they were informed of the photographer's intentions.

The box-form magazine hand camera may be effectively concealed by wrapping it up as a brown paper parcel, tied with string in the usual way. It will be better to use a piece of packing of some kind, such as an old newspaper or a piece of cloth, round the edges of the camera to destroy the obvious shape of the parcel. In the front, where the lens is, a small portion of the wrapper is torn unevenly, forming roughly three sides of a square opening. The top fourth side of this rough square is left untorn, forming a flap, which is bent up when about to make an exposure but pushed down when the lens is not in use. An aperture of this description does not attract attention, while a neatly cut circular opening would probably do. A smaller opening with a flap is also torn for the use of the finder, with another one over the ground glass the latter. The string crossing the parcel lengthways is not quite central, or it will be in the way of the lens.

The brasswork of the lens should be hidden if possible; if necessary it may be blackened temporarily with black spirit varnish, which can afterwards be removed with methylated spirit if desired. Another good method, applicable to brown paper parcels, is as follows:—In the front, just above the lens, a large tie-on luggage strap is attached to the string that goes round the parcel. The strap is allowed to hang down, concealing the lens, when the camera is not in use, but is pushed aside, apparently by accident, whenever an exposure is to be made. The winding gear and the exposure lever must be made accessible by means of small tears in the paper, and possibly the lens itself may be completely disguised by gluing thin cloth loosely over the torn part, on the inside of the wrapper. As it slightly protrudes, this will look like the end of an inner wrapping, and will appear perfectly natural, while not impeding the working of lever or

release. That side of the parcel can be held against the body, away from curious inspection, when not in use. Some shutters may be worked by tying a short cord to the trigger release, and carrying it outside through a hole pierced in the brown paper. Pulling the cord will then depress the trigger. Small cameras may be wrapped up so that they form the front of a larger dummy parcel, which will be less likely to betray its real character than a smaller package.

A leather brief bag is a particularly unsuspecting looking article, and, if the worker possesses an old one which he does not mind spoiling, may be utilised very successfully for masking the camera. A hole is cut in one end, where the lens will come, as well as another smaller one for the finder, while the exposure may be made by means of a bulb and tubing arranged inside conveniently near the top. A few papers or bills of various kinds should be kept ready in the bag. The camera is prevented from shaking or moving by packing it round with soft paper or cloth. Then, when a photograph is to be secured, the worker stops, opens his bag, and taking out one of the papers appears to be reading it, or to be searching for something in the bag. In reality he is arranging the picture in the finder and pressing the bulb for the exposure. He then replaces the bill, shuts the bag, and walks innocently away. Even a reflex has been successfully worked in this way, using a rather deep bag. The openings in the bag for the lens and finder may be concealed, when not in use, by a strip of brown cardboard as nearly as possible the colour of the leather, which can be readily slipped in behind the holes or withdrawn at will. In some cases it may be preferable to place the finder on the top of the camera, so that it looks over the angle of the hinge when the bag is open; or it may be arranged in any other suitable position, as on the top of the bag near the handle, making sure, of course, that the image in the finder corresponds with that on the plate. The cheaper cloth or patent leather bags of the same shape are equally useful; so are small portmanteaux. There is no need for the photographer to face his subjects. He may have his side turned towards them, as if looking in quite a different direction, so long as the end of the parcel or bag is pointing where it is necessary. With a little practice, the finder can readily be looked at sideways, by a slight twist of the head; while in many cases the image can even be judged on its side, which, after all, is no more puzzling than the upside-down position given by the focussing screen of the ordinary stand camera.

An old waterproof or other garment, made into a parcel and carried by a leather strap, can be employed to conceal the camera. The latter is rolled in the centre of the garment, which is folded over at the ends. Flaps are then cut for the lens and finder openings, and for access if necessary to the shutter release and changing arrangement. The edges of the flaps should be loosely stitched round, to prevent confusion arising from the overlapping thicknesses of material. For this arrangement, a shutter worked by a bulb is the most convenient.

There is another method which can be used to give, at any rate, a temporary concealment of the camera; but this requires much greater dexterity and nerve. It is simply to carry the hand camera beneath an overcoat, rug, or similar article hung over an arm. It is quite possible to obtain a photograph in this way unnoticed, but it will be very difficult to get at the finder without betraying the artifice. There are some workers, however, who are capable of dispensing with the finder so long as the lens can be safely uncovered, and the above method may occasionally be useful to such, although for general purposes it cannot be compared with any of those previously mentioned.

Members of the daily growing army of lady photo-

graphers, who are often bashful of attracting too much public attention to their operations, may find many of the foregoing suggestions applicable to their own requirements, by a variation in the shape of the camera receptacle. A large hand-bag or reticule, for example, could advantageously take the place of the brief bag; the brown paper parcel is capable of many feminine amendments; and the strapped garment is quite within woman's own province. In addition, a good-sized muff may be mentioned as affording practicable cover for a small camera.

It is hardly necessary to say that any plan adopted for

masking the camera must be consistently and effectively carried out, or the photographer must not be surprised if the discovery of his seemingly guileful tactics should lead to resentment, perhaps shown in some unpleasant practical form. It is recommended as a counsel of safety never to make more than one exposure within a radius of any given spot. What passes unnoticed the time may be considered peculiar if repeated. In conclusion, it is particularly requisite, before commencing operations, to make sure that the lens is unobstructed, and none of the light is cut off in any way.

## THE CHEMISTRY AND PHYSICS OF COLLOIDS.

### III.

[The following is the abridged text of the third lecture by Dr. S. E. Sheppard at the L.C.C. School of Photo-Engraving, Bolt Court, Fleet Street, E.C. The two previous lectures have been reported in our issues of June 12 and 19.—Eds. "B.J."]

THERE is one phenomenon in colloid chemistry which I have already touched upon, but not dealt with specifically. That is what is termed "adsorption." The nature of this is still somewhat of a vexed question, and, to illustrate what is meant by it, I will instance certain particular cases. If powdered charcoal, purified cellulose, or silica dust, be wetted with a dye solution, much of the dye is removed from solution and associated with the solid. I say "associated," because the nature of the union is not absolutely clear. Again, in dealing with the swelling of colloid gels, which may be termed "absorption," part of the water is undoubtedly adsorbed. In the coagulation of colloids by electrolytes (salts, acids, bases), part of the electrolyte is taken down, and cannot be entirely removed by simple washing. Finally, in the mutual interaction of colloids, we again appear to be dealing with "adsorption." The substances composing the photographic image, whether in negatives on glass, in the various positive images formed originally by silver salts, or those due to pigment processes, possess great powers of adsorption, so it is worth while dealing with the question in some detail.

#### Adsorption.

The first question is, how does adsorption differ from ordinary chemical combination? Well, we have seen that the typical case of adsorption is the "taking up" by a solid of a dissolved substance, but we cannot speak of chemical combination, because on washing the compound formed the absorbed substance is continuously removed—in other words, on re-dilution, it goes back into solution, but a certain minimum remains.

#### Solid Solutions?

It is known that what are called "solid solutions" exist. For example, lead will diffuse into gold, and in several cases metals form mixtures which are not chemical compounds, in that there is no constant proportion between the components. Are adsorption compounds cases of solid solution? When a dye is removed by charcoal, reversibly, as instanced above, have we not a case parallel to the distribution of a substance between two solvents, as chloroform and water? In the latter case, however, there is a simple proportionality between the amount in each solvent, depending on the respective solubilities, which relation is known as Henry's law. This is not followed in adsorption.

#### A Surface Phenomenon.

Adsorption is very largely dependent on the state of division of the adsorbing body. The larger the free surface this presents the greater the adsorption. Hence porous and finely divided substances exhibit this phenomenon in a marked degree, and, as we should expect, colloid gels particularly. The "taking up" of dyes and inks is a case of adsorption, and it is evident

that the relative surface tension between the solid and solution plays a determining rôle. Properly speaking, adsorption should be limited to the case where the substance "adsorbed" settles out on the surface only: where it penetrates into the mass, we should speak of absorption. The dividing line, however, is hard to draw, especially in the case of colloid gels, where there is good reason to expect a very fine porous structure.

#### The Adsorption Law.

A variety of researches have shown that on bringing an adsorbing body into a solution, an equilibrium is soon reached, i.e., a state of rest in which the proportion of substance adsorbed to that remaining in solution remains constant, independent of the amount of the solid and the solution. This equilibrium depends, however, on the temperature, and also on the concentration, of the solution. The most systematic investigation is due to H. Freundlich's (*Zeitschr. Phys. Chem.*, 1906, 385), who found that well-marked equilibria were obtained. The amount adsorbed increases rapidly at first, then more slowly as a maximum is approached. Suppose  $a$  be the amount of dissolved substance,  $v$  the volume of fluid,  $m$  the amount of absorbing material, and  $n$  the amount adsorbed. The following equation was found to hold

$$ax = \lambda \frac{a - n}{v} m$$

where  $\lambda$  is a constant independent of the amount of adsorbed solid. Under certain conditions this may be written

$$\frac{n}{m} = ac^{1/q}$$

where  $c = \frac{a - n}{v}$  is the equilibrium concentration of the substance.

The ratio of  $c$  to  $\frac{n}{m}$ , or the "adsorption-coefficient," is therefore constant, as it would be if Henry's law held. This formula is in itself not of general validity. Thus, in strongly solved salt solutions, and with strong bases, the partition is more complicated.

#### Influence of Solvent and Dissolved Substance.

Adsorption is most marked in water, less in organic solvents. The nature of the absorbing material is of small moment. For acids are moderately, aromatic acids strongly, adsorbed. The influence of temperature is but slight.

#### Adsorption by Gels.

The adsorption most interesting to us as photographers is by hydrogels, such as gelatine, albumen, collodion, the



coagula, or precipitates, such as the silver halides, the original image, the image on P.O.P., etc. To begin with, part at least of the water taken up in "swelling" is adsorbed—i.e., is held by an attraction which is perhaps something between chemical and physical, or partaking of both. When this water is removed by desiccation, the vapour-pressure curve shows remarkable hysteresis, and at a certain point physical modifications occur, by which in certain gels the original clear gel becomes opalescent, pointing to a species of coagulation. There is reason to believe that such a structural modification takes place in gels that have been tanned are dried. Hydrogels also readily adsorb a large number of substances from solution. In microscopy the adsorption of dyestuffs is made use of in staining.

It must be understood that in such cases chemical reactions in the narrow sense also play a part—i.e., chemical combination between the gel, or a part of it, with the adsorbed substance, although in general no relation according to molecular proportions can be determined. But the chief action seems to be the concentration of the adsorbed substance on the surface of the adsorbing solid. Kieser, in experiments on the staining of silver halides by dyestuffs, found that the "grains" of silver were not stained throughout, but only an outer zone.

A particular case of adsorption of substances by hydrogels occurs when hydrosols are coagulated by electrolytes. In the case of emulsions, the precipitated halide takes down a certain quantity of electrolyte, usually the soluble bromide, and plays a part in the subsequent ripening. It will be remembered that one form of producing a colloidal solution, or hydrosol, is by peptisation—i.e., the action of a minute excess of electrolyte on the precipitated coagulum. This might lead, during ripening, to the production of a certain amount of hydrosol, hence to fogging. The question is dealt with by Lüppler in his valuable study of the "ripening process" (*Kolloidie und Photographie*, p. 97).

Salts which form soluble compounds of the silver halides are strongly adsorbed by them. Such are the alkali halides, sodium, potassium, thiocyanate, sulphite, etc. The adsorption of thiocyanate is shown especially in the use of this as a previous treatment with iron development. Furthermore, the use of thiocyanate to dissolve the silver halide leads to the formation of a slightly soluble silver thiocyanate, which are not retained or adsorbed by the gelatine. That is why fixing bath should never be used too far, and thorough fixation is necessary to free the film from silver. We shall come to this adsorption in considering colloid phenomena in printing.

#### Adsorption-compounds.

Adsorption-compounds are the complexes formed between the adsorbing solid and the substance adsorbed. Their composition depends on the manner of the adsorption-process, to wit, the concentration of the solution, the physical state of the adsorbing substance, temperature, etc., and no simple equivalent or combining weights are obtainable such as are characteristic of chemical compounds. Instances of inorganic adsorption-compounds are, for example, the amorphous complexes of ferric oxide with stannous oxide, lead peroxide with lead oxide, manganese peroxide and manganous oxide, and other colloidal oxides, ferric oxide with chromic oxide. Cassius' "gold purple," obtained by the action of stannous chloride on auric chloride. Zsigmondy has shown that this "gold purple" is formed when gold hydroxide is mixed with colloidal stannous acid, and that it is a colloid-adsorption-compound of the two, both similarly precipitated together by the electrolytes in solution.

#### Adsorption Phenomena in Photography.

The rôle of adsorption in photographic processes may be described as nothing less than essential and universal. The occurrence of the phenomenon has been long recognised, if under

other names, but we owe the clear delineation of a large number of cases to the researches of Dr. Lüppler-Cramer. The first case I shall deal with is the tanning of gelatine and other organic colloids, and from that we shall pass to colloid phenomena in negative making, and in the various after operations in printing, etc.

#### Tanning of Gelatine.

The tanning of bichromated colloids by the action of light is the basis of pigment printing, and of practically all photo-mechanical methods of reproduction.

When gelatine, albumen, fish-glue, are soaked with a solution of potassium bichromate, dried and exposed to light, certain changes take place, the most evident being the "tanning" of the colloid. That is (a) its melting point is raised, and it becomes insoluble (gelatine in hot water, albumen in cold water); (b) its swelling capacity is lessened or destroyed. With this is associated a differential absorption of dyes, such as is taken advantage of in pinatype and allied processes.

The chemical change in the tanning of gelatine is still somewhat obscure. I can only deal briefly here with the question, referring those interested to the work of Eder, Lumière and Seyewitz, Manly, and others. It appears certain that the potassium bichromate is reduced in light in the presence of the colloid, but it is not likely that the reaction depends upon oxidation of the gelatine. The accepted view is that a basic chromium chromate, of the constitution  $\text{Cr}_2\text{O}_3(\text{CrO}_3)_n$ , is formed, which unites with the gelatine. Further researches with basic chromic, iron, and aluminium salts, of which I shall speak directly, point to the conclusion that the active agent is colloidal chromium oxide, and that the "tanning" is due to the formation of a colloid complex or adsorption-compound of this with the gelatine. We shall see that the salts of chromium, iron, etc., are hydrolysed by gelatine, leading to the production of the colloidal hydroxides.

#### The Continuing Action of Light.

The insolubilisation of gelatine by bichromate is a process which takes place, in the presence of moisture, independently of light, which only catalyses the reaction. When partially exposed, the action passes from the insoluble portion to the rest, a change to which Abney gave the rather misleading name "the continuing action of light." Mr. Manly has proposed an explanation which appears sufficient. We consider, from the colloid chemical standpoint, that the compound  $\text{Cr}_2\text{O}_3(\text{CrO}_3)_n$  is not a true chemical compound, but an adsorption-compound, the components are in an easily separated condition, and provided there is sufficient moisture, can be separated by diffusion of the soluble component. Manly supposes that the  $\text{CrO}_3$  molecule wanders through the film, is reduced by the soluble gelatine, and tans the same, "but at the moment of formation of the  $\text{Cr}_2\text{O}_3$ , a molecule of  $\text{CrO}_3$ , chromic acid, is withdrawn from the ever present potassium bichromate. This newly acquired molecule of  $\text{CrO}_3$  is again dissolved, and travels further into the film to be again reduced to  $\text{Cr}_2\text{O}_3$  when it meets fresh gelatine." He points out that the action is a spreading one, which would, in time, render the whole film insoluble, and that temperature would increase the action by accelerating the diffusion of the  $\text{CrO}_3$ .

#### Tanning by Metal Salts.

In all cases of tanning by metal salts, it is noteworthy that the salts are such as are very susceptible to hydrolysis, and thereby to the formation of hydrosols, or colloid solutions of the hydroxides. In the presence of gelatine this hydrolysis is increased. Namias has shown that basic—in other words, hydrolysed—solutions of chrome alum have a much more powerful tanning action than the neutral or acid solution, and Lüppler-Cramer has shown that the essential is the formation of the hydrosol of the hydroxide (or oxide) of the heavy metal, which forms a colloid-complex, or adsorption-compound, with the

gelatine, coagulating the same in a solution. On this rests the use of citrates and oxalates as an addition to the bichromate sensitising bath. These form, with chromium, iron, etc., highly stable complex ions which are much less susceptible of hydrolysis, hence the sensitising mixture has less tendency to the spontaneous insolubilisation of the gelatine.

Uranium oxide salts also possess strong tanning powers for gelatine. Further, all the salts, both simple and complex, of the heavy metals, are strongly adsorbed by gelatine, though not necessarily with the accompaniment of tanning. The part

played by this action of adsorption—increased in the halide emulsions by adsorption to the halide or the gelatine halide complex—has been dealt with by Dr. Mees a writer, in dealing with Mr. Sterry's method of altering toning. The "desensitising" action of certain salts is due to their retention by adsorption and subsequent destruction of the "latent image."

According to Lüppo-Cramer, the numerous colloidal substances form adsorption-compounds with gelatine, leading partially to tanning, or completely, to tanning. S. E. SHEPHERD

## THIO SALTS FOR TONING THE BLEACHED SILVER IMAGE AND ALSO FOR TONING SILVER P.O.P. PRINTS.\*

[The following communication to the Royal Photographic Society by Mr. H. E. Smith, F.R.P.S., continues the latter's experiments on thio compounds in sulphide toning, but possesses particular interest from the fact that it records the successful use of these substances for the pleasing and inexpensive toning of P.O.P.—Eds. "B.J."]

CONTINUING some former notes on the use of thio salts of the chromium group such as thiomolybdates for toning bleached silver prints, the following brief particulars of some of the other compound salts I have tried may be but of little interest, as the practical value of these further salts appears to be slight, but a record of the experiments made may be of assistance to others. A matter of more practical importance seems to be the result of further experiments with thiomolybdates and thio salts of the chromium group as toners of P.O.P. prints, the tones being very near those given by gold and platinum, and of these recent experiments I give some particulars below.

First, then, as to the use of thio salts other than those of the chromium group referred to in my previous notes. Many compound thio or sulpho salts might be thought to be of use for the sulphiding of silver prints in the manner previously described, but the colours of the sulphides of the metals contained in these salts have to be considered, as well as the cost of their preparation as practical commercial articles. Also their stability when prepared is a very important point. For some or all of these reasons I consider that compound salts of the following types are not satisfactory for toning bleached bromide prints:—Sulphantimonates, thiovanadates, thiotellurates, thiohallates, thioarsenates, thioplatinates, thiotellurites. A good many other compound thio salts of somewhat similar types cannot be used for toning processes of this kind, as they are either insoluble in water or decomposed by it, or otherwise impracticable.

### Mercury and Schlippe's Salt

Schlippe's salt has been used mixed with sodium sulphide, but antimony sulphide tends to give too red a tone to please most tastes, if a sepia effect is wanted. Another suggestion that darker tones may be obtained with Schlippe's salt by the addition of a salt of mercury to the bleaching solution, seems open to objections from a chemical point of view. The use of mercury in a toning process is generally deprecated when one has in view the ultimate permanence of the print. In this case there would seem to be some reason to doubt the permanence of prints toned by such a method, as even if we assume that at the end of the toning process the mercury is present as  $\text{Hg}_2\text{S}$  or  $\text{HgS}$ ;  $\text{Hg}_2\text{S}$  (if this latter does exist at a temperature above zero) always contains some mercury ("Barfoed J.," Pr. 93, 230), and the red variety of  $\text{HgS}$  blackens by exposure to light, while the red or black variety may, with the  $\text{HgAgCl}_2$  in the bleached image, form sulpho-haloid compounds of the type  $2\text{HgS} \cdot \text{HgCl}_2$ . The reactions in this case would probably be complicated, and the results as regards permanence may well be regarded with considerable mistrust.

If permanence in the print is not required a mercury bleacher may certainly be used, followed by ammonium thiomolybdate, as Mr. Welborne Piper pointed out in "B.J." February 21, 1907, and the tone is good, but an acid clearing bath is necessary to prevent stains.

### Various Thio Darkening Compounds.

The following brief notes of the behaviour of some thio salts which are representative of the types of salts given above suitable for toning the bleached image may be given:—Ammoniovanadate  $(\text{NH}_4)_3\text{VS}_4$ . This is a beautiful salt so resembling potassium permanganate in appearance. Unfortunately its solution in cold distilled water, at first of a purple violet, quickly decomposes in the air, turning brown and depositing vanadium sulphide, while owing to the decomposition of the solution the odour of sulphuretted hydrogen is strong. Ammonium thioplatinate appears useless for retarding decomposition, as a freshly prepared solution of the salt, made alkaline with ammonia, lost its purple in fifteen minutes in a corked bottle half-full. Used as a solution, both with and without ammonia, it gives some intensification, but it stains the whites of the print badly, and this is difficult or impossible to clear.

Ammonium thioarsenate  $(\text{NH}_4)_3\text{As}_2\text{O}_5$ . The aqueous solution quickly breaks up, and the tone given by it is a yellowish brown, unpleasant for pictorial purposes.

Sodium thiohallate  $(\text{NaTiS}_2)$ . Crystals of this salt can be washed with alcohol, but with some loss. On treating with water the yellow crystals quickly decompose, the water dissolving out  $\text{Na}_2\text{S}$ , giving a precipitate of  $\text{Ti}_2\text{S}_7$ , so that it is doubtful if one can get a real solution of this salt. In any case the solution one does get gives poor tones.

Potassium thiotellurate and potassium thiotellurite gave experiments reddish brown tones after the style of those given by Schlippe's salt. The aqueous solution of this thiotellurite is unstable, turning in a short time from yellow to green and finally becoming colourless, leaving a greyish black precipitate, presumably  $\text{TeS}_3$ . The aqueous solution is one of the most stable of the thiotellurates, but does not give good tones.

Potassium thioplatinate, prepared by fusion, is unusually expensive to make, as one requires platinum black to start with, or a spongy platinum. The solution obtained by extracting the metal with cold water, tones badly and stains the high-lights. The bulk of the thioplatinate left is difficultly soluble in hot water. The saturated solution breaks up in the air with separation of sulphur, and re-crystallisation is not easy. The saturated solution from water is probably practically free from  $\text{K}_2\text{S}$ , but does not toning.

### Metallic Additions to the Bleaching Solution

But little of any very practical value seems possible in the way of adding an extra metal to the ordinary ferricyanide-bleaching solution, with a view to obtain considerable intensification of the bleached print when subsequently sulphided. Metals such as copper, bismuth, nickel, cobalt, tin, and platinum, for example, cannot well be introduced in any quantity in this way. Lead, mercury, and uranium can apparently be added, and though gold and mercury (if ammonium thiomolybdate is used to sulphide the bleached print) fair tones may be obtained, these tones seem to be good enough to be worth while running the clearing bath the high-lights, and the trouble of an extra bath (a clearing bath between bleaching and toning). With uranium

\* Patent of addition applied for 12341/08.



any way, the bleacher of course becomes an imperfect toning agent. With a certain ferricyanide-bromide bleacher that I use, a small portion of the precipitates formed by copper, bismuth, cobalt, platinum and tin salts seems to dissolve, but whether the metals are transferred to the bleached image, as lead, mercury, gold seem to be, I have not yet been able to determine. In any case, on sulphiding bromide prints bleached in such baths, there is no gain in intensity that I can detect, if ordinary alkaline bleaches are used. If the thiomolybdate sulphiding solution is the gain, if any, is masked by the intensification normally by this process, and it is difficult to judge on prints whether there is extra intensification or not.

In the use of copper one adds to the bleacher potassium citrate, for example, to facilitate the solution of the precipitate, one does not have a true bleacher, but a toning solution, and one may as well use the print at once by Ferguson's copper process (or the same ferricyanide toner in the case of this metal), and afterwards develop the result, which may of course be done. For uranium images alkaline sulphides must of course not be used, but a solution of sulphuretted hydrogen in water, and although in these fairly good tones may be obtained, the action of the sulphiding bath may be presumed to be only partial, if applied for a reasonable time, as nearly all the tone can be removed by sodium cyanate. With bromides toned by Ferguson's copper process, the sulphides or the thiomolybdate sulphiding solution may be the latter giving a rich tone; and as a strong solution of sodium oxalate has no apparent effect on the tone, the conversion of the copper salt into sulphide may be presumed to be complete.

### The Use of Thiomolybdate.

Returning again to the use of thio salts of the chromium group for sulphiding the bleached image, thiomolybdates containing a proportion of sulphur, such as, for example, ammonium thiomolybdate  $(\text{NH}_4)_2 \text{MoS}_4 \cdot \text{H}_2\text{O}$ , do not appear to offer any advantage over the normal thiomolybdates. Apart from increased difficulty of preparation in a pure state, there seems to be trouble often from metallic deposit in the shadows of the print, unless a small proportion of ammonium hydrate only is used in the solution, and the stain in this case is troublesome. Other salts may be used to replace potassium or ammonium in thiotungstate or thiomolybdates, such as barium strontium, calcium lithium, and manganese, which all form salts soluble in water, but many of these salts in common with most of those above mentioned are not so stable as compare badly with the thiomolybdates, etc., that I have recommended, as regards freedom from odour of sulphuretted hydrogen, owing no doubt to their instability. Barium thiomolybdate really requires distilled water to be used throughout, and solution is by no means free from odour. The strontium, calcium and lithium thiomolybdates give the prints a persistent yellow difficult or impossible to remove. The lithium salt is very objectionable in this respect. The iron and manganese salts cannot be recommended, especially the latter, which is very unstable. Much of the toning properties of potassium thiomolybdate, when it is prepared the native molybdenum sulphide by fusion, I attribute to the presence of iron thiomolybdate, from which the potassium salt is not freed. Mixing different thio salts together to form toning solutions does not seem to be of any practical use, for the mixed solutions in most cases do not keep well, and the increased complications in the chemical reactions seem to render the use of such mixtures undesirable.

### A Cheap Toner for P.O.P.

Coming now to the question of toning P.O.P. prints with thiomolybdates and allied salts, further experiments have shown me that these salts may be used with advantage for toning such papers. Thiomolybdate toning Cubrome "B" solution that has been put on the market for sulphiding bleached bromide prints is very suitable for this purpose and may be allowed to act on the P.O.P. print about the same time as recommended for bleached bromide, viz., 15 minutes. In this process the P.O.P. print must be first fixed in hypo (or ammonia or soda sulphite), as usual, and thoroughly washed, of course, in the case of hypo. The hypo bath may be rendered slightly alkaline with ammonia (though this is not imperative) or other of the usual fixing baths for which formulæ have been given. For P.O.P. prints may be employed.

After fixing and washing, the prints have, of course, usually an

unpleasant yellowish brown colour, but the toning solution applied as above recommended for about five minutes, has the effect of bringing back to a large extent the original density of the print, toning it, according to the type of printing paper used, to a colour that varies from a rich purple brown to a black tone, comparable with the tones hitherto obtained with the salts of gold and platinum. After toning, the prints may be rinsed, and the whites cleared with a bath of dilute ammonia applied for about two minutes and of 3 to 5 per cent. strength. In warm weather the 3 per cent strength is suitable. What is here meant by a 3 or 5 per cent. strength is 3 or 5 c.c. of .880 ammonium hydrate in 100 c.c. of water. After clearing the whites a final wash of about fifteen minutes completes the process. It appears to be unnecessary to wash the soluble silver salts out of the prints before fixing, as the omission of this usual proceeding when toning with gold before fixing does not seem to affect the final tone with this thiomolybdate process. Of course such washing before fixing may be done as a measure of precaution if preferred, or the soluble silver salts in the print may be converted into haloid salts of silver by the usual methods, such as a bath of sodium chloride (salt), sodium bromide, etc. I do not recommend sodium bromide for ammonia fixing. Any subsequent difference in the purity of the high-lights where this has been or has not been done is, however, difficult to trace, and I think it as unnecessary as washing before fixing in this case. Mr. R. H. Bow mentioned in the "Photographic Journal" for May, 1907, p. 245, that much time might be saved by fixing prints in ammonia, as the half hour or so usually necessary to wash out the hypo is practically saved. I think that the substitution of compound thio salts (such as ammonium thiomolybdate) for the alkaline sulphides (such as ammonium sulphide), previously used for toning prints that have been fixed in ammonia, will render Mr. Bow's quick fixing method more valuable, as with the thiomolybdate toning solution prints need not be printed so deeply as was necessary in the old ammonium sulphide process. Though the loss of depth in the fixing bath is, of course, the same, the thiomolybdate toning solution exhibits in this connection, to a large extent, the same important intensifying action that makes it so valuable for sulphiding bleached bromide prints.

### Print Somewhat Deeper.

The result with P.O.P. prints then is, that the loss of intensity on fixing the print as taken from the printing frame, is to a large extent brought back by the thiomolybdate toning bath, though not entirely, so that prints still have to be a little deeper than the finished result is required to be, some allowance being made for darkening on drying, which is rather a marked feature. Also the type of P.O.P. used affects the depth of printing, as mentioned below. This method of toning P.O.P. prints with compound thio salts such as thiomolybdates, thiotungstates, etc., may be used with advantage I find with practically all silver printing-out papers, gelatino-chloride, collodio-chloride, citro-chloride, albumen papers, and plain salted papers all taking good tones, though the tones naturally vary with the type of paper. The thiomolybdate solution has apparently no effect on prints that have already been toned with gold or platinum or on platinotype prints, or at all events practically none. Self-toning papers are also but little affected by such toning solutions, though sometimes a little extra toning effect may be got on these prints when of a bad colour, the shadows tending to a more violet tone on drying. Ferro-prussiate prints in the thiomolybdate toner are practically bleached to a greenish yellow.

### The Effect of the Printing Paper.

The tones generally obtained on different classes of P.O.P. papers may briefly be stated as follows:—Gelatino-chloride papers generally take a tone that is a rich photo-brown while wet, and which, on drying, becomes colder in tone and of a rich purple-brown, difficult to differentiate from an ordinary gold toned P.O.P. print. Collodio-chloride papers do not with the thiomolybdate toner generally take the purple brown tone referred to, but take on drying a practically black tone, comparable with the tone given by platinum toning. Collodio papers generally need to be printed only a little deeper than they would be for gold or platinum toning, as they do not lose so much depth in the fixing bath. Hypo seems the best fixing bath for these prints, as ammonia when followed by thiomolybdate toning on this class of paper sometimes yields slightly degraded high-lights presumably owing to insufficient fixation. On the other hand bronzed shadows caused by over-printing on these papers seem much

more amenable to the action of ammonia than hypo, and the ammonia in the thiomolybdate also helps to clear the bronzed effect from the shadows.

Albumen papers give tones from a rich photo-brown to a warm black platinum effect with thiomolybdate toner, and they require to be rather more deeply printed than gelatino-chloride papers, but the brand of paper may vary this a little, and of course I can only speak for my own experiments.

Plain salted papers with the thiomolybdate toner generally give from greys to warm browns, but the nature of the sizing substance used in their preparation, whether arrowroot, gelatine, or other, seems to affect the tone. If no sizing solution at all is used these papers are best fixed in hypo, as, in the case of some prints fixed in ammonia, I found that the thiomolybdate solution degraded the high-lights, probably owing to the silver bath sinking too far into the pores of the paper in the absence of any sizing. Hypo seems to clear this out better.

Thiomolybdate solutions as recommended for this process have, of course, the advantage over gold and platinum salts of being much cheaper, while the results should be even more permanent. There appears also to be complete absence of the double toning often met with in gold toning, while the

use of the thiomolybdate toner, as above mentioned, renders very practicable to fix prints in ammonium hydrate, effecting a great saving of time by eliminating the long wash fixing in hypo. This latter point should be of advantage in connection with work on the illustrated papers, where it is frequently necessary to make a print quickly for preparing a process. For press work of this description where time is often of importance, one ammonia bath, if plenty of solution be used, suffices, but it is much safer for ordinary work to use at least two or four ammonia baths of 3 to 5 per cent. strength for from three to four minutes each, and even with this precaution the process is much shorter than with hypo fixing, while the whites should be brilliantly pure.

In this process, after the final wash, it is always well to pass gently over the surface of the print a tuft of cotton wool or other soft material, to remove any deposit that may be formed by the action of the ammonia bath on the tap-water. Other compounds such as thioantimonates, etc., may be used in this process with some measure of success, but many of them stain the high-lights of the prints badly, and owing to their instability and other reasons are not really nearly so suitable for use.

HARRY E. SMITH, F.R.P.

[The following are the official instructions issued by the makers of the Cubrome thiomolybdate tones, Messrs. E. Edmund and Co. for the toning of P.O.P.]

The Cubrome thiomolybdate B solution will give with silver printing-out papers such as gelatino-chloride and albumen papers, etc., tones closely resembling those hitherto obtained with gold and platinum.

First fix the prints in hypo as usual (in this process a preliminary wash is unnecessary) and wash thoroughly. Then tone in the Cubrome thiomolybdate B solution for five minutes. The strength of the solution may be the same as for bromide toning, viz., five minims or drops of the B solution to the ounce of water. After toning rinse and clear the high-lights in a bath of dilute ammonia (3 per cent. to 5 per cent. strength) for about two minutes; a final wash of about fifteen minutes in running water completes the process.

The hypo bath may be made slightly alkaline with ammonia. If the washing water contains much lime it may be advisable to gently pass a tuft of cotton wool over the surface of the prints before placing them to dry, to remove any slight deposit.

As the thiomolybdate solution does not bring back all the intensity lost in fixing, printing has to be carried somewhat further than would be the case for gold toning.

Gelatino-chloride papers require to be printed rather deeply, and generally take a tone that is a rich "photo-brown" while wet, and which on drying becomes colder in tone and of a rich purple-brown, closely resembling a gold tone.

Collodio-chloride papers, as they do not lose so much in the hypo, do not require to be printed so deeply as gelatino-chloride

papers. Collodio-chloride papers do not generally take the pure black tone, but on drying are of a practically black tone, comparable with a platinum tone.

Albumen papers give tones from a rich photo-brown to a warm black platinum effect, and they should be printed at least as deeply as gelatino-chloride papers.

Plain salted papers take tones that vary somewhat with the nature of the sizing substance used.

For press work, where time is of importance, ammonium hydrate may be used for fixing, and a single bath, if plenty of solution is used, should suffice. The print should be kept moving in the bath (of about 5 per cent. strength), for from five to eight minutes when it may be rinsed and at once toned in the diluted B solution.

It is safer, however, with ammonia fixing to use from three to four baths for from three to four minutes each. For this purpose ammonia fixing is not advised for collodio-chloride prints or plain salted papers that have not been sized.

It will be noticed that the trouble of double-toning is done away with. The process is cheap, and when time is of importance at least half an hour may be saved by using the ammonia fixing method (which this process renders very practicable) instead of hypo.

Many prints may, of course, be toned together in a large dish, but they should be kept moving and not allowed to cling together. If prints are toned one over the other, as is sometimes done in gold toning, a longer time must be given, as the toning solution does not have free access to the prints.

#### CONVENTION LYRICS, No. 6.

There was a young artist of Bruges  
Whose feet were abnormally huge,  
So he let out his boots  
To convention galoots  
As a portable plate-changing ruse.

INTERNATIONAL PHOTOGRAPHIC EXHIBITION IN DRESDEN, 1909.—Photography in the Service of Ethnology will be demonstrated in next year's International Photographic Exhibition in the form of an industrial exhibition. The extent of this Special Exhibition, which will form a part of the Great Exhibition, will doubtless reach considerable magnitude, as a number of Home and Foreign States have promised their official participation. In this special exhibition all the civilised States of the world are going to show their characteristic beauties of land and people by means of artistic photographs. Objects pertaining to industrial art and ethnography will complete and give artistic finish to the whole, which will be placed in good architectural form by prominent artists of Dresden. This exhibition will undoubtedly serve greatly to open up fresh travelling grounds to

the travellers of all nations who are to be found in Dresden year after year, and especially at the time of the great exhibitions, and also increase the number of visitors to the foreign countries which are participating. The educative and ethnographical value of such an exhibition is also a matter not unworthy of consideration.

OXFORD CAMERA CLUB.—An interesting little ceremony took place last week in connection with the above club, when the members assembled to express their appreciation of the services of Mr. G. Norton, who for the past eleven years, has discharged the duties of honorary secretary, and to whose energy and zeal much of the success of the club was felt to be due. Sir William Herschel, president, on behalf of the members, said it was desired to express their thanks in tangible form, and he therefore asked Mr. Norton to accept of an eight-day chiming clock in oak case. Miss Ackland added a few words of appreciation on behalf of the lady members. Mr. Norton acknowledged the gift in a few well chosen remarks, adding that he felt sure the secretarial work connected with the club would be ably carried out by the two ladies who had succeeded him in that department.



## THE BRUSSELS MEETING OF THE PHOTOGRAPHIC CONVENTION.

at three o'clock on Monday, July 6, the official opening of the Convention takes place it will be found, unless every indication be falsified, that in the matter of membership the Convention of Brussels leaves behind the meetings of, at any rate, the past ten years. And the fact—for so it may be considered—is surely not surprising. Under the auspices of the Convention, and chiefly through the allied help of the president, Sir Cecil Hertslet, and the Association Belge and its president, Captain Van Bever, the members of the Convention will be able to spend a week in the chief artistic centres of Belgium, and will enjoy privileges in regard to photographing which a Belgian can obtain easily in all cases, and some not at all. The opening programme of meetings, lectures, and demonstrations is, moreover, a valuable part of the Convention programme, whilst the social side of a meeting such as that to be held at Brussels is, perhaps, as valuable a feature as any which figures formally in the printed handbook. The Convention has always succeeded in getting all its members known to one another, and this year, with the influx of Conventioners who are new or have not been seen for some years, the inducement to set out the week of July 11 for a visit to the Belgian capital is rather than usual. No wonder, then, as we hear from Secretary F. A. Bridge, that the applications for membership altogether exceed those of previous years. The annual subscription to the Convention, it should be explained, is 5s., whilst eligibility for membership simply amounts to a person's bona fides to take part in the proceedings with propriety.

### The President.

So uniformly fortunate in its presidents, the Convention this year is likely to be congratulated in seeing in that office Sir Cecil Hertslet, Majesty's Consul-General for Belgium. Photography has been Sir Cecil Hertslet's recreation for many years past—he was a juror of the photographic section of the Paris Exposition of 1900—but the claims of his official duties in the Consular service first at Antwerp and for the past five years in Antwerp have left him but scant opportunity personally to engage in the progress of photography. He has, however, kept closely in touch with what has been passing in his own and other countries, and his presidential address, it is anticipated, will touch on a number of topics which he, from his more distant standpoint, can observe in their true proportions to better advantage

than those of us who are in daily contact with them. The soul of courtesy and good nature, as Sir Cecil Hertslet is, the arrangements for the forthcoming Convention have had his personal interest and assistance to a great extent, and the visit to Antwerp, to conclude by an "At Home" in the Zoological Gardens, will be the day of the Convention week.

The president of the Convention comes of a family which has served the Foreign Office for two generations. Both his father, the late Sir Edward Hertslet, and his grandfather held positions in this department of the civil service. Sir Cecil's career commenced in 1868, when at eighteen years of age he entered the chief clerk's department of the Foreign Office. After some years in the Treaty Department he became Consul-General for the Departments of the Seine-Inférieure, Calvados, Eure, and the Orne in 1896, a position which he relinquished in 1903 to take up his present important duties in Antwerp. Sir Cecil Hertslet will be remembered for his interest in photography by members of the council of the Royal Photographic Society of twenty years ago.

### Some of Our Hosts.

Next, perhaps, to the president, the name of Captain Van Bever, president of the Association Belge, must be named as a moving spirit in Belgium for the reception of the Convention members. This is due largely to Captain Van Bever's efforts that members are to have unique privileges as to photographing in Antwerp, and if further proof were wanted of the Belgian president's enthusiasm in the cause of the Convention it is afforded by the fact that he has been taking lessons in the barbarous English language. Someone should surely have whispered to Captain Van Bever that there are limits to the sacrifices he is expected to make.

M. Vanderkindere, hon. local secretary of the Convention and general secretary of the Association Belge, has naturally had much to do with the Continental arrangements. With him also should be named M. Marissiaux, who will show on the Thursday evening his series of pictures of Venice. There are other members of the Association Belge who by their influence and assistance have ensured the smoothness of the machinery by which the members of the Convention are to see Belgium during the second week in July, and, lastly, we in England cannot forget the tireless energy of the one-man power



Photograph by]

SIR CECIL HERTSLET.

[Ferdinand Buyle, Antwerp.

President of the Photographic Convention of the United Kingdom, 1908-9.



[M. G. Marissiaux.  
M. Vanderkindere, Honorary Local Secretary of the Convention.



[Self-portrait.  
M. Gustave Marissiaux.



[Lahmer, Ghent.  
Captain A. Van Bever, President of the Association Belge  
de Photographie.



Baron Van Eyll, Ex-President of the Association Belge de Photographie.



and the Convention, the hon. general secretary, Mr. F. A. ge.

### The Friday Excursion—Antwerp.

to set foot in Antwerp at 10 in the morning and to leave it at past five in the evening is to allow all too little time for the



M. Chas. Puttemans, Vice-President of the Association  
Belge de Photographie.

rial and historical attractions of this great city and mercantile e. The conventioners, moreover, is given the opportunity of present at a reception at the Hotel de Ville, of lunching at the d Hotel, of taking a steamer trip on the Scheldt, and of meeting

the president at the Zoological Gardens, altogether a bewildering programme for a brief day of 5½ hours. Antwerp, however, is a place so rich in material for the photographer that many may be tempted to remain there on the Saturday and to journey back to London on that day or Sunday via Harwich.

In a recent issue we drew attention to the beautiful surroundings in which this year it is the good fortune of the Convention to meet—namely, the “Cercle Artistique,” standing in the park of Wauxhall. We may now give the diary for the week, and refer all of our readers who would participate in the most enjoyable of photographic outings to place themselves in communication with Mr. Bridge at East Lodge, Dalston Lane, London, N.E.

### The Convention Programme.

The following epitomises the chief doings of the Convention:—

- Monday, July 6, 9.30 to 12.—Rendezvous, issue of tickets, etc.  
3.0.—Presidential address. Paper by Dr. W. Scheffer on “The Structure of the Autochrome Plate.”  
A Chat on the Far East. By Capt. Harfeld (with lantern slides).  
8.0.—Conversazione, exhibition, etc.
- Tuesday, July 7, 8.30 to 6.0.—Excursion to Ghent.  
8.30.—Annual General Meeting.
- Wednesday, July 8, morning.—Conducted parties in Brussels.  
4.0.—Photograph of Convention Group by M. Alexandre, before Palais de Justice.  
7.0.—Annual Dinner at Grand Hotel, Boulevard Anspach.
- Thursday, July 9, 8.30 to 6.—Excursion to Villiers la Ville.  
8.30 p.m.—Lantern séance of Belgian views by members of the Association Belge, explained by M. Vanderkindere, and of Venice, by M. Marissiaux.
- Friday, July 10, 9.0.—Excursion to Antwerp.  
4.0.—The President At Home, Jardin Zoologique, Antwerp.  
8.30.—Screen-plate photography and cinematography in science, F. Martin Duncan.
- Saturday, July 11, 9.30.—Excursion to Malines.

## STRAY THOUGHTS ON RETOUCHING.

a good number of years the “art” of retouching has been ded as one of the most important branches of the business of a sional photographer, until at last the careless operator seems imagine that any defect in the lighting, posing, focussing, or oping “can all be put right in the retouching.” Some, I really re, think that a mere smudge of a negative can be made into a one by the retoucher. It reminds one of the old days of en-silver printing, when the paper was home sensitised, and mp weather the whites of the paper became a little bit yellow, came all right in the fixing; but if there was a bad vignette, a print, or any other defect, the printer always said, “Oh, it me right in the fixing.” This was said so often that I believe ne was quite sure that if the print was from the wrong negative ould come all right in the fixing.”

course, the experienced photographer, who loves his work, s how really little can be done in retouching without injury to adation of the subject, and he should and does forget that is any such person as the retoucher, and work for the best without relying upon any other aid. Something may be done the pencil and the knife, or scraper, and for large surfaces varnish and pencil on the glass side. One great principle must s be borne in mind, and that is, the unpardonable sin of ng” is being found out. If it becomes discernible it is wrong ad. If it is not to be detected, and it improves the finished it is justified. For instance, I have seen a very good print in etipation of an old woman sitting by a fireplace, and it was seriously considered by the judges for a medal when one of

them discovered that the figure was lighted from the left and the fireplace, etc., from the right, yet it did not look wrong until the reversal of the surroundings was pointed out. It did not receive a prize.

### The Obvious Retouching.

The ordinary pencil work on a portrait should never be seen, and the most foolish criticism I ever heard of a certain retoucher's work was that the retouching could not be seen in the print. If it is properly done it should not be seen at all, any more than the “spotting” out of white specks. Yet thousands of retouchers have wasted years in endeavouring to acquire the power to “stipple” a face all over, so that they can make a negative print as though sand had been sprinkled over the face of the sitter. No one but a pofessional photographer ever admired such a meretricious effect. The sitters do not like it, I am sure; I have heard them say so. Then one hears a photographer say: “Ah, it's a very nice negative, but it just wants modelling up.” And they would have it stippled all over till the print looks like a photograph of a wax mask. And, of course, a nice white streak is put down one side of the nose, so that the sitter appears to have carefully greased it before the exposure was made.

Some will argue that the water-colour artist and the miniature painter stipple the faces of their portraits, and why should not photographers do the same? The answer is because the artist must put his colour on in dots to get an even surface; especially is this so with the miniaturist, who usually works on a non-absorbent surface, such as ivory, whereon washes are almost impossible. So

the photographers foolishly copy a certain result, which is merely a means to an end. The painter does not stipple because he likes to see it—it is not intended to be seen at all when the picture is viewed at its proper distance.

By the way, I wonder how many photographers know the origin of the word "miniature"; most people imagine that it is merely something small or minute. It really comes from "minium," the Latin name of a red pigment, which was used to paint the capital letters in Roman manuscripts, the other letters being in black. The manuscripts were what we should call "rubricated"—that is, the capitals were put in red. The "rubrics" about which we hear so much in ecclesiastic disputes were the directions in old prayer-books printed in "red" ink to distinguish them from the words to be said or sung, which were printed in black. In the course of centuries the red capital letters were decorated more and more till they became small pictures, and the miniaturist, who was at first only the man who painted the red capital letters with the pigment *minium*, became the artist who painted those exquisite little pictures in the capital letters of old illuminated Bibles and prayer-books; and thus those little pictures were called "miniatures."

No doubt the reader will say: "What on earth has it got to do with photography?" Well, of course, it has nothing at all to do with it.

#### Retouching Away the Likeness.

Another fault of the average retoucher is that he, or more often she, takes all the real character out of the face by "modelling up," and makes all sitters look alike. It is not difficult to make a flattering photograph of a sitter, which still is a fairly good likeness and recognisable. But photographs are often made quite unlike the original, and when the sitter shows it to friends they say: "It is a nice photograph, but I don't know who it is." And this is often the fault of the retoucher. A good portrait should show the sitter at his or her best, and a certain amount of retouching is necessary, although portrait painters speak of the "gross immorality of retouching." Yet those same people will paint most flattering portraits of their sitters, in which every small defect is left out and every good point carefully emphasised. An untouched portrait is often quite as unlike the original as an over-retouched one, and the true portrait lies somewhere between the two. If the negative is to be printed in rough platinum or gum bichromate, retouching is scarcely necessary, but as the ordinary photographer never gets a customer who wants such things, he need not trouble. The more usual printing methods, however, exaggerate incipient wrinkles and other signs of approaching age, besides freckles and other little blemishes, in an alarming way; but that is no reason why every sign of character should be polished off the face.

It is not often that a photographer has a difficulty in making a portrait of a lady sitter look old enough, yet I have had such an experience. I had a shock when a lady who did not look more than five-and-twenty introduced herself as the grandmother of Mrs. So and So's little boy of about five or six, photographed a few days before. I had to take the lady several times because she complained that all the proofs made her look so ridiculously young, and so they did. At last, by printing the negatives, with scarcely any retouching at all, we succeeded in making the photographs look old enough. But, of course, this is not at all a common experience.

OLD HAND.

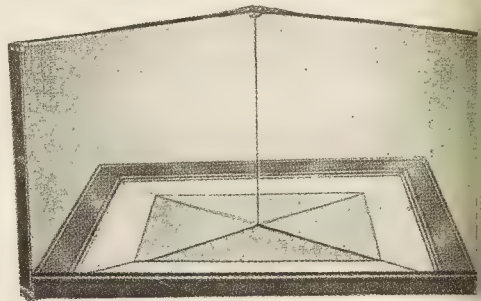
#### AN INGENIOUS DEVICE FOR PICTURE-FRAMERS.

MR. J. H. BANKS, Fremont, Nebraska, U.S.A., sends to the "Picture and Art Trade," Chicago, the following interesting description of a device he has originated to show a complete frame from one piece of moulding:—"The first point involved in picture-framing is in obtaining the order. This is usually done by showing samples of mouldings. The ease with which the order is procured and the price obtained are governed largely by the environment of the samples. Soiled, dusty scraps of moulding pulled out of a pile, or uneven samples piled on a table, or hung up promiscuously in some corner of the shop, are not in keeping with the one essential feature that should predominate in this business—that is, everything should suggest and appeal to the artistic.

"My method of showing the samples being an original one, I concluded to give the readers of the 'Picture and Art Trade' an outline of it. I make a cabinet on the wall, in a light place, twelve

inches deep, four feet high, width governed by amount of space used. The background is covered with red felt, and is inclined so that the lower edge starts at the front of the cabinet while the upper edge leans to the wall. I then take three strips of wood, about the size of a lath, and saw notches like saw teeth every two inches above it, making room for three rows of moulding. I cut the mouldings fifteen inches long, mitre each end, and place one in the saw-tooth notch. The moulding is held in place by the incline and felt covering of the background.

"I cannot imagine how a frame will look by merely looking at a sample," is a remark every picture-framer has heard times and times over.



number. However, 'necessity being the mother of invention,' I decided to show a complete frame, with any width or colour material, from the one sample.

"This is done by a simple arrangement of two mirrors, 12 inches, placed at perfect right angles, high enough to show a sample of mat board and a picture sliding under it. The mitres of the moulding are placed against the two mirrors, and the picture, together with the one sample, forms the four sides of the picture. The mat is formed by the same method, by placing a mat in front of the moulding. A mat with a circular opening can be obtained by using a half-circle mat.

"The customers, by this method, see what they are to get, and of what they imagine they are to get, as in the case of the more commonly used; at the same time they are more quickly and easily suited and much more ready to pay the price you ask. Arrange your samples systematically as to size and colour, and by attention to the little details in the frame work, such as joining, retouching corners, filling nail holes, and sealing back, you will then have your framing department on a basis where you command a trade at prices that will be profitable."

## Exhibitions.

#### PRINTS IN THE OIL PIGMENT PROCESS.

THE "B.J." is perhaps to be excused for feeling some little gratification at the sincerest form of flattery implied in the opening exhibition of pictures by the promoters of the "A.P." and "P. and F." But whilst we bow, a misgiving seizes us as to whether photo exhibitions are going to be so plentiful as to be "ten a penny" in daily expectation of an announcement of a like event in the Street. Why should "P. and F." wait? The collection at Lord's includes 72 prints, a fair proportion of which Mr. Arbuthnot Evershed's, Mr. Wickison's, Mr. Gear's, and M. Puyo's, have been before at exhibitions. M. Demachy's beautiful and characteristic work is represented by four prints, but perhaps the chief object of the exhibition is to show the use made of the oil process by pictorial workers, who made a place for themselves in the few years before "oil" was thought of. Thus in 69, "A Wet Merde," we are glad to find Mr. James A. Sinclair appearing in the exhibition arena, and still more glad to see that the oil in his hands is not allowed to run riot. He, like Mr. Inston, "oil" to enhance, not to abolish, the photographic quality of work. Yet comparing a platinotype print from the negative of Mr. Inston, we cannot see that our good friend of Liverpool



much strength to his work by adopting "oil" as the vehicle. "Glimpse of Dovedale," No. 26, is a better argument for his advocacy of the new process.

It is easy to find examples of where the "oil" or "bromoil" process is used. Unfortunately the processes are not distinguished in the exhibition—break down in the rendering of the surfaces of objects. Mr. Hurst gets his snow to look like snow in Nos. 61, 62, and 65, and in No. 60 he fails, as does Mr. Rawlins in No. 6.

F. J. Mortimer, more than anyone else, has departed from photographic quality in his eight prints. He is something of a draftsman, and could almost as well have "knocked" off the four effects without putting up a camera. The photographic has helped him nicely with the drawing, but the results are unattractive, photographically. Mr. Marshall shows a tendency in some direction, but stops short at a point represented by No. 46, a canal scene, in which the oil process has been most cleverly introduced to introduce a light burning at dusk in the cabin of an old road-beamed vessel. Mr. Marshall has given us so many works, useful from a photographic aspect, that we sincerely hope he will be led away by the facility of oil into the unprofitable wastes of un-photographic.

# PHOTOGRAPHS BY WALTER BENINGTON AT THE ROYAL PHOTOGRAPHIC SOCIETY.

Benington has made some excellent pictures in his and they, in turn, have duly made for him a good reputation. Why are people not more content to rest upon their laurels? fifty pictures are perhaps twenty-five more than necessary for the preservation of his fame. His "Peace," "Church of England," and a few more almost as good are still a delight to see; but would wish that he had made a few more such before sweeping up his present fifty for exhibition. He has a fine feeling for his art, as witness the "Fleet Street from a Roof," where he throws his subject into brilliance and keeps his street in low tone. Alas, however, for the limitations of camera work! the low-toned street is unabashed all the strong sharp shadows caused by the sunshine that the artist has eliminated. Until this fact is the print is entirely satisfying. The sublime Stonehenge is spoiled by its granular sky, which has more "texture" than the stones themselves. We think Mr. Benington will make a better picture in the future than he makes with his present fifty.

## Patent News.

Patent applications and specifications—are treated in Mechanical Notes.

Following applications for patents have been made between 1907 and 1908:

No. 12,613. Improvements in pads for photographic purposes. Frank James Mortimer, 37, Chancery Lane, London.

ROOM LAMP.—No. 12,649. Photographic dark-room lamp for producing coloured light. Max Muthel, 33, Cannon Street, London.

WASHING-RACK.—No. 12,714. Improved washing-rack for photographic negatives. Carl Norman and Houghtons Ltd., 88, High Street, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

Specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

PHOTOGRAPHS ON CHINA.—No. 11,849, 1907. The claim is for the transfer from a copper block which is made from a trans-  
fer.

The complete process consists as follows:—

A negative (preferably a reversed negative) is first made through glass or screens as in half-tone work or photo-mechanical. From this negative a transparency is then made and printed on a sheet of copper conveniently by the fish-glue method. The copper sheet is then etched deep enough to take the ceramic ink in and polished and printed from upon china transfer from which the print is then transferred to the china

article before or after glaze. The china article is then fired, and the result is a fine photographic reproduction upon the china. Thomas William Lascelles, Maybury Studios, Maybury Gardens, High Road, Willesden Green, and "The Illustrated London News and Sketch, Ltd.," Milford Lane, Strand, London.

STEREOSCOPIC SHUTTERS. No. 15,804, 1907. The invention relates to the construction of a shutter for stereoscopic cameras with the object of

1. Always obtaining, even in the case of rapid instantaneous work, a period of full opening of the shutter;

2. Enabling this period of full opening to be regulated between very wide limits, for example between 1 second and 1-100th of a second;

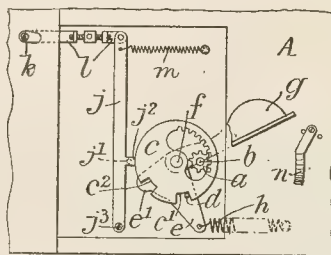
3. Ensuring that the closing of the shutter may always be effected at maximum speed whatever may be the period of full opening;

4. So balancing the moving parts that no vibration shall be transmitted to the photographic apparatus when the releasing mechanism is operated;

5. Mounting the plates of the shutter within the optical system so as to enable the diameter of the apertures in the plates and consequently the length and hence also the inertia of the plates to be reduced.

The specification contains the twelve drawings necessary for the explanation of the construction of the shutter. Jules Richard, 25, Rue Mélingue, Paris, France.

REFLEX CAMERAS.—No. 13,108. 1907. The specification describes an improvement in the camera protected by Patent No. 18,815, 1904 ("B.J.," August 4, 1905, p. 616), and the invention relates to improved means for raising the mirror quickly and releasing the shutter; for providing focussing extension, and adjusting the focussing hood. A pinion *a* is mounted upon the spindle *b*, which is driven by a segment of an interval wheel cut in disc *c*. This disc *c*, which we will call the rack disc, is pivoted to one of the focussing rack guides or sides of the camera *A*, and contains two slots or notches in its circumference, and the first of these slots *c*<sup>1</sup> engages with, and allows extra movement to, a pin or projection *d* on the leaf *e*, which lies adjacent to the rack disc *c*, and is connected by a short spindle *f*, to a thumb lever *g*, on the outside of the camera for operating same. The leaf *e*, which is pulled in one direction by a strong spring *h*, keeps the mirror *C* down on its seat at 45 degrees, and has a cam surface *e*<sup>1</sup> at one place, which, when the thumb lever *g* is depressed, passes a pin *j*<sup>1</sup>, fixed to a



projection *j*<sup>2</sup>, on a lever *j*, pivotted at *j*<sup>3</sup>. The lever *j*, which is connected to the shutter release *k* by the links *l*, is operated by a weak spring *m*, and is so arranged that its projection *j*<sup>2</sup> bears upon the periphery of the rack disc *c* until the slot *c*<sup>2</sup> thereon comes opposite thereto, when the spring *m* releases the shutter. George Russell Nicholls, Elm House, Gentleman's Row, Enfield; and John William Turner, of Turner, Son, and Hope, 88, Beaufort Street, Liverpool.

TELEGRAPHIC TRANSMISSION OF PHOTOGRAPHS.—No. 1,615. 1908.

The invention consists in the following process for the electrical transmission of photographic pictures:—A relief is reproduced on bichromated gelatine, and placed on a roller 2 at the transmitting station *A*, having a rotary movement around a fixed pin 3, so as to impart to it a translation movement. It is then traced by means of a stylus 4, fixed on a lever, which is only movable in its plane around an axis 6, the part of the lever 5 opposite the stylus 4 being angularly displaced, and its extremity describing arcs of a

circle, the length of which will be proportionate to the reliefs of the proof.

At this extremity of the lever 5 a commutation piece 7 is fixed, forming a slider adapter, to be displaced along a fixed resistance 8 or a row of contracts insulated one from another, and respectively connected with bobbins forming a resistance box.

Under these conditions, if the resistance 8 and the slider 7 in

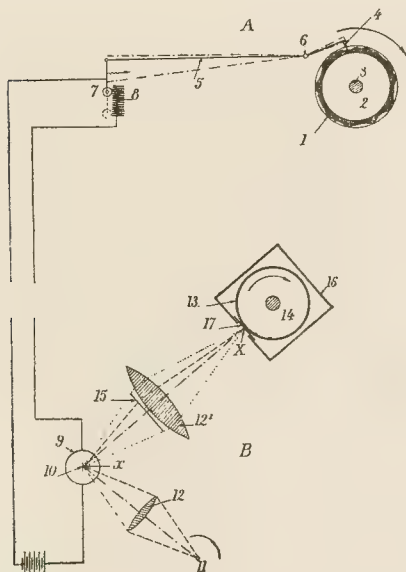


Fig. 1.

series complete an electric line circuit of constant voltage, and constant external resistance, the absolute intensity indicated by any suitable galvanometer introduced in this circuit will vary according to the position of the slider 7, and consequently according to the relief of the proof 1 moving under the stylus 4 at the transmitting station A. A very sensitive mirror galvanometer is arranged at the receiving station B. Under the action of the variable line current the mirror will thus turn about its point of suspension.

If a convergent fixed luminous bundle of rays emanating from a suitable source 11 be projected on the mirror 10, passing through a lens 12, arranged in such a way that the rays emanating from the source 11 are brought to a focus on the mirror, this latter (considered in its turn as a luminous source) gives rise to a reflected pencil, which is displaced simultaneously with the mirror, and in a plane at right angles thereto, these displacements always corresponding to the variations of the line current, and consequently to the deflections of the galvanometer 9.

In the path of the reflected luminous pencil a converging lens 12<sup>1</sup> is mounted in such a way that the point of reflection of the mirror 10 always falls on its principal axis. If these conditions are exactly fulfilled, an image of the point *x* will be obtained at X, always at the same point of the principal axis, whatever may be the angle of reflection. At this point or conjugate focus of the luminous pencil traversing the lens 12<sup>1</sup>, the receiving sensitive surface 13 is placed (a photographic film, for instance), wound on a cylinder 14, having a rotary motion and a translation movement either identical with, or superior or inferior to, but always synchronous with, that communicated to the cylinder 2 carrying the proof 1 at the transmitting station A.

A scale 15 of shades, strictly graded, extending from black to white, is arranged on the path of the luminous pencil reflected by the mirror 10, before or behind the lens 12<sup>1</sup>, or even on this latter. By this arrangement the intensity of the luminous pencil emitted by the mirror 10 will vary like the different points of this scale, according to the position which the line current traversing the galvanometer 9 will cause it to assume, and consequently according to the variations of the relief which pass under the stylus

4 at the transmitting station A. Under these conditions it is evident that the luminous pencil reflected by the mirror 10 will make a more or less energetic impression on the sensitive surface 13, always proportionate to the reliefs of the original image 1.

By reversing the scale 15 of colours, that is to say, by causing it to turn through 180 degrees, the image recorded will be changed; it will then be positive, if the proof 1 at the transmitting station is negative, and vice-versa; further, by substituting for a normal scale of shades, scales of exaggerated or insufficient gradation, prints recorded will be then strengthened or weakened.

This practical apparatus may also comprise parts for supporting the essential devices, which parts have nothing to do with the working of the apparatus.

The receiving station is also completed by a dark room 16, closing the cylinder 14, this chamber having a single opening closed by a diaphragm 17.

It is stated above that the cylinder 14 at the receiving station may have a rotary movement and an identical synchronous translation motion, which movements are superior or inferior to movements of the cylinder 2 of the transmitting station. Evidently if these movements are identical the print at the receiving station will be of the same dimensions as the original. In the other two cases either an enlarged print or a reduced print will be obtained. Of course, in these two cases there must be co-ordination between the translating and the rotary movement, so as to avoid any deformation of the picture, and similarly the opening of the diaphragm 17 will be modified in a suitable manner in each case. Edouard Belin, 2, Rue Poncelet, Paris.

## New Trade Names.

CARMINAL.—No. 302,188. Chemical substances used in manufacturing photography, or philosophical research and anti-corrosives. N. and Hoare, 3, Cornwall Road, Stamford Street, London, Varnish and Japan manufacturers. April 11, 1908.

AZOL.—No. 302,671. Photographic chemicals. Johnson and Manufacturing Chemists, Ltd., 23, Cross Street, Finsbury, London E.C., manufacturing chemists. April 30, 1908.

The following complete specification, etc., is open to inspection before acceptance under the Patents Act, 1901:—

COLOUR SCREENS.—No. 11,698. Manufacture of screens or colour surfaces for colour photography. Dufay.

## New Books.

"Die Projektion Photographischer Aufnahmen." By Hans Schmalz. 2nd Edition. Berlin: Gustav Schmidt. Mk. 4.

This volume treats chiefly of the apparatus, appliances, and series of lantern projection. It devotes a few pages to the method of lantern slide making, and it briefly outlines the optical principles of projection systems, but the greatest share of its 222 pages is occupied by a consideration of the illuminants available for lantern projection types of lantern, screens, carriers, and so on. The author introduces to his readers the most modern for apparatus, such as the high power Nernst lamps, the incandescent spirit lamps, portable oxygen generators, and other recent inventions for the lanternist. There is a chapter on stereoscopic projection, and on the instruments (aphengoscopes) for the projection of opaque objects.

"Screens and Galleries in English Churches." By Francis Henry Froude, 6s. nett.

The author in this volume traces the evolution of the rood in ecclesiastical architecture, following its gradual development from the Rood and Rood beams of early Christian churches to the chancel screen and choir screen of the monastic churches. This volume is one which should surely interest architectural photographers to whom, more perhaps than to many other classes of photographers, a knowledge of the historical significance of the subject is of importance. Certainly if photographers are under any obligation to Mr. Bond, he is no less so to them, for, as he acknowledges, his wealth of illustration could never have been

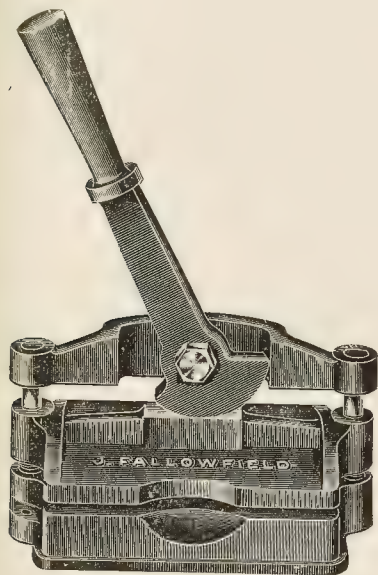


ther but for the help of many photographers. The printers and publishers have done their part well in the reproduction of the photographs, and the result is a treatise which, with the liberal aid of the camera, retells a story, already written in stone, of doctrinal and ritualistic changes.

## New Apparatus, &c.

"Embossa" Press. Sold by Jonathan Fallowfield, 146, Charing Cross Road, London, W.

Scarcely a week passes but we are asked by some photographic publisher or local publisher of postcards for information on plate-marking cards, in which the view occupies a portion only of the card, the manner of the postcards issued by the large firms. Therefore we are particularly glad to see that in this small hand-press, placed on the market by the firm of Fallowfield, the postcard publisher in a comparatively small way is provided with the means of giving this enhanced appearance to his productions at a trifling out-



he "Embossa" consists of a small lever press, which will take photograph up to  $5\frac{1}{2} \times 3\frac{1}{2}$ , the standard official postcard. With the press are provided six sets of dies, giving plate marks of the following dimensions:—3 inches circle,  $4\frac{1}{2} \times 2\frac{1}{2}$  oval, 3 x 2 oval, triangles  $2\frac{3}{4} \times 4\frac{1}{2}$ ,  $2\frac{3}{4} \times 3\frac{1}{2}$ , and  $1\frac{3}{4} \times 2\frac{3}{4}$ . Any one of these dies corresponding plate is quickly inserted in the press and the plate of the die brought into accurate register by means of two screws shown in the drawing. After packing the die as may be required, according to the thickness of the card, a single smart turn of the lever will give to the postcard the desired plate mark. The lever makes it easy to insert or withdraw the cards rapidly, and any boy or girl can thus give this finish to a photographer's own postcards at a small expense for labour. The price of the "Embossa" is 17s. 6d.

"Lodge" Hiding Tent. Made by Sanders and Crowhurst, Shaftesbury Avenue, London, W.

A naturalist photographer has to be as full of devices as a surrealist if he would portray his timid subjects at close range. We have heard of Mr. Kearton's property cow and haystack it has been left to Mr. R. B. Lodge to put in the hands of photographers a simple and portable means of following in the footsteps of such pioneers in this difficult branch of photography as the Keartons, Mr. Pike, and others. The tent is an erection of canvas, of an almost neutral, dust or khaki colour, and is of dimensions so that it covers the operator and a reflex

camera (such as the Birdland) and its stand. A small aperture allows the lens to obtain a view of the subject, whilst the operator, standing, watches the focussing screen, or, seated, can observe the twig or leaf on which he has focussed. By means of tapes, branches and grasses are attached to the outside of the tent, and the photographer (see photograph No. 2) is enabled to disguise his presence as effectually as did the man who, pursued by the police



No. 1.—The "Lodge" Hiding Tent.

of Penge some time ago, thrice eluded capture by impersonating a small dustbin. Naturalist photographers must surely welcome this device, the want of which must many times have been sorely felt, as hour after hour passed and Mrs. Hedgesparrow refused to approach within range of the camera. On such occasions in the future the only words for the photographer's aspirations are, "Oh



No. 2.—The Hidden Lodge.

for a 'Lodge' in some vast wilderness!" Could Cowper have anticipated the trials of your modern field-row photographer? The latter at any rate will not grudge 18s. 6d. for the apparatus nor the task of carrying the 3lb. bundle on his travels. Others, too, may find quite distinct and commercial uses for the apparatus. If only the disguise can be made good enough to deceive, say, a creditor or solicitor's clerk, we can see a demand for the tent which must

exceed Mr. Lodge's wildest expectations. A hurried retreat to the back garden, and the "wanted" photographer has converted himself into part of the landscape.

The Medio Anastigmat Lens. Sold by John J. Griffin and Sons, Limited, Kingsway, London, W.C.

A very suitable lens outfit for the amateur photographer who wishes to do really good work, but requires to spend a comparatively small sum on one lens only, is provided by Messrs. Griffin in the "Medio" anastigmat, which is supplied in two sizes only, of 5½ and 6½ inches focus for quarter-plate and half-plate respectively. The lens is issued complete with the well-known and convenient



"Koilos" shutter, and the prices are but £2 7s. 6d. and £3 3s. The lens works at  $f/7.7$ , and though it is not advanced as equal in quality to the leading anastigmats, the definition is good, and, with some stopping down, the lens covers over a considerable angle excellently. The range of shutter exposures and the general convenience of the adjustments of the "Koilos" are other good points about the outfit.

#### CATALOGUES AND TRADE NOTICES.

**DEALERS ONLY.**—The new issue of the trade circular of Messrs. John J. Griffin and Co., Ltd., Kingsway, W.C., has just made its appearance, and will be sent regularly month by month to dealers who apply for it. Messrs. Griffin make a good suggestion to dealers as to increasing business (see page 3).

**THE WATKINS' METERS AND METHODS.**—A new catalogue of the Watkins Meter Company describes the complete list of those useful aids to practice which have followed in the train of the Watkins meter. The new list has a good deal to say on Mr. Watkins' recently introduced method of time development, and is also of general use for reference.

**THE ISOSTIGMAR.**—Messrs. R. and J. Beck, 68, Cornhill, E.C., have just issued a 28-page booklet, describing in detail the properties and working advantages of the Isostigmar lens. The list conveys, by aid of several half-tone reproductions, a useful idea of the lens, and particulars are appended of Messrs. Beck's special arrangements for the purchase of an Isostigmar, in exchange for another of their lenses.

**COLOUR PHOTOGRAPHY.**—The special summer number of "The Studio," 1906 (ready early in July) will be devoted to the consideration of colour photography and other recent developments in the art of the camera. Facsimile reproduction of colour plates taken direct from nature by the leading artist-photographers will be the especial feature of the volume, which will form a most fascinating and instructive review of the latest achievements in the photographic world.

**PHOTOGRAPHIC ASSOCIATION OF CANADA.**—The annual convention will be held in Toronto on August 4, 5, and 6. Subjects of practical interest to professional photographers will be discussed.

**BROMOIL PRINTS.**—Messrs. John J. Griffin and Sons, Ltd., ask us to say that the exhibition of Bromoil prints, formerly shown at the "B. J." offices, remains open at their Rendezvous, Kingsway, until the end of the present month. It can be visited during ordinary business hours.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

SATURDAY, JUNE 27.

Liverpool Amateur Photographic Association. Excursion to Ludlow.  
South Suburban Photographic Society. Excursion to Oxshott. H. J. Blain.  
Hackney Photographic Society. Excursion to Otters Pool.  
Southend-on-Sea Photographic Society. Trip in a Leigh Bawley.  
North Middlesex Photographic Society. Outing to Denham. A. E. Smith.  
Handsworth Photographic Society. Excursion to Sutton Park.  
Chelsea and District Photographic Society. Outing to Heston and Hounslow.

MONDAY, JUNE 28.

Southampton Camera Club. "The Sinop Process of Collotype Printing." Yerbury.

TUESDAY, JUNE 30.

Hackney Photographic Society. "Photographing and Printing Clouds." Capper, J. Linley.  
Manchester Amateur Photographic Society. "Figure Studies in Sun." J. Shaw.

WEDNESDAY, JULY 1.

Leeds Camera Club. Excursion to Adel Woods.  
United Stereoscopic Society. "Artificial Light Photography." P. Dennis.

**EDINBURGH PHOTOGRAPHIC SOCIETY.**—At the annual meeting of this Society on June 3, the following office-bearers appointed:—President, Mr. J. F. Duthie; vice-presidents, H. Stewart Wallace, W.S., Mr. R. C. Malcolm, Advocate; secretary, Mr. J. S. McCulloch, W.S.; hon. treasurer, Mr. B. Peden, C.A.; hon. survey secretary, Mr. James Oliver; curator, Mr. John Anderson, and twelve members of council. Annual reports were adopted, and interesting details were of the important work which the society is doing in connection with the survey of Old and Modern Edinburgh. An enthusiastic spirit prevailed in the meeting, which augured well for session, in connection with which a splendid programme of meetings has already been prepared.

**LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.**—At a meeting on Thursday, June 18, the hon. sec., Mr. Ernest H. showed an entirely new reflex camera which will shortly be upon the market, and which is novel inasmuch as it is fitted with a swing back.

The camera, of which Mr. Human is the patentee, attracts much attention, and was greatly admired by all present. The back is so arranged that the true image is always shown the top focussing screen whether the back is moving or not, the planes (of the focussing screen and plate) moving together in connection with the mirror. As an example of the range of movement was mentioned that holding the camera in the hand, and from ground level, it was easy to include the whole of the Westminister Cathedral, using a six-inch lens.

## Commercial & Legal Intelligence.

**THE DELIVERY OF POSTCARD ORDERS.**—Before Mr. J. Channell, in the King's Bench Division of the High Court of Justice on Wednesday and Thursday of last week, a case was heard in the Receiver for the debenture-holders of the Cerio Photo Printing Company, Ltd. (in liquidation), of London and St. Albans, Messrs. Birn Brothers, fine art publishers, of Bunhill Row, E.C. 4, £183 in respect of goods sold and delivered. The defendant counter-claimed for breach of contract. Mr. Collins was counsel for the plaintiffs, and Mr. Lewis Thomas, K.C., with Mr. J. Emanuel, appeared for the defendants.

Mr. Collins explained that in November, 1906, the Cerio Printing Co. entered into a contract to supply Messrs. Birn with 720,000 picture postcards of actresses printed by a new process which was claimed to be superior to the ordinary "black and white" photographs. The photographs, however, were not in accordance with sample, and, in consequence of repeated complaints the defendants wrote that the plaintiffs must cease deliveries. The plaintiffs admitted the justice of the complaints and replied that the defects of the work were due to mechanical and chemical difficulties which they hoped had now been overcome. Nevertheless the defendants refused to accept delivery of any more photographs.



en, later on, the Receiver for the debenture-holders of the Company wrote to them pointing out that they owed the Company a certain sum of money the defendants replied through their lawyers that although this was so, they had a far larger claim against the Cerio Company in respect of breach of contract. The claim, however, Mr. Collins pointed out, was that the defendants were unable and unwilling to deliver the balance of the claim. The answer to this was that the defendants themselves had demanded the order.

Ernest Wm. Gundry, the Receiver for the debenture-holders, produced evidence that the sum claim appeared in the books of the Cerio Company as due from the defendants.

There was no other evidence for the plaintiffs, and the counter-claim proceeded with.

Thomas said his clients placed an order, at the end of 1906, with the Cerio Printing Company for 10,000 copies of seventy-two photographs of actresses. The plaintiffs represented that they had a method of producing brown or sepia-tinted photographs commanded a more ready sale than the ordinary black and white. The offer was accepted and the goods were to be delivered in instalments, in accordance with a sample submitted at the time the order was made. Counsel explained that at certain times when the demand for the photographs was much to the fore their photographs commanded a high sale. During the run of a popular comedy, for instance, the photographs of the actors and actresses would sell well, but when the demand was over there would be no longer a demand for photographs of particular poses. Therefore a rapid delivery of such goods was essential. But instead of fulfilling the terms of the contract the defendants could only promise the proofs by January 4, whereas the order was made on November 20. When deliveries were made the photographs were received from dealers of the bad quality of the order and these were continual up to March. The defendants then wrote declining to take any more of the photographs. Albert Elsner, one of the partners in the defendant firm, produced that each year they placed on the market 2,000,000 postcards of actresses. Referring to the contract entered into with the plaintiffs, he said that the specimen shown him by Mr. Thomas, the company's representative, was equal to any of the best. The company promised to supply photographs equal to the specimen. Although Mr. Fry made a note on the back of the specimen that delivery was to be made within one month, and it was at the end of November, they did not get the first samples for the plaintiffs to sell from until January 4, and stock began to come in very slowly at the end of January. There were constant complaints from customers of bad printing.

Mr. Collins pointed out that the defence, in their pleadings, only asked for delay in delivery, and made no claim in respect of the quality of the photographs.

The Judge: That is my difficulty. I think they have counter-claimed on the wrong thing. They have claimed for damages for not delivering the balance of the goods which they refused to accept, but they made no claim in respect of quality, as to which the counter-claim seems to indicate that they had a good case.

In cross-examination Mr. Collins called the witness's attention to the fact that the letter embodying the terms of the contract between the plaintiffs and the defendants did not contain any reference to delivery within one month. The witness replied that the details were fixed subsequently. He then supplied the photographs from which the Cerio Company had made the postcards.

Mr. Collins: Did not the plaintiffs complain that the photographs supplied were flat and produced bad negatives?

Witness: No. The fact that the cause of the trouble was that your photographs were inferior?—They were good photographs by the best photographic standards.

The Judge: Photographs of actresses. Do they cease to be popular when the popularity of an actress changes as often as the fashion of a woman's dress. There is a fluctuating demand for a particular actress's photograph. Witness explained that the popularity of an actress would be produced and for a time they would be in vogue. Then another twenty would be produced and the demand would lose their popularity.

The Judge: Then it is the photographs which lose their popularity when the actresses are no longer popular?

Ernest Wm. Gundry, the other partner in the defendant firm, also

gave evidence. He said the process introduced to them by the Cerio Company was decidedly new, at the price quoted—viz., between four and five shilling per gross.

In cross-examination witness admitted that the market for these particular photographs was not past at the time they refused to accept any more deliveries from the plaintiffs. If the quality had been better they could have sold them.

The Judge remarked that the defendants would have had a good case if only they had pleaded the right answer.

Mr. Thomas said he thought the pleading of the counter-claim as it stood covered the plaintiff's claim. Seeing that the Cerio Company was in liquidation it was not worth while to seek heavy damages from them, and the defendants only wished to cover by their counter-claim the amount of the claim against themselves.

Frank Edgar Fry, called for the defendants, said he was in the employment of the Cerio Printing Co. from the time of its formation to the winding up, and carried through the negotiations with the defendants. The photographs were to be produced according to a secret process of a Mr. Wagner, who was employed by the Cerio Company to carry out his process. The inventor was not able to produce large quantities at the same standard of quality as the specimen on which the order was given, and complaints were made repeatedly by the defendants up to the end of April, 1907.

Mr. Thomas: At the end of May were you in a position to deliver these goods according to quality?

Witness: I am afraid not. Things were getting worse.

But you wrote on June 5 that you thought your troubles were at an end?—Yes, but one has to be sanguine in business.

The Judge: Then your letter was a little bit of trade humbug.

Witness: I was under the impression when I wrote that the company would turn to the bromide process, but they did not do so, and shortly afterwards went into liquidation. The company was never in a position to fulfil the contract.

Replying to Mr. Collins, witness said he was now in business as a photographer on his own account, and had done business with the defendants.

This concluded the evidence, and Mr. Thomas, addressing the Judge, contended that the facts did not justify the plaintiffs alleging in their pleading that the cancellation of the contract was an amicable arrangement between the parties. It was perfectly clear there had been a breach of contract, and the damage sustained by the defendants was far in excess of the plaintiffs' claim.

Mr. Collins, dealing with the counter-claim, said the defendants relied for their claim in respect of delay upon a written contract in which nothing was said as to the time of delivery. It was clear from the correspondence that delivery was to be within a reasonable time, and therefore, counsel submitted, the claim for damages for delay was answered. After March 23 there did not appear to have been a single complaint as to quality, but the defendants did not claim for damages in respect of the earlier deliveries, which were admittedly defective as to quality. The contract ultimately appeared to have been mutually rescinded.

His Lordship, in giving judgment, alluded to some of the difficulties of the case, notably the differences between the written contract and the memoranda which preceded it. Nobody seemed to be clear when deliveries were to commence, or at what rate they were to continue. Presumably a reasonable quantity was to be delivered in a reasonable number of weeks. During the whole time of the deliveries there were complaints as to quality, and if the defendants had counterclaimed in respect of this and proved their case he would have held that they were entitled to recover. It might be that the defendants recognised a difficulty in proving it. Their complaint was damage to reputation, but unfortunately that was a damage not recoverable at law. In reply to the claim which they had put forward—viz., breach of contract in respect of delivery, the plaintiffs said that delivery was dispensed with by the defendants cancelling the order, and *prima facie* this was so. He had come to the conclusion that the breach was not one in respect of which the defendants could get damages. He took the letters of the defendants cancelling the order to mean, "Don't deliver any more; we won't ask you for any more, but we will put another set in your hands if you give us a written guarantee as to quality and time of delivery." The inference seemed to be that the defendants did not think then that they had such a contract as they were now saying they had, and were suing for damages

upon. He did not think the defendants had proved the refusal of the plaintiffs to deliver the goods. At this time the plaintiffs were professing to have got rid of their difficulties, and it was a question whether the defendants, before they could say there was a breach, should not have given the company an opportunity of showing whether their professions were true. Plaintiffs must have judgment for the sum which the defendants had admitted.

**A NORFOLK BANKRUPTCY.**—The examination of Mr. Scott Stanley Meale, of Coltishall, Norfolk, was held at the offices of the Official Receiver for the Norwich district last week. The summary of accounts showed gross liabilities amounting to £580 12s. 2d., and a deficiency of £77 0s. 2d. The cause of failure as alleged by him was bad trade. The Official Receiver, in the course of his observations, said: A receiving order was made on the debtor's own petition, consequent upon three creditors having obtained judgment against him. The debtor commenced trading as a grocer at Coltishall in April, 1896, with a capital of £45. A few months later he opened business as a photographer in the same premises. Debtor states that in April, 1907, he purchased his premises at Coltishall for £420, the greater part of which he obtained upon mortgage. The books kept comprise a cash book (not written up since last Christmas), daybook, and customers' ledger. The fully secured creditors are the several mortgagees of the premises which the debtor occupies. The partly secured creditors are the debtor's bankers, who hold a policy on his life. The whole of the unsecured liabilities are in respect of trade debts. Eventually the estate was left in the hands of the Official Receiver.

## News and Notes.

**PHOTO-CHEMISTRY** was the subject specially selected for discussion at the recent Congress of the Bunsen Society in Vienna. Dr. Luther of Dresden, in the introductory paper, deplored the fact that, notwithstanding the extensive range of photo-chemistry and its importance to science and industry, one small portion of it only—photographic chemistry—had up to the present received more than very scant attention. While in electro-technology an efficiency of 99 per cent. had been reached, and the steam engine had been brought to a high state of perfection, in photo-chemistry we had accomplished practically nothing. We were using up our reserves of coal, which represent immense stores of energy acquired through photo-chemical action, and had not commenced to devise a substitute to replace them when exhausted. Nearly all we know in the way of general laws governing photo-chemical reactions might be summed up in a few words: Light nearly invariably favours chemical change, seldom or never retarding it; the progress of the reaction is proportional to the amount of light and dependent upon the concentration in the reacting material of a certain substance which is to be regarded as the light-affected body.

Dr. Frank dealt with chemi-luminescence, defined as the emission of light during a chemical change without development of a high temperature in the system. Whether it be due to the glowing (ignition) of minute particles within the luminous mass, or to simple light emission from the whole, is not known; nor can we say if the phenomenon is reversible, i.e., whether communication of light to the material would develop the chemical change.

Professor Stobbe drew attention to the importance of a study of photo-chemistry towards elucidating such changes as occur in the oxidation of glue, gelatine, and albumen; photography would benefit by improved knowledge upon these decompositions. Other significant examples cited were the splitting of acetone into acetic acid and water, the bleaching of asphalt, and the fading of dyes.

Professor Schaum, of Marburg, discussed the change in the silver salt of the photographic plate, and expressed the belief that first a subhaloid, and from this a further intermediate product, was formed before metallic silver was set free.

A remarkable observation has been made by Dr. Scheffer, of Berlin. His sections of the gelatine emulsion under various conditions, greatly magnified upon a screen, showed that during development small "germs" and "spores" of silver shoot out from the granules of silver salt, gradually spreading at the expense of the latter.

Major-General von Hübl, of Vienna, exhibited a number of very

fine specimens in three colour films taken in natural colours, Lumière's Autochrome plates, and drew attention to the very faithful manner in which the hues were reproduced, particularly the grey shades very difficult to match.

**VOICE PHOTOGRAPHY.**—A method of voice photography has been discovered by Dr. Devaux-Charbonnel, a medical practitioner. An account of it was given by M. Poincaré at the Paris Académie des Sciences meeting last week. It appears that vowels and consonants pronounced before a microphone connected with a Blondel oscillograph, can be impressed on a photographic plate in the form of curves characteristic of each kind of sound. The curve of a vowel shows a regular recurrence, whereas the consonant sign does not recur. With a little practice, therefore, it is possible to decipher vowels and consonants and to read a page of the photographed words. By means of this method, explains Dr. Devaux-Charbonnel, it may be possible to read a telephonic communication made in the absence of the person for whom it is intended. The apparatus placed before a telephone, would photograph on a sensitive film the words heard in the receiver. The photographic signs may be read in the same way as one would read a page of shorthand. Devaux-Charbonnel also states that Mr. Duddell, the well-known English consulting electrician, suggests that it may be used for photographing the voices of criminals. "In conjunction with the impressions, this would supply an absolutely reliable, absolutely perfect means of identification." The apparatus has still to be perfected.

**PHOTOGRAPHIC SURVEY AND RECORD OF SURREY.**—The annual visitation arranged by Mr. Hector Maclean, F.R.P.S., will be held on Saturday, June 27. Dorking, Betchworth Park, Basingham Green, and Leigh will be visited, and opportunity afforded for photographing the ancient moated residence, Leigh Place.

**THE DEATH** is announced of Count Carlo Piscicelli-Taeggi, president of the Società Fotografica Italiana. The deceased gentleman had been a most zealous worker in Italian photographic circles for many years.

**THE "RAJAR" CAMERA**, offered monthly by Messrs. Rajar, Limited of Moberley, Cheshire, for the best print on "Rajar" P.O.P. has been awarded to A. Baugh, 106, Bowyer Road, Salford, Birmingham, this print having been judged the best during May. The paper on which the print was made was purchased from Messrs. Hurman, Limited, Victoria Square, Birmingham.

## Correspondence.

\**Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*

\**We do not undertake responsibility for the opinions expressed by our correspondents.*

### THE COST OF A STUDIO.

To the Editors.

Gentlemen,—With reference to the query of "At Present Amateur," re "Cost of Studio," in the "B.J." of to-day's date, I may say that a rough method of arriving at the approximate cost would be to price the cubic contents of the proposed building at 10s. per foot, for which amount a fairly substantial studio should be built under ordinary conditions. If the querist has proper plan and specification he can, of course, obtain competitive tenders from one or more local builders, without binding himself to accept the lowest or any tender.—Yours very truly,

DRINKWATER BULLOCK.

St. Anthony's Studio, 24, Queen Street, Hammersmith, W.,  
June 19, 1908.

### TONING BROMIDES—REFUSAL TO BLEACH.

To the Editors.

Gentlemen,—I recently met with the first refusal of a bromide print to bleach (in a ferricyanide bath), for which I was unable to account. The print was a 12 x 10 enlargement, on Kodak bromide paper. I was making some ozobromes in a bath which some weeks old, but which had just given an excellent print. The above bromide was made a few days before, and had been well washed.



1. The subject (as you will see from enclosed waste contact in same negative) consists of light half-tones (drapery, etc.), deep shadows against a black background. I used the method of ozobrome, and on separating print of tissue found, surprise, that the black parts were almost bleached, but the shadows were not altered. The tissue developed with a corresponding wash, re-developed, washed, and dried the bromide. Placed it in a bleaching bath to tone it, but the half-tones refused to bleach, the blacks bleaching perfectly. I again developed, etc., and a few days after tried it with a newly bleached, with the same result. The print is now the same as first made, except for a slight rustiness through re-development cannot send the print for testing, as I have not the negative and it is the only enlargement I made. It is an outdoor scene from which I have worked out the background in the negative should mention that I have always successfully toned prints on paper, except this one, and have made ozobromes with it. I have toned any others of the same batch of paper I can remember now. The developer throughout was diamidophenol.—Yours, etc., D. B. (Manchester).

I have heard of one or two cases of this difficulty, but the case of the half-tones and high-light resisting the bleacher, shadows succumb to it, is unknown to us.—Eds. "B.J."]

#### WRITTEN TESTIMONIALS—A CAUTION.

To the Editors.

men,—Having experienced a case myself which is of very importance to the profession, I think it is wise to caution persons to be careful in giving written references to their friends on leaving them.

The case is this:—About eighteen months ago, on dismissing an assistant, he asked me to give him a written reference. To help him out, I gave him one. Last summer, being again in want of an assistant, and this same assistant asking to come back, I engaged him, on a short time, as things were not satisfactory to me, I dismissed him without any reference. After a few weeks this assistant, on his own nearly opposite my business premises, put up a case and (not having any studio) canvassed all the photographers in the hood. In the show case he had my reference, framed and in a conspicuous position with a notice to the effect that his reference was equal to any, as shown by "your own townsman." This reference has been there (and is still) for weeks. If this is not a most unprincipled, unscrupulous, and unprofessional dealing I will not judge.

The editor tells me I should sue him for damages under false pretences, etc., as the reference was used entirely different and to what it was given for, and against my business.

In giving this in the interest of photographers, and should like to see comments by others on this subject of giving written references. In future, for myself I shall only give to those who ask me to engage any late assistant of mine. In fact, I often get a farce.—Yours truly, MARCUS.

Unpleasant reasons the name of the writer of the above letter is. Nevertheless, the incident may have its moral for photographers.—Eds. "B.J."]

#### SCULPTURE OR PHOTOGRAPHY.

To the Editors.

en,—At the exhibition just opened in Long Acre I have been scandalised by recognising in the print, No. 36, "The Girl," Bertram Park, a photograph from a statue exhibited at the Royal Academy in 1890 by the late E. Onslow Ford, R.A. The result of the oil process has enabled the printer to colour the statue of this piece of statuary so as to rob them of their own work. Dr. Evershed and Mr. Mortimer were with me and former asserted that the photograph was from flesh; the latter nothing on the point. Thenceforth neither did I, for I am sure. It may be that Mr. Bertram Park has a legal right to use the statue in this guise and without acknowledgment; but whether he has a moral right to tamper with a work of art of our most talented, most lamented, and most respected sculptor, especially as he gives no indication that the credit of it is due to himself.—Yours truly, F. C. TILNEY.

## Answers to Correspondents.

- \* All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.
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#### PHOTOGRAPHS REGISTERED:—

A. Russell, 6, Wilde Street, Liverpool. Two Photographs of the Sailing Ship "Dalgemar."

T. S. Wilson, 543, Lincoln Road, Peterborough. Photograph (Combination) of the Interior of St. Paul's Church, Peterborough, showing New Wood screen and the Rev A. F. Macken.

J. Ambler, Queen's Chambers, 7, Market Street, Manchester. Photograph of Frontage of New Royal Infirmary, Manchester.

D. A. AHUJA.—No further details of the studio have appeared. You might inquire from the Eastman Kodak Co., Rochester, U.S.A. We will bear in mind your suggestion and see if we can act upon it.

PRESS PHOTOGRAPHY.—Some weeks ago I sent a photograph half-plate of a current and stirring event to — for their exclusive use. The photograph was sent about two hours after it was taken, and they reproduced it in their paper. I did not state any price then, but asked them to send what was usual (am I not right in supposing a guinea to be the correct figure?). However, I have received no acknowledgment or reply. What ought I to do in this matter?—CONSTANT READER.

Unless the paper undertook to pay one guinea for the exclusive use you cannot charge this amount. We advise you to send in an account for 10s. 6d. for the use of the photograph in that one issue only of the paper.

PAPER NEGATIVES.—Could you give me information as to the best cheap and quick way of making paper negatives in plain black and white (no half-tones). I have tried several makes of ferro-gallic paper, but cannot get a black nearly opaque enough. Is there any way of intensifying the black of this paper or of changing the blue of ferro-prussiate paper to an opaque colour? Would the process of taking impressions from a dyed plate answer, and if so, where are the dyes to be obtained?—R. W. GRIFFITH.

The sepia process is the best for your purpose; materials from firms such as Marion and Co., 23, Soho Square, W.C. You will need to prepare a negative by contact from the drawing or tracing, and from this make a copy again on the sepia paper or on ordinary ferro-prussiate. A suitable formula for the home preparation of the paper is given in the "Almanac," page 833. The bluish image of the ferro-gallic print cannot be made non-actinic enough, and there is no practicable means of dealing with the ferro-prussiate print. We do not think the print-plate method would work well.

A. D. LEWIS.—We have made inquiries, but cannot hear of the firm.

L. C. CHAPIN (Lincoln, Nebraska).—The process is not yet on the market, but we understand it will be issued shortly.

EMBOSSING PRINTS.—How is the enclosed photograph enamelled and embossed? Is it done by any special machinery or mould made for the purpose?—S. N.

The enamelling is done in the usual way with collodion and gelatine. The embossing is done in an embossing press, which may be had from Jonathan Fallowfield. The method of doing this kind of work was fully described so recently as May 15 last. See page 375 of the number for that date.

H. ADDINGTON.—31, Binfield Road, Clapham, S.W.

G. J. PITT.—Your description, we think, is quite sufficient.

G. E. OVER.—Swan Engraving Company, Charing Cross Road, London, W.C.; Art Reproduction Company, Plough Court, Fetter Lane, E.C.

**TINTING BROMIDE PRINTS.**—Will you kindly give me your advice, through the "B.J.," on miniature colouring? The prints are on glossy bromide paper. (1) Do the prints want any preparing before colouring? If so, the way to prepare them. (2) Which do you think the best colours or tints, and where to obtain them?—**MINIATURE.**

(1) Prints on glossy bromide paper are not at all suitable if high-class miniatures are required. Such prints are usually tinted with transparent coal tar colours, and the paper requires no preparation. (2) Colours specially prepared for this class of work are supplied by all the principal dealers.

**CLEANING ENGRAVINGS.**—I have two engravings stained by mildew. Should be obliged if you could tell me how to remove same without damage to picture. I believe you published a bleaching formula some time back in the "Journal," but have mislaid same.—**ENGRAVING.**

As you have had no experience in cleaning engravings we should, if those you have are valuable, recommend you to put the work in the hands of an expert in restoring engravings. There are several methods of doing the work, and probably the safest in the hands of a novice is to immerse the engravings in a solution of hypochlorite of soda until the stains disappear. A formula for that is given on page 798 of the "Almanac."

**INTERESTED POSTCARD.**—Certainly, a thin piece of celluloid is placed between the wet negative and the (gaslight) paper. Did you not see the article on page 198 of the "B.J." for March 13?

**TROUBLE IN GLAZING PRINTS.**—Will you please help me out of a trouble if you can? When I glaze my prints by squeegeeing them on the ferrotype plates they sometimes come off all right, but at others they stick tight, and can only be got off by tearing the surface. This trouble only arises when I use the — paper, and not when I employ —, which I do not like so well. The way I work is to take the prints out of the last washing water and squeegee them direct upon the plate, after it has been rubbed over with French chalk, or rubbed over with paraffin oil, and then well polished. When the plates are treated either way —'s paper comes off all right, but the other sticks in many instances. I should like to use the —, as I prefer it in use. Can you assist me?—**NEMO.**

It is probable that if you treat the prints on the paper you like best by putting them in a dilute solution of formaline, or alum, and then washing them before they are squeegeed on the plate they will not stick. Probably, also, if the prints were dried and afterwards wetted they would not stick to the plates.

**COPYING DAGUERRETYPE.**—A customer has left with me a Daguerreotype to copy. It is a very good one, but I cannot get anything like a presentable copy from it, do what I will with it. I cannot get a clear and distinct image on the focussing screen; it seems all glare. I have covered up the whole of the camera with the focussing cloth, and stopped out all side light that could possibly cause reflections, but all to no purpose. All appears glare on the ground glass. Can you give me some useful information?—**T. WARREN.**

A Daguerreotype is a very easy picture to copy, and the results, as a rule, are better than those obtained from paper pictures. But you have gone quite the wrong way to work in trying with front light. All direct front light should be cut off, and the picture only illuminated by a strong side light, falling at an angle, say, of 45 deg. Then you will not be troubled with glare. Hold the picture in different positions, as regards light, and see which is best, and then copy it under those conditions.

**COPYRIGHT QUERY.**—Can you please tell me what I can do in the following? The secretary of our cricket club came to me asking what I would charge to photograph the eleven, saying most of the members would require a copy. I told him that I could take the picture (12 x 10) and supply a dozen copies mounted for 30s., and after copies at 2s. each. He said he would not order the dozen, he had done that once before, and that one or two of the team had their copies and he had been unable to get the money for them. He then asked me the price for taking the picture and supplying three copies—one for himself, one for the meeting room, and one for the captain, saying that I could then supply copies direct to them who wanted them, and he expected that all would. I then

agreed to take the group and supply the three copies for 7s. I have only sold one copy, and I now find that copies of the photograph are being sold as postcards all over the district. Can I stop the sale of them?—**FOOTBALL.**

The copyright belongs to the one who paid you for your work. You can do nothing in the matter.

**ON SALE OR RETURN.**—A year or so ago the traveller for a postcard firm called on me soliciting an order for their postcards. I declined to give him, as I did not think they were of subject could sell. He, however, persuaded me to let him leave a card and half, saying that what I did not sell the firm would take and only charge for what were sold. A week or so ago I received from the firm an account for the gross and half pictures the traveller had left. I at once returned those unsold (only a couple of dozen had been disposed of) and asked for the account of those sold, for which I would at once pay. They wrote saying they could not allow for those returned, as they had been through being exposed in the window, or being improperly stored. They are now threatening me with the county court unless account is immediately paid. Are they likely to recover? I will pay at once to save expenses.—**HERTS.**

If the facts be as stated, the firm can recover nothing. If supplied prints that faded in so short a time that was not their fault. Let them sue if they like, but there is no likelihood of their doing so. It is simply a case of "bluff."

**IMPURE WHITES IN VIGNETTES.**—I am sending you herewith a dozen vignettes made on — paper. You will see the margins which should be white are of a degraded or pinkish tint. All the other prints made on the same paper are as good as desired, the whites being quite white, and the same method was used for all. It is only the vignettes that are unsatisfactory, and you will see that they are very unsatisfactory. You enlighten me as to the reason?—**A. L.**

The cause of the tinting is that the toning of the pictures has been done in too strong a light. This is clearly shown in the prints by a faint outline where one print has protected another from the light for a time while it was in the toning bath. I say that the whites in the ordinary prints are pure, but they do not only appear so by contrast with the darker portions. Degradation is the same, except that it is not so manifest in the vignettes—that is, supposing the ordinary prints are under the same conditions as the vignettes.

**PHOTOGRAPHY.**—May I ask you to give us your opinion on the following? A friend and I have had an argument as to whether there is any hand work on the plates from which the German of —'s and —'s photogravures are printed. My friend says that they are free from any retouching; while I can (or think I can) see a large amount of work upon some of them. We ask your opinion on the point.—**J. AND A.**

All the plates are more or less worked upon by hand, a work is done by skilled engravers, who generally spend days on a single plate, and sometimes very much longer. The Germans mentioned make no pretensions that their plates are untouched. Their object is to produce pictures that look as much as possible like veritable mezzotint engravings as possible, and not like photographs at all. Photogravures are mostly reproductions of engravings, and are intended to compete, as such, with engravings.

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## SUMMARY.

easy process to be followed in cases where it is necessary to a figure from one group into another is given on page 511. Enlarging from retouched negatives particular care is necessary in employing a well-diffused illumination but in applying touching in a proper manner. Some notes on these points on page 506.

methods of making reversed negatives direct, either in the or by printing from other negatives, are the subject of notes German worker, Max Frank. (P. 509.)

M. Michell has some practical advice to give on the making es of daguerreotypes and glass positive portraits. (P. 507.) Those who desire to make occasional use of the carbon process es on page 513 may be recommended.

American worker has signified his satisfaction with the reflex as an instrument in the studio. (P. 512.)

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onpillard, in a lengthy paper on the practice of the Auto-process, recommends the mercury-cyanide intensifier as of al service, and prescribes a weak solution of hypo for use g remover prior to redevelopment. (P. 49.)

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agenous designs of Mr. E. A. Salt, which serve to explain hochrome process, are reproduced on page 55 in such a form y can be copied and coloured for lantern projection.

ufay screen-plate process turns out to be a method of dis- with registration in printing three impressions from a reen. The final screen obtained is one in which the filter- held in plain gelatin. (P. 51.)

or Namias has given a formula for the preparation of non- ochromatic plates by bathing. (P. 52.)

## EX CATHEDRA.

### Irregular Bleaching of Bromides.

At various times we have had questions with regard to the refusal of bromide prints to bleach in solutions such as potassium ferri-cyanide, and bromide, and the peculiar feature in many of these questions has been the fact that the trouble occurred in the case of the lighter tones of the print; that is, in the portions of the image that had received the least exposure. In Dr. W. Scheffer's paper on "Further Researches in the Action of Reducers," a very similar state of things is noted with regard to the persulphate reducer, with which Dr. Scheffer found that "the strongly lighted grains showed a materially greater loss of substance than the less exposed ones." This effect seems to be usual with persulphate, though Farmer's reducer does not give the same result. In the case of the ferri-cyanide and bromide bleacher, the effect seems to be uncertain. As a general rule, the less exposed parts are attacked first, and it is exceptional for them to resist the action of the bleacher. It is, however, clear that in some way the grains of silver in the less exposed parts must differ from those in the strongly exposed portions, else these differential effects could not well take place. It is hard to guess, and very difficult to determine, what the differences are, but it is evident that differences of a somewhat important nature must exist. It may, of course, be that in every grain, large or small, there is a certain more or less uniform quantity of intractable material that will not yield to the reagents. This supposition will explain the effects to a certain extent, but whether it is anything more than a supposition remains to be proved.

### Method in Oil Printing.

When a new process is introduced there is at once an anxious demand for very precise instructions. Generally such instructions are necessary, but the oil process is a peculiar one, and is none too precise in any particular. Several early workers gave very minute descriptions of their own methods of working, but it has become realised that many different methods are possible, and now every prominent worker is probably following methods that are more or less of his own invention. There are many methods of applying the pigment, and one that is perhaps least practised is the simple brushing on of the pigment with sweeping strokes. At times this is very useful, and if print and pigment are both in suitable condition it will give well-contrasted brilliant results. We find that the pigment requires to be exceptionally tacky, and to make it so we prepare the palette half an hour before use. The brush is very lightly charged, but plenty of contrast is soon attained. The effect is perhaps most readily produced when the image has been previously brought up by dabbing with a slightly softer

pigment. As regards palettes, plain glass or porcelain seems most popular, but for our own part we consider any kind of highly polished palette to be unsatisfactory. Bristol board is an excellent substitute for polished glass, but ground glass also has merits. Our most useful palette is a ground glass lantern slide-size cutting shape, fitted with a knob to serve as handle. It is easy to prepare a smooth film of pigment upon this, and it is very readily cleaned after use. We scrape off the pigment with the edge of a piece of glass, and then rub well with a cloth and drop or two of turpentine. As regards the methods of oil and bromoil pigmentation, it is as well to recognise the fact that each process requires different treatment. The bromoil print will not stand so much working upon as the oil print, but at the same time it can be attacked more boldly and with a much more heavily charged brush.

\* \* \*

### Thin Negatives.

Several processes that have been brought out recently are stated by their introducers or advocates to require "thin negatives," but when we are shown the style of negative that is considered most suitable, the quality of "thinness" is not usually the one that impresses us. We were assured at one time that thin negatives were essential for the oil process, and until we knew better we believed it. Trial, however, soon convinced us that fairly strong negatives were the best, and when we had the opportunity of studying the actual negatives used by a most prominent advocate of the "thin" theory we were hardly surprised to find that they were far stronger than any negatives that we were accustomed to make for any kind of printing process whatever. In another process, the so-called "thin" negative that we were advised to imitate proved to have a considerable resemblance to the old order of "soot and whitewash." The shadows were clear glass, while the lights, if not exactly "sooty," were distinctly strong. The fact is that "thinness" or "strength," as applied to negatives, are terms of the vaguest possible nature. Their meaning varies with the worker, and therefore they ought not to be used in instructions that pretend to be precise. They are no more definite than the terms "strong solution" and "weak solution." In the case of solutions, we demand exact formulæ, and in the case of negatives we should have precise descriptions.

\* \* \*

### The Repairs of Bellows and Blinds.

A crack in one of the gussets of a bellows is very easily repaired with indiarubber, and a camera which, from age or improper storage, has suffered in this way is quickly put into working condition again. A piece of thin indiarubber cloth—that sold at the rubber shops under the name of thin "nursery sheeting" is best for the present purpose—is cut a little larger than the portion to be repaired. This and the part to be repaired are smeared over, with the finger, somewhat thickly with rubber solution. When the solvents of the rubber have evaporated, and not before, the two rubbered surfaces are brought into contact and pressed together firmly with some hard surface—say the thumb-nail—when they will adhere with great tenacity. It may be well to mention that if the patch is misplaced in the first instance it is of no use to attempt to regulate it afterwards, or apply fresh cement: the patch should be taken quite off and the rubber cleaned away, both from the patch and the place to which it is to be applied. This is easily done by gently rolling it off with the ball of a finger, when it will come off cleanly. Fresh solution can then be applied. Any of the cement that may be outside the patch can be rolled off with the finger, so as to leave the work neat and clean. In the case of the repair of roller-blind shutters, the nursery sheeting may be too thick to permit of the blind working freely. At

most of the better-class mackintosh shops indiarubber, coated silk is to be had. This is exceedingly thin, a well suited for the thinnest roller blind. It should be to a round or oval shape, so as to avoid sharp corners and if neatly applied will in no way interfere with the working of the blind.

\* \* \*

### Rubber as an Adhesive in Combination Printing.

Writing of the above use of rubber to mind the special usefulness of rubber as an adhesive for temporarily affixing masks to the negative. This is usually done with gum or other aqueous cement, but if at a future time the negative is required for other purposes, the mask can seldom be removed without leaving marks or stains where the adhesive was applied. With rubber used as the adhesive, however, the mask can at any time—even months afterwards—be pulled off, and any adhering rubber rolled off, and then the negative be left in perfect condition. In some cases of double printing on P.O. it is convenient to hold the mask firmly in position while printing. This, of course, is impossible with any aqueous cement, but with rubber solution it is quite practicable. A few touches of the solution are put on the negative, the paper laid in position, when it will adhere. After printing, the paper is pulled off, and any rubber sticking to it rolled off with the finger. The print can then be toned, and no mark due to the cement will show in the finished picture. Again, in double printing in the camera process, one of the methods is to secure a mask to the tissue with dabs of rubber solution. After printing, the mask, which will serve for many prints, is removed, the dabs of rubber rolled off, when the tissue will develop just as if it had not been touched by the cement.

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### THE ENLARGING OF RETOUCHED NEGATIVES.

FROM time to time we receive inquiries as to difficulties arising in the enlargement of negatives which have been retouched, and the matter seems to be one of such general interest as to demand some detailed consideration. The usual complaint is that the retouching shows unduly in the enlargement, and the matter thus naturally divides itself into two sections—viz., defects in the retouching and mistakes in the process of enlarging.

The work of retouching may be subdivided into more usual retouching with the pencil and retouching which is aided by the knife or scraper. There are to begin with, various ideas as to the quality of retouching and a retouching which would satisfy a worker perfect in the original size might appear to him quite unsatisfactory on an enlargement even though that were the most possible. The ideal retouching is that which does not show as retouching, but the effect of which only is visible. Such work is done by a combination of artistic skill and technical ability which selects the suitable retouching medium, applies it in proper quantity, employs the degree of hardness of lead and the exact pressure required. It is fairly safe to say that nine out of ten professional portraits are retouched in such a way that though the contact print in platinotype may scarcely show any trace of pencilling, the enlargement will require "fading up" before it is satisfactory from the commercial point of view. Some retouching mediums are to blame for the effect of the finished work. The medium may be too tacky, and thus drag too much lead from the suitably soft pencil. If a hard pencil is then employed the touch is wiry or scratchy, the individual lines or touches being more or less apparent. The mediums, on the other hand, are friable or brittle



pressure of the pencil breaks up the thin and hard film. It is obtained a suitable medium and ascertained how much of it is necessary to apply to the film, the quantity being, of course, with the nature and extent of the work done, the choice of pencil comes next. A safe rule is to employ as soft a pencil and as light a touch as possible, consistent with a secure application of the lead. Any grasp and any hard pressure are almost sure to result in a mark which shows as a mark and the consequent action of photographic texture.

Work on the negative is certain to show much more prominently when enlarged than careful pencil work. The key is always to scratchiness, and to avoid this the edge of the scraper blade should not be too small. A scraper with a long radius gives an edge which will take off only broad shaving of film, while a short radius curve will be practically a scratch. Some making good the pencil is always necessary, and here the finest and hardest pencil is very useful.

Coming now to the enlarging of the properly retouched negative, we may make the broad and, of course, obvious point that all marks on the negative—that is, places where the opacity has been increased by the application of the scraper or decreased by the use of the scraper, must inevitably be enlarged, whatever the optical and illuminating arrangements. We are assuming, of course, that the enlargement is sharply focussed. If a direct light is used, however, much more than this will show. Any streakiness, such as the marks of the cloth or finger application of the retouching medium, any finger produced by resting the hand on the negative during the operation, or even a slightly greasy finger mark on the side of the negative, will show distinctly on the

enlarged print. An abrasion of the retouching medium, if that is rather too hard and brittle and the pencil is hard, will also show prominently, the effect being that of a blacker line on the negative or a whiter line on the enlargement than was intended. We may safely say, therefore, that under no circumstances should a negative be enlarged with a raw light unless it is absolutely untouched and free from even the most minute defects, both as to film and glass. Such negatives are rarely met with, and, of course, the professional portrait is excluded from such a class. The light used must be diffused, and it is not only necessary to diffuse the light passing through the negative, but to start further back still, and by means of a sheet of finely ground glass to diffuse the light before it passes through the condenser. If the ground glass is placed between the negative and the condenser, it must be fairly near to the negative, for the latter is always placed as closely as possible to the condenser. In this position the effect of diffusion is very slight, and there is, if a rather small stop is used in the projection lens, some risk of getting the grain of the ground glass in the enlargement. By placing the ground glass between the lamp and the condenser a perfectly diffused illumination is obtained, and no markings on the negative will be apparent on the enlargement except what may be seen when looking through the negative at a sheet of white paper well illuminated by daylight.

Should it be necessary at any time to enlarge a negative the retouching of which is scratchy, it may be an advantage to put the picture just slightly out of focus. The effect will not be one of general unsharpness or pronounced fuzziness, while the fine scratchy lines will be softened and made less conspicuous.

## ON COPYING FADED AND DETERIORATED PICTURES.

I.

### A Convenient Copying Device.

One of the very profitable parts of a professional photographer's business is the copying of old photographs of different kinds. Sometimes happens that some old and faded portrait is sent to him from which a reproduction, or enlargement, is made, as it may be the only representation in existence of a deceased and dear friend. More often than not, such a picture is in a very faded condition. I have had many old photographs, taken on the beach, through my hands, and there have been other and better photographs of the same person in existence, these have been preferred, simply because they are considered to be the best likeness. This is not only the case with such pictures, because the sitters have been taken "just for the fun of the thing," for, perhaps, a small fee; or so; hence there was no anxiety that the picture should turn out to be good, as there sometimes is when a subscription figure is paid for one taken in a studio. I knew a professional photographer who made a specialty of producing enlargements from old and faded photographs. These were vignettes with the objectionable parts thus taken out. They were then highly finished in monochrome, and my friend sent for his work as many guineas as the original picture cost. But his results were excellent, and conveyed whatever that the originals were common glass positives, or types, taken by a beach photographer for a few pence. Now photographers, when they have the kind of pictures referred to brought them to reproduce, look upon them as the light of a nuisance than as a source of good profit. With good business tact, they might frequently be made a very profitable line.

In this article I propose to say something on the subject of copying generally, and shall deal, *seriatim*, with the different types of pictures which come into photographers' hands. In some studios there is no convenient arrangement for copying photographs, and, as a result, the picture is pinned on a wall of the studio, the camera simply placed in front of it, and a copy made. Possibly, when all is satisfactorily arranged, a sitter arrives, and the copying has at once to be put aside. It is for such reasons as this that copying is often voted a bore by many. This trouble may be quite avoided, however, by having a proper copying board such as any one can easily make for himself; if not, any local carpenter will do the needful for him for a mere trifle. It need only be of small size, for the majority of this class of work seldom exceeds the half-plate size. All that is required is a stout board, about five feet long and an inch or so wider than the base of the camera employed, which may be a whole-plate or a half-plate. Along each side a thin lath is bradded, between which the camera slides. At one end is fixed a small drawing board, at right angles to the base, upon which is fastened the picture to be copied. For convenience in storing when out of use, the drawing board may be hinged so as to fall flat, being held in position, in use, by a couple of studs. The convenience of this simple piece of apparatus is that there is never any question as to whether the picture on the copying board is at right angles to the camera, so that all that has to be done is to move the camera backward or forward to get the size required. This arrangement may be secured on the top of the camera stand by an ordinary thumb-screw, or held on it by

a screw clamp. It may even be laid on a table or any other support, and can be turned or twisted about to any angle, so as to obtain a suitable lighting, a thing that is most important in copying deteriorated pictures, as this can be done without fear of disturbing the relative positions of the camera and the picture. Furthermore, should a sitter arrive, or the operator be called off, the whole can be lifted off and put aside without interfering with the arrangement.

#### Copying Daguerreotypes.

It may be as well to commence now with daguerreotypes. A daguerreotype, it may be said, is a picture taken on a silvered copper plate. It may seem quite superfluous to many to mention that, but I have, more than once, known old collodion glass positives being mistaken for daguerreotypes. Not infrequently, when one of these pictures is brought to be copied, it is more or less "faded"—that is, the silvered surface has become tarnished, and to a considerable extent the image has become hidden beneath it. These pictures can be "restored" by judicious treatment with a solution of cyanide of potassium, but the work is a ticklish one in the hands of those who are not familiar with the working of the daguerreotype process. Therefore I would suggest, when a daguerreotype is received in a tarnished condition, that it either be copied as it is, and the best possible made of it, or that it be placed in the hands of an expert: for if a novice attempts to do the work for the first time, the picture may be irretrievably ruined. No one should try his hand on a highly prized picture without previously experimenting on three or four of no value.

We shall assume, however, that the daguerreotype has not "faded," or that the best has to be made of it in its present state. I have read in the "journals," with, in some instances, amusement, most elaborate directions given for copying daguerreotypes, which the writers seem to think a most difficult thing to do. Personally, I look upon these pictures as being about the easiest of old photographs to copy, and the results they yield, if the picture is a good specimen of the process, look more like a photograph from life than a reproduction from another. Every one knows that a daguerreotype can only be seen in perfection in certain lights, and that is when they fall upon it at an angle. Therefore it follows that in copying the picture it should be lighted in a similar manner. In the first place, the picture must be taken out of the case and the covering glass, which is cemented to it with paper, removed. In doing this it must be handled with the greatest care, for although the daguerreotype is one of the most permanent of all silver pictures, its surface is so exceedingly delicate that the slightest touch upon it may cause permanent injury. If there is any dust on the plate, it should be removed with a bellows. A camel-hair brush, unless very lightly used, will produce very fine scratches on some of these pictures. With others it may be lightly used, as these pictures are not all alike in this respect.

#### Lighting Daguerreotypes.

The next thing is to fix the picture on the copying board. The light that should be employed in copying a daguerreotype is a strong side one, falling upon it almost at a right angle. All strong front light must be stopped off. On very closely examining a daguerreotype it will often be seen that there are some very faint lines, always in one direction, left from the "buffing," that is, the final polishing of the plate. When these can be detected the picture should be fixed on the copying board so that the light falls parallel with them, then they will not show in the copy, if thus arranged. About the best place to copy these pictures is an ordinary room with the originals placed at the side of the window. There is then no trouble with reflections. Similar conditions can, of course, be arranged in the studio. In lighting daguerreotypes it should be kept in mind that the angle of reflection equals the angle of incidence. Therefore, if the light falls on the picture, say, by way of example, at an

angle of 45 deg., the reflections from it will be at a similar angle and consequently quite away from the lens, so that we get a brilliant image in the camera; whereas, if it were lit with front light, the reflections from it would be towards the lens, with the result that there would be no brilliant and distinct image obtained.

#### The Care of Daguerreotypes.

For the negative any ordinary plate will suffice, but the slow ones, as a rule, yield the best results. When the negative has been secured the picture should at once be cemented to a cover glass as it originally was, and then returned to the camera to protect it from the atmosphere. In nine cases out of ten when a daguerreotype has faded, it will be found that, at the time or other, it has been taken out of its case for copying, not papered up again by the one who copied it. Hence, if one had access to it, the effect being most manifest round the edges.

#### Copying Glass Positives.

We will now consider the copying of another type of photograph, namely, glass positives. Many of these brought for copying may, possibly, be as good as when they were first taken, perhaps over forty years ago, that is, if they were properly cared for at the time, and backed up with either black velvet or a coating of good black varnish on the back of the plate. We call this "good" black varnish because some of that sold in the days of the positive collodion process was prone, after a while, to crack and split off the glass. That, however, is of no moment, as the varnish can easily be scraped off and replaced, when the picture will be just the same as it was at first. Sometimes, however, the black varnish was applied to the collodion surface so as to obtain a non-reversed picture, and also to save two varnishings. But when that was done, the whites of the pictures, as can readily be understood, were so pure as when the black was applied to the glass side, and, supposing that the black varnish was applied to the collodion side and has become cracked, we have a ticklish thing to deal with in the cracking of the varnish the collodion film, bearing the image, has likewise cracked, and possibly is splitting away from the glass. Great care has therefore to be taken that the picture does not get actually disturbed in handling. When a picture is in a bad condition it should be backed up with black velvet and, if made in the usual way, the negative being touched up afterwards. Sometimes, however, such pictures can be, temporarily at least, repaired in the following way:—The picture is taken out of its case, or frame, and exposed for some time—an hour or two, perhaps more—to the vapour of benzole. This is done by placing it, face upward, on a small block of wood in a dish, then pouring in benzole till it nearly reaches the picture, and then covering the dish with a plate of glass to prevent the evaporation of the benzole. By this treatment the vapour of benzole usually softens or semi-dissolves the bitumen varnish, and the fissures become healed up; also the collodion film goes back to the glass. When this occurs the picture should at once be copied. Then if a good black varnish is applied, a permanent repair may often be effected. The treatment, however, is not always successful, as a good picture will depend upon whether the picture has been much exposed to light, as the continued action of that would be to render the bitumen insoluble in benzole.

#### Making the Best of a Poor Positive.

The copying of a good glass positive in good condition is a simple work, and needs no comment. But very frequently the originals are just the reverse, being flat and lacking in contrast. We shall here assume that the picture has been varnished on the collodion side with a transparent varnish, the back with black varnish, or backed up with black velvet. From a picture of this description it is possible to obtain a brilliant negative in the ordinary way of copying. In such a case the best procedure is to remove the black



at the picture as a negative. It may be as well here to mention, for the benefit of those who are not familiar with the process, that a glass positive is, practically, an under- and under-developed negative, and the flatness sometimes seen in these pictures is usually due to over-exposure and development. Indeed, the worse some portraits seem as the better they show as negatives. From them transparencies can be made on dry plates by contact printing without injury. In many cases, however, glass positives, partly when they are the work of itinerant photographers, are varnished at all, and the silver surface has become dulled or stained. In this case, if the picture were copied in the usual way, the stains would show strongly in the negative. The collodion film in these cases has become decomposed, and is in character, with age, so that it is impossible to deal with the picture in the way just referred to. The film is probably so tender that it can scarcely be touched without suffering. Some, indeed, are almost as delicate to handle as wetotypes. If an attempt be made to varnish a positive of this kind, the probability is that the whole of the film will be dissolved by the varnish. Very frequently the varnish on positives may show very strongly when reflected light, but will show but little, or not at all, when by transmitted light. When this is so, good reproductions can always be obtained by copying them in the camera

by transmitted light, getting a transparency from which a negative can be made by contact printing.

Another way of dealing with pictures of this kind is as follows:—An enlargement is made direct in the enlarging camera on bromide paper, using the picture as a negative. This, being thin, is well suited for bromide paper. The enlargement is then worked up in monochrome and afterwards copied on a reduced scale. Supposing, say, the original is a quarter-plate or smaller size, the enlargement is made of the whole-plate, or 10 by 8, size. Then, after working it up it is copied to, say, cabinet size. When this system is adopted a good order for cabinets frequently follows, as the customer has no idea that such a good result could be obtained from such an unpromising original. Should an enlargement from the small original be ordered in the first instance, it may be made the full size direct, and then finished. From the finished enlargement reductions can be made to any size, and in this way further orders obtained.

I, like many others who have made a specialty of this class of work, have had many very profitable orders for copies and enlargements of wretchedly old and faded photographs, and I am surprised that so many in the profession seem to overlook this line of business. In a future article I propose to deal with the copying of other kinds of deteriorated photographs—paper prints in particular.

WM. MICHELL.

## METHODS OF PREPARING REVERSED NEGATIVES DIRECT.

For many purposes of enlarging and printing the making of one negative from another by a quick and certain method is a desideratum, as it is also in the preparation of transparencies for projection. The latter presents a more difficult problem than the former owing to the necessity of having perfectly clear high-lights, and therefore the following methods, which are given in recent issues of "Photographische Korrespondenz," whilst no doubt expressing the practical success of the writer from his point of view of preparing reversed negatives, can scarcely be recommended with the same confidence to lecturers and students in need of a quick and direct method of preparing a lantern slide from a drawing or diagram without the intervention of a negative. Of the processes named by Herr Frank, probably the Pinatype or dusting-on method would be the most satisfactory for this latter purpose could sufficient rapidity be, at the same time, obtained.—Eds. "B.J."]

It may be taken of the reversal of the image on a dry plate making one negative directly from another. With an exposure of several hundreds to several thousands the normal a negative is obtained instead of a positive transparency, but it is not every make of plate is adapted to this process. A plate which "works hard" is better than one which is soft. In the case of fine-grain plates reversal takes place so easily as in those of coarser grain. The result, also, should be one tending to contrasty and clear. Hydroquinone, pyro, adurol, and glycine are among the best reagents, and attention is needed in pushing development further than would be usually done, since the negative is somewhat less brilliantly than would be thought desirable appearance. Developing solution which has been used once or twice is preferable to freshly made, which readily gives soft results, over-exposure of negatives. It will be found that the image comes up quickly and with too much detail if the exposure has been overdone, the behaviour of the plates being exactly the same as that which follows ordinary exposure in the camera. The negative and the dry plate are pressed well in contact, film in an ordinary printing frame, and exposed either to light or daylight. In the case of the latter an exposure of half to three minutes to diffused light from a window taken as an average, depending on the distance of the plate and the speed of the plate.

Development the image appears first as a weak positive,

which disappears again in the developer, being replaced by a negative image. The developed plates are then fixed in an acid bath. The method of preparation naturally gives a reversed duplicate negative. If one correct as regards right and left is required the process must be repeated, using the reversed negative first made as the starting point. Films will, of course, obviate this, as printing can be done from either side; whilst, if the purpose of the reversed negative is enlargement, reversal is, of course, no objection. A good deal can be done in the process in the way of preparing an improved negative, the hardness or softness of the original can be greatly modified, and the process, with some practice, is sufficiently certain for regular work, especially when a constant artificial light is used.

### The Dusting-on Process.

The dusting-on process is well known as a means of preparing one negative from another, and it is only necessary to mention a formula, that of Bruno Meyer, which can be used for the purpose:—

A. Gum Arabic .....	8 gms. ....	$\frac{1}{4}$ oz.
Glucose .....	20 " ....	310 grs.
Honey, clear .....	4 " ....	60 "
Alcohol, 96 per cent. ....	3 " ....	50 minims.
Glycerine .....	2 to 5 drops	2 to 5 drops
Distilled water .....	20 ccs. ....	$\frac{1}{2}$ oz.-100 minims
B. Ammonium bichromate ...	10 gms. ....	1 oz.
Water .....	100 ccs. ....	10 oz.

One part of A is mixed with two parts of B and three parts of

distilled water added, the whole mixture being filtered until perfectly clear. Glass plates coated with this mixture are exposed under the negative until a faint brownish image is produced, and are then, on removal from the frame, allowed to remain for some time in a dark, but rather moist, place, when the image is brought up by dusting over finely powdered graphite with a soft brush. This "development" process is done by weak daylight or lamplight.

In this process under-exposure gives too hard results, over-exposure too flat.

#### Pinatype and Another Method.

Of other methods depending upon the property of bichromated gelatine the two following are of service in practice. The first is a modification of the well-known pinatype process. A glass plate is carefully cleaned and coated with  $\frac{1}{2}$  per cent. solution of potassium silicate, and whilst still moist with a warm solution of 2 per cent. gelatine (the hard collotype gelatine). It is dried and then sensitised in a cool 2 to 5 per cent. solution of potassium or ammonium bichromate. Sensitising, which is done by lamplight or weak daylight, should last about five minutes, and the plate should then be dried in a dark room or in a drying-box. Care should be taken that no drops of liquid remain on the film. The careful use of a pad of soft linen will remove them before drying. If they are left the negative will show patches of greater density. Exposure is done as usual in the printing frame, and its progress can be judged by the positive print to be seen at the back of the glass, of brownish colour on a yellow ground. This should be examined by the yellow light of the dark-room as, as soon as details are visible in the highest lights, the plate should be washed, also by yellow light, until the positive image has disappeared. The plate is then freed from bichromate in a 2 per cent. solution of potass metabisulphite, and then thoroughly washed.

It is now laid in a 1 per cent. solution of the pinatype "platinum black M" of Meister Lucius and Brüning, which penetrates the film only in the parts unexposed to light. A final rinse from the dye solution completes the process, in regard to which it should be understood that the coloured gelatine film is the more intense the less exposure is given. By modifying the sensitising bath the character of the negative can be altered. For flat and weak originals a weak bath, 1 to 2 per cent., should be used, whilst for stronger and harder negatives the strength of the bichromate should be 5 per cent. The time of exposure and choice among the various dyes suitable for the purpose also allows of the reproduced negative being modified in character. The negatives made in this way show very little grain, and are to be recommended for enlargements.

A similar method is that of Bigny. A gelatine dry plate of medium speed is bathed in a 2 to 5 per cent. bichromate solution, dried, printed, and washed in the manner just described. The bichromate is also removed with potass metabisulphite, and after a thorough washing the plate is treated, in diffused daylight, with a strong developer, such as ferrous oxalate, metol, glycin, or rodinal. The exposed gelatine is thus rendered insoluble according to the action of the light. The plate can be exposed for about a second to the daylight, but the glass side should be covered. It is then fully developed in the dark-room, and then washed, fixed in an acid bath, and again thoroughly washed. In this process also, modification, as described for the pinatype method, can be made in the reproduction.

The foregoing methods allow of the making of a duplicate negative only of the same size as the original, that is to say, in the printing frame, and the negative is also reversed as regards right and left. A method, which allows of the use of the camera, whereby enlargement or reduction can be carried out, and an

unreversed duplicate also obtained, has obviously many in practical work. The reversal method first given in article may be used, but is not recommended, as the exposure frequently altogether too long. The following chemical reversal methods are more practical. The first is that of M. Balagny in which the image is first developed, dissolved from the fixed plate with bichromate and acid, and the plate again developed.

A plate of "ordinary" sensitiveness is used, and is given exposure of about twice that which would be considered necessary for an ordinary exposure. It is then developed in—

A. Distilled water .....	1,000 ccs. ....	35 oz
Sodium sulphite .....	250 gms. ....	8½ c
Hydroquinone .....	20 „ ....	310 gr
B. Water .....	1,000 ccs. ....	35 oz
Sodium carbonate .....	250 gms. ....	8½ c

The developer is prepared from these two stock solutions taking A three parts, water three parts; B two parts, and a bromide solution 10 per cent. one part. When using newspaper instead of plates two parts of 90 per cent. alcohol should be added. The image appears slowly in this solution, and is allowed to act until the positive image, visible from the back of the plate, is quite black.

Too short development will lead to a flat and foggy negative. The plate is then carefully washed and laid, glass side down, on an ebonite dish or on other black surface. It is exposed then to twenty seconds to diffused daylight, whereupon the previously greenish high-lights become whitish-grey. In order to avoid fog at the edges the plate should be covered with opaque edging. It is afterwards placed by the dark-room operator in the following bath:—

Potass bichromate .....	6 gms. ....	93 grs.
Nitric acid .....	5 ccs. ....	85 minims.
Distilled water .....	250 ccs. ....	8½ oz.

In it the black image disappears. After thorough washing the plate is placed in the developer already used, and the negative image brought to full density. It may be well to give the negative five minutes in a 5 per cent. solution of chrome alum, afterwards washing. It is then fixed, and the hypo finally run in running water. Instead of the short exposure of the negative to daylight and the use of the bichromate in the dark-room, a bichromate solution of half-strength may be used in daylight. Thorough washing at the various stages is essential to success of this process.

#### Reversal by Persulphate.

Ammonium persulphate may also be used as a reversing agent. In this case also the exposure is made in the camera on to a dry plate of medium speed, which is then developed twice the usual time, thoroughly rinsed, and the alkali completely removed by adding one or two drops of sodium acid to the washing water. The positive plate is then, in a 10 per cent. ammonium persulphate solution, which covers the plate to the depth of half to three-quarters of an inch. The plate in this solution is allowed to remain for 10 to 20 minutes to diffused daylight until the image has completely disappeared when examined by transmitted light. The plate is then thoroughly rinsed, placed for one to two minutes in a 1 per cent. sodium sulphite solution, and redeveloped in any strong developer. It is finally given a short rinse, fixed, and then washed.

MAX F.

\* Reference may also be made to the formula for the Balagny method mentioned by Mr. C. R. M. Farr in "B.J.," November 8, 1907, page 846. The method also obtained the approval of M. Jos. Maes, "B.J.," March 216.



## REPLACING MOVED FIGURES IN GROUPS.

There is the professional photographer who has not been at all annoyed, after exposing a number of plates on a group of five or six figures, to find, when proofs are submitted, that they are rejected because one or more of the party have moved, or, possibly, one or two shown unsatisfactory expressions. This arises, notwithstanding that the most sensitive plates and the quickest-working lens have been employed. Either a re-sitting has to be given, or a customer will go away dissatisfied. If re-sittings are given, it not infrequently happens that the new pictures are no more satisfactory than those first taken. Now, if the faulty portraits could be removed from the general best picture and replaced by one from one of the others, the group would be considered satisfactory and a re-sitting avoided. It goes without saying that the only way this can be done is by double printing, an operation which is regarded by many present-day printers as being very difficult to carry out, but, in reality, a very simple matter.

In taking groups of children few photographers rely upon a single plate. A couple or more are usually exposed, and proofs are sent only the best submitted to the customer. In taking the negatives, the positions and lighting of the figures are not altered between the exposures, so that all the pictures are more or less alike except for possible movements. Even if the pictures are not exactly alike, it makes but little difference in the process of combination printing now to be described.

### A Simple Method of Masking.

We will suppose, by way of illustration, that in a group of persons, one of them, through movement, or bad expression, is to be replaced by another from one of the other negatives. The procedure is as follows:—One of the negatives, that in which the portrait offending is considered to be most satisfactory, is taken, and all the other figures blocked out with black ink. Or a print from the entire negative may be made on P.P., and this one figure neatly cut out. This, after the paper has been blackened by exposure to light, may be fixed as a mask on the negative with a few touches of indiarubber solution, which answers quite as well as black varnish, and has the advantage that the mask can at any time be removed. A print is then made from the masked negative. For convenience in printing, it should be on paper a little larger than the negative. The paper used should be either albumen or collodio-chloride, not gelatine P.O.P., for a reason to be presently given. The single figure will, of course, be on a piece of quite white paper. When printed the figure is painted neatly over with a matt black colour—gamboge is as good as any. This is a work which takes a minute or so, and requires no special skill. When the colour is dry the print is ready for the second printing. All that has to be done is simply to place the paper on the

generally approved negative, arranging the already printed figure so that it occupies its proper position in the group. There is no difficulty in doing this, as the gamboge being a transparent colour, it can easily be done by looking through the negative. The second printing is then done as usual. The toning and fixing is done in the ordinary way. In the washing out of the free nitrate of silver previous to toning, the gamboge is also washed away, and the toning afterwards proceeds just as well as if the print had not been subjected to any special treatment.

It was mentioned just now that only albumen or C.C. paper should be used for this work, and it may be as well to explain the reason. With either of these papers the colouring medium (gamboge) is not absorbed in the surface coating of the paper. In the case of a paper such as gelatine P.O.P., which is freely absorbent of water, the washing out of the free silver would not suffice to remove the colour, and a mark would show more or less in the finished picture. It will be seen that by this simple method of procedure double printing of this kind is a very simple affair, and can be successfully carried out by any one who may be quite a novice in this class of work.

### A Saver of Re-sittings.

With group pictures of the kind we are at present supposed to have in view, if it is seen that one member of the group has moved, it is good policy for the photographer to replace the moved figure by a still one from one of the other negatives before showing the proofs to the customer. In these circumstances the re-taking of the group, with the chances of movements in the new pictures, may usually be avoided. It will be recognised that by this simple system of double printing only one negative has to be masked; in other methods both have to be, and accurate registration in the two printings becomes very important. By the method just described this extreme accuracy in the two printings is not quite so imperative.

It is quite an easy affair, by the above method, to introduce an extra figure that was not present when the group was taken. This is done as follows:—The portrait to be introduced is photographed of a size to correspond with the others in the group, care, of course, being taken that the lighting and the density of the negative are similar to the others. The background of this negative, which may be on a smaller plate than that of the group, is blocked out. The figure is then printed—the other portions of the paper being protected from light—so that we get the figure only on quite white paper. The figure is then painted over, and the printing from the group negative done; the printed figure, of course, being placed on the negative in the position it is to occupy in the finished picture.

H. V. TODD.

J. JONATHAN FALLOWFIELD, dealer in "Taquta" cameras and photographic requisites, can hardly have repressed a smile when he read the following in a Harmsworth evening paper, quoting *Manchester Guardian*:—

"Variation on the ordinary street photographer—who, by the way, is to be dying out—was met with in Manchester the other day. He had on a tripod a small camera in the shape of a toy cannon, the barrel of which was pointed at the sitter, or rather stander. The process was automatic. Under the camera was a small tank containing the developer.

The photographer pressed a bulb—the exposure was instantaneous and then pulled a rod, which caused the plate to drop into the developing bath, from which it was drawn a few minutes later to produce a photograph, about the size and shape of a penny—price sixpence, or, in a brooch, sixpence.

"The positive" was produced directly in the camera without the intervention of a "negative." After being washed in water it was

ready for the customer, all but the drying. A photograph turned out a little after six in the evening in a town street—conditions under which snapshot photography with an ordinary camera and fast dry-plates would have been impossible—was cloudy in parts, but a quite complete and recognisable portrait.

Presumably the process was some form of the old "positive collodion" process, but this would hardly work with an instantaneous exposure, unless there have been improvements. The owner of the instrument declared that it was "from Chicago." (The Chicago Ferrotype Co.)

A SUICIDE.—On Saturday in last week a well-dressed man, apparently about thirty-five years of age, was found lying insensible on the grass in Hyde Park, with a bottle which had contained poison by his side. He died two hours later without having recovered consciousness. The man's clothing was found to contain cards bearing the name of A. H. Lloyd, photographer, Weymouth.

## THE PROFESSIONAL PHOTOGRAPHER AND THE REFLEX CAMERA.

[The advantages of a reflex camera, not only out of doors but in the studio, have been strongly emphasised in our columns of late particularly by Mr. Gordon Chase, now of Muswell Hill, by whom very effective use of a reflex has been made in portraiture. Still we may quote some recent notes by Mr. C. H. Claudy in "Wilson's Photographic Magazine," wherein commendation of this type of camera is given by a practical professional photographer.—Eds. "B.J."]

In case there are some whose attention has been so strictly confined to the gallery end of the business that they have no knowledge of a mirror camera, let it be said that a mirror camera is one which has a horizontal ground glass, and a mirror, set at an angle, which reflects the image formed by the lens to this horizontal ground glass. This ground glass is the same distance, optically, from the lens that the focal plane is. Over the ground glass is erected a hood, through which the operator looks. The mirror acts as an erector for the image, turning it right side up. The distances being the same to ground glass and focal plane, the image, as viewed through the hood, is the same size as the finished picture.

When a picture is to be taken, the operator focusses the lens by turning a convenient milled head, watching the full-size, right-side-up image on the ground glass, through the hood. When it is as he wants it, he presses a button. This button releases the inclined mirror, which flies out of the way, closing off the ground glass and making a light-tight joint. When it is seated, and not before, it releases the previously set focal-plane shutter. The "lag" in time between pressing the button and the release of the shutter is a very small fraction of a second—possibly a twenty-fifth, so the picture is made just as it is seen on the ground glass.

This, in effect, is the reflecting type of camera. On this side of the water the most prominent example is the Graflex. The advantages of a focal-plane shutter have already been discussed, so nothing further need be said on that head, except to remark that all that applies to a focal-plane shutter in any camera applies to it in a reflecting instrument.

### Tests of a Reflex Camera.

Now, it should not need much demonstration to see that for any subject which is in motion, or liable to move, an instrument which allows focussing to be done to within one twenty-fifth of a second of making the exposure puts a great power in the hands of the photographer. Two men making pictures of a dog. As fast as the one gets his tripod instrument set up, focussed, slide drawn, and is ready to press the bulb, our canine friend gets up and lies down three feet nearer the camera. Or he moves out of the line of vision—and in either case, re-focussing and the same with the "fo" left out becomes essential. The other man, with his hand camera, merely adjusts the focus while looking at the dog, and presses the button as soon as his dogship assumes the position desired. If the position is but momentary, it is long enough. I remember some experiences with sheep, than which no more nervous and un-stand-stillable animal exists, in which a Graflex produced picture after picture that set the owner frantic with delight, while a stand camera failed utterly in everything except frightening the timid animals out of what little sense they were provided with in the first place.

When it comes to photographing a jumping horse, the stand camera is all right if you know which five-barred gate he is going over, and can get exactly where you want and focus on the gate in the first place. But otherwise, if you are not absolutely certain that the horse is going to occupy a given position in the atmosphere at the time you want to make the picture, you are necessarily quite helpless without a reflecting camera.

And as for children! If you do child work in the studio, you have no need of any one to write an exposé of your troubles. But if you have tried children in natural surroundings with a stand camera, you may be glad to have some one voice the complaint every one makes of such pictures: If without motion, they are stiff and unnatural—the sitters knew they were being photographed; if natural in pose and expression, they are either out of position or show movement. With the reflecting camera indoors it is frequently possible to photograph the squirming baby, because of both

the ability to focus a squirm and get enough light on it—combination of mirror and focal-plane shutter. Outdoors you can do about with playing children and picture them, time after time, while they are unconscious of your work. The result is the kind of picture that sells.

### The Business Power of a Reflex.

Now, I would not pretend for a moment that just because you expend good money for a reflecting camera you are bound to be rich, or that you will have trouble dodging the dollars and finding time to write up your order-book. But if your town is like other towns, and if your customers are of the same kind as most people's customers, you will find that just as your equipment provides for varying and various kinds of work, so you will have various varying kinds of work to do.

You will not experience any particular difficulty in learning to manage a reflecting camera; but you will have to revise your estimate of outdoor timing, since focal-plane exposures are faster, for light, than other kinds of shutters. You will also have to learn to allow for the tiny fraction of a second of "lag" between pressing the button and the release of the shutter, but only in very fast movement. You will have to learn to allow speeds for various degrees of movement, at different distances from the camera and at different angles—a matter of small difficulty from tables provided for the purpose.

You will not have to learn the convenience of the instrument. Once you have used it you will want to take it straight to your studio and use it there; nor, if you have a fast lens and a good light, is there any reason why you cannot use it there. In fact, the use of the reflecting camera in the studio for baby and animal work is one of its great recommendations to the professional, since by its aid he can obtain pictures utterly impossible or at least, extremely difficult—with any camera in which a measurable interval of time must expire between focussing and the release of the shutter.

You will wonder, perhaps, at my saying that snapshots in the studio can be made with the reflecting camera held in your hand, but as it is not only feasible, but perfectly easy, to make such snapshots with such a camera in an ordinary light front room, there should be no difficulty whatever under the light.

Of course, you cannot screen down your light and get Rembrandt effects and expect to use a mirror camera at even its slowest speeds, and with the fastest lens and get fully timed negatives. But with an uncurtained light and a good lens, and a bright day, you can set the focal-plane at one-tenth to one-twenty-fifth of a second, see what you are doing on the ground glass, press the button when you think what pleases you, and be sure—particularly if you use the tail of a well-graded, fully timed, properly developed negative.

When you think of the ability this puts in your hands, the facility with which you can walk all around not only a baby, but a grown-up sitter, observing any change of expression and alteration of expression, with the ability to take what you see instant it appears and before it is gone in another change, you realise what the mirror camera does for you.

That it is not more used is nothing against the instrument, an argument against the ignorance of its possibilities which generally obtains among a large proportion of the profession.

Yes, they cost money. The makers don't give them away. A fine lens costs money. And the spending of it in a too expensive appliance of this kind, which can be made to pay dividends in many different ways, is one of the surest assurances that the maker you want to make is hiding around the corner, only waiting for an invitation to come forth.

C. H. CLAUDY



## CARBON PRINTING IN SMALL QUANTITIES.

[The following notes on the citric acid sensitiser for carbon tissue are addressed to the less practised worker of the process, but a word should be said at the same time in praise of a spirit sensitiser such as that made by the Autotype Company. The opportunities for failure in the process are immensely reduced by the employment of this latter—and expeditious—method.—Ems. "B.J."]

Two or three years ago Mr. H. W. Bennett suggested a modification of the bichromate sensitising bath for carbon tissue for home printing. A recent trial proves it to be excellent in practice, and a method which many photographers would find useful if adopted in their workrooms, even if they do not usually work the process. Bennett pointed out that the carbon tissue sensitised at home does not give such good results as that bought ready sensitised from the maker, and that the chief defect was in the lighter tones of the print, where the whites and the very delicate tones merged into one another, and the details, for instance, of a white dress were in a flat even tint; and he discovered that the addition of a few drops of citric acid to the bichromate solution, neutralised by afterwards adding liquid ammonia until the deep orange colour was changed to a yellow, produced the result he desired. The average professional photographer, no doubt, often wishes to print a few carbon prints for his window or a special order, and he finds he must either send the work away or buy a good many more pieces of sensitised tissue than he will need. Then his printers are probably acquainted with the process, and if he tries to do it in his own workroom a good deal of waste and inferior prints are the usual result.

### The Drying Cupboard.

If he will try Mr. Bennett's method he will be able to keep a stock of tissue of various colours and sensitise a few pieces as he needs them, and his assistants will become familiar with the working of the process and able to turn out an order at any time without waste and of good quality. He will, perhaps, hesitate to see he thinks that some elaborate drying cupboard is necessary, but a very simple contrivance will do the work quite well. It may be made easily from a large packing-case, a convenient size for occasional work would be about 4ft. or 3ft. 6in. high and 2ft. wide and about the same depth; it will be more convenient if rather tall and not too wide, as a long strip can be suspended from the top and bottom. It must have a well-fitting door, and plenty of holes at the top and bottom for ventilation; these must be arranged so that they admit very much light. If such a cupboard stands in a corner of the workroom it may have a row of holes, bored with a countersink-bit, along the bottom and top of the back, and of the sides which stands near the wall, but the cupboard must be placed a few inches from the wall to allow space for the air to enter at the bottom and escape at the top of the cupboard.

### The Citrate Sensitiser.

In a damp weather a small lighted spirit lamp should be placed inside the cupboard to dry the tissue, but it will be needed only a part of the time, so a small one holding about 3oz. of kerosene is a suitable size. In winter, if there is a fire in the room, no lamp will be necessary. The tissue should dry in not less than 24 hours and not more than six hours. If it is dried too quickly it will be sensitive, take a long time to print, and give chalky, hard prints; if it is dried too slowly it will give flat, foggy prints, and be quite useless by becoming insoluble. If the sensitising is done overnight and the room is warm, the tissue should be in condition next morning, and should at once be taken out of the cupboard and kept just as carefully from moisture as platinum in an airtight tin, with calcium chloride as a damp trap. It keeps in good condition for a week at least. The sensitising is best made up with potassium bichromate, obtained from the maker of the tissue, and should be dissolved in the proportion of 100 parts to 500 parts of water. When quite dissolved 100 parts of citric acid is dissolved in a few ounces of water, and finally sufficient liquid ammonia to change the orange colour of the solution to yellow. It is a good plan to make up a fair quantity of each, as it keeps well, and is then always ready for use, and can be used over and over again without deteriorating, whereas if only a small quantity is made up it will soon be used up. A few pieces of tissue can be sensitised in ten or fifteen minutes and hung up to the cupboard. The time of immersion varies with the kind

of negative used and the temperature of the air. In summer about two minutes for average negatives, and in winter or for strong negatives three minutes' immersion should be given. It is not easy to cut the tissue up into the sizes required from the band or roll, so it is best to cut off a piece about 7in. long from the roll with a fine saw, such as a dove-tail or tenon saw. This will then cut up into convenient lengths for whole plates and half-plates, allowing a small margin for defects at the edges. A piece about 30in. long will cut up for the two sizes, with but little waste, and is a convenient length to sensitise and dry. A deep whole-plate dish will be large enough for immersing the tissue. It should be filled with the sensitising solution to at least an inch in depth. The roll of tissue is then immersed in it and unrolled slowly with one hand and re-rolled with the other, so that the whole of the back and front are completely covered with solution. It is re-rolled backwards and forwards from one hand to the other (carefully removing air-bells) for the necessary time, and then laid on a sheet of clean glass or zinc face downwards, and a flat, not a roller, squeegee drawn briskly over it to remove surplus solution. It is then lifted from the glass and pinned up in the drying cupboard, with strong pins at the two top corners. It would be as well if the cupboard were lined with blotting-paper. The squeegeeing of the tissue is most important, as it ensures even sensitising. In hot weather the tissue will become very soft and slimy, and should be handled with care, and the solution kept as cold as possible. A small lump of ice may be put into the dish; or if, as will frequently be the case, ice is unobtainable, the bottle containing the solution should be wrapped up in a towel and placed under a dribble of water from a tap overnight, and, if possible, in a good current of air. The evaporation of water from the towel produces a considerable reduction of temperature, and the sensitising may be done first thing in the morning and the tissue will then be ready for use at mid-day.

All this will, perhaps, appear to be a great deal of trouble and possibly expense. The expense at least is very small, and the trouble not nearly as much as the long description would seem to indicate. A sharp boy, who will take reasonable care, could be taught in a few lessons to do all the work of sensitising and drying.

### Printing Preparations.

The speed of the tissue is a little slower than the same brand sensitised by the maker, but an easy method of arriving at the proper time of printing is to put the negatives out, with the actinometer by the side of them, but instead of making a trial of a piece of tissue a strip of ordinary P.O.P. is placed in each frame and exposed until the depth of the print is a little too dark for an untimed proof, but not dark enough for toning. If the negative requires printing up in some parts or shading in others, it should be done when making the trial silver print, and the negative can be marked with the numbers of the tints required for the various parts. This may be done some days before, so that when a day is chosen for printing the carbons the necessary exposures are known and all the negatives are ready for printing. It is a good plan to cut up a good number of strips of paper for the actinometer from one sheet and keep them in a small tin box, as different sheets of paper print out to different colours, which confuses an inexperienced printer in matching the tint of the actinometer. All negatives except those to be vignetted should have an opaque edging for the safe edge, and much trouble can be saved by setting apart a few printing frames for carbon work and using a front glass with the safe edge upon it, made with strips of lantern binding or with black varnish. If black varnish is used a very handy little tool for applying it can be made by "lashing" a wooden match or similar slip of wood to an old spotting brush with a piece of twine, so that the slip of wood projects half an inch or so beyond the fibres of the brush, which is charged with black varnish and drawn along the edges of the negative, the piece of wood acting as a gauge or guide as it runs along the glass edge. A neat black edging can be given very quickly in this way.

If a few portraits for the show-case are to be printed it is of no

great importance if they are reversed, so that they may be printed by single transfer and thus save some trouble and risk of failure. If thick, rough single transfer paper is used it is best to soak it for by single transfer and thus save trouble and risk of failure. Then the exposed tissue is laid down upon it and with considerable pressure squeezed to force the face of the print into perfect contact with the uneven surface of the paper; and it should be allowed to remain between sheets of blotting-paper under pressure for twice as long as would be needed for smooth transfer paper. This will greatly reduce the liability to blister.

#### Patchy Prints.

The carbon printer of little experience will be sometimes troubled with insoluble patches in his prints which refuse to develop and cause dark marks, thus spoiling the prints. These may generally be traced to two causes. The small marks, usually round spots, are caused by the careless use of alum. A grain of undissolved alum has become attached to the printed tissue in the process of laying it down upon the transfer paper or temporary support, and has rendered the gelatine insoluble in the hot water of the developing bath. Larger patches of irregular shape are caused by squeezing the tissue after sensitising on glass or zinc which has not been washed after the last time it was used. Sensitising solution has been left on the surface, it has dried, and when the pieces of new tissue are laid upon it small particles of bichromate have adhered to the wet surface of the gelatine and produced insolubility.

Most of the information given above is well known to the experienced carbon printer, but this article is intended for the photographer who has little knowledge of the process, to encourage him to take up this most beautiful and permanent printing medium.

COUNTRY PRO.

## Photo-Mechanical Notes.

### Mechanical Etching of Engraved Plates.

A METHOD of mechanical etching, in the course of which the strength of the etching bath can be raised or lowered, has been worked out by Emmanuel Spitzer, of 19, Gabelsberger Strasse, Munich, to whom an English patent, No. 21,026, 1907, has been granted.

The invention consists in adding to an etching bath of a certain degree of concentration, an etching fluid of a higher or lower degree of concentration respectively, and at the same time creating a mechanical movement of the etching fluid, both operations taking place in such a manner as to be subject to the control of the operator so as to enable him to regulate them according to the effects which he desires to produce. These effects are an exact reproduction of the blending of all the shades contained in the original combined with a great depth of etching.

If, instead of an etching fluid of a lower degree of concentration, water is introduced into the etching bath containing, for instance, perchloride of iron, the effect is still better, the admixture of water to perchloride of iron, as is well known, causing the temperature of the etching fluid to rise. This progressive rise of the temperature tends to assist the activity and exactness of the etching process.

The following are descriptions of two out of the many ways in which this invention may be carried out:

The plate to be etched is introduced into a basin filled with an etching fluid, for instance, perchloride of iron of 42 deg. Beaumé. During the etching process a quantity of perchloride of iron, of, say, 38 deg. Beaumé is introduced more or less rapidly into the etching bath, this introduction being either continuous or intermittent. The mixture of the new acid with that contained in the etching bath causes the degree of concentration of the etching agent to be gradually lowered.

If the etching bath is provided with an arrangement so that it has an outflow of acid corresponding to the influx of new acid immediately or after a certain time in which the basin becomes full, and thereby creates a current over the plate to be etched, the strength of which is easily regulated, a stronger and deeper etching action will be the result.

An apparatus corresponding to this arrangement, also given as an example, is illustrated in the figures 1 and 2.

The dish *a*, which has at *b* a lower rim, contains the heating or

cooling coil *c, c, c*; further it contains the pipe *d* which is provided with fine holes and which produces an influx of acid, the latter being evenly divided on the right side of the basin, and also the blow (shown cross-hatched in fig. 1) on which the plate *f* to be etched is placed. *J* is the receptacle for the etching fluid and has an indicator for ascertaining the quantity of fluid contained therein. The velocity of the influx is regulated by a tap *h*. The outflow is evenly distributed over the left side, the consequence being an even flow or current of the acid over the plate *f*.

In order to obtain the gradation of shading in even a more precise manner than is possible by artificial heating combined with addition of perchloride of iron of different degrees of concentration,

Fig. 1.

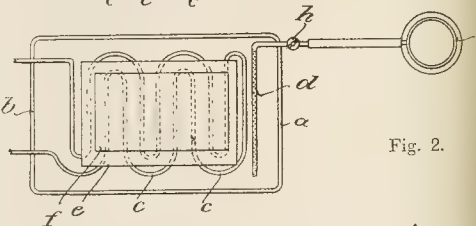
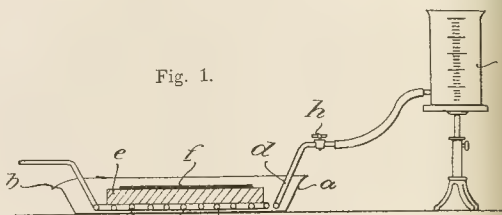


Fig. 2.

to the etching bath, and at the same time to produce a still greater depth of the etching action, the following proceeding may in practice, be recommended:—

The plate to be etched is placed into a certain measured quantity of perchloride of iron of a certain degree of concentration and to a quantity of water, which is also carefully measured, is added, so produce, for instance, a gradual lowering of the degree of concentration of the contents of the etching bath from 42 deg. Beaumé to 32 deg. By the addition of water, instead of perchloride of iron, and its thorough mixing with the perchloride of iron, a rise of temperature is obtained in the etching bath by chemical reaction, sufficient to make artificial heating superfluous.

In order to obtain a rapid and even mixture of the water with perchloride of iron and thus to avoid any unevenness of the etching, the etching bath has to be moved or stirred mechanically. The movement may be continuous or intermittent; in the former case the etching will be deeper than in the latter in consequence of the greater reaction. The addition of water may also be regulated so as to be continuous or intermittent.

### Photo-Mechanical Colour Printing.

In making negative transfers from colour printing jobs the following improvements have been made and patented by Rudolph Schö 13, Jerusalem Strasse, Berlin. (English patent, No. 13,020, 1907.)

For multiple colour printing it is essential that the various forms shall have surfaces of equal size, as otherwise inaccuracies in which the colours overlap would ensue. With the pigment paper it frequently happens that this condition is not fulfilled as the paper becomes distorted in the water or chromate bath that the printing surfaces of the various plates often differ in several millimetres.

According to the present invention the paper is stretched on both sides before and after being sensitised in such a way that it remains practically unchanged during the remaining treatment and is liable of any further noticeable expansion or contraction.

This expansion or stretching of the paper may be accomplished by softening it for several days in clear water free from air bubbles after it is completely saturated squeezing it on to a smooth surface such as a sheet of plate glass as is done in obtaining enamelled surfaces for photographic gelatine papers, whereby the edges may be secured.



the plate by any kind of adhesive. After drying this process may be repeated. The pigment paper when completely dry can be easily moved from the sheet or plate glass, especially if it has been previously coated with talc, wax, collodion, etc.

The sheets of pigment paper so treated are then sensitized in a romate bath and once more squeegeed on to a sheet of plate glass & dried thereon. The paper is then practically protected against y change in size during further treatment.

The stretching of the paper may be accomplished in another way, ., by rolling upon a glazing machine or by hanging it up and ighting it on one side, but the squeegeeing method seems the most venient at the present time.

PHOTO-MECHANICAL PATENTS.

The following patents have been applied for :—

COPYING.—No. 6,275. Improvements in processes for making photographic copies of printed documents, manuscripts, drawings, & the like. Carl von Arnhard, 6, Lord Street, Liverpool.

PROCESS PLATES.—No. 6,276. Improvements connected with the production of process plates. Alfred Charles Hounslow, 18, Southampton Buildings London.

Patent News.

Process patents—applications and specifications—are treated in *Photo Mechanical Notes.*

The following applications for patents have been received between me 15 to June 20 :—

FLEX CAMERAS.—No. 12,925. Improvements in reflex photographic cameras. The Thornton-Pickard Manufacturing Company, Ltd., Arthur Gray Pickard, and Frank Slinger, 6, Bank Street, Manchester.

INEMATOGRAPHS.—No. 13,027. Improvements in obturators for cinematographic apparatus. Arcade Mallet, Birkbeck Bank Chambers, Holborn, London.

RR SLIDES.—No. 13,076. Improvements in photographic dark lides. Harry Bernard Price, 25, St. Aldate Street, Gloucester.

INOGRAPHS.—No. 13,128. Method of, and means for, taking photographs of landscapes. Julius Neubronner, 53, Chancery Lane, London.

UMINATED BODIES.—No. 13,169. Improved means for the convenient observation and photography of highly illuminated bodies. Oswald Hardey Evans, 102, Sandmere Road, Clapham, London.

COMPLETE SPECIFICATIONS ACCEPTED.

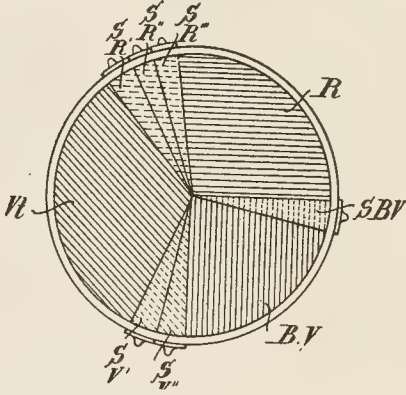
ese specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

LOUR PHOTOGRAPHY.—No. 4,745. 1908. The invention relates to an adjustable compensating filter for screen-plate colour photography, already described in Eng. Pat. No. 4,932, 1907 ("B.J.," March 27, 1908, p. 243). Since there are unavoidable differences in the sensitiveness of the emulsion and also in the nature of the light, these differences are taken into consideration, according to the present invention, by arranging in the plane of the lens shutter opaque sectors, such as are indicated by S R<sup>1</sup>, S R<sup>2</sup>, S R<sup>3</sup>—S V B and S V<sup>1</sup>—S V<sup>2</sup> in the drawing, with the object of covering the transparent sectors R—Vt and B V of the screen E (Fig. 14 of the main application) in such a manner that the simultaneous photographing of the three colours will give a correct result. These opaque sectors may, for example, be spread out or be folded in the manner of a fan by means of a suitable device. They may also be composed of lamellæ, independent of one another, capable of sliding in slots in the lens mount.

Instead of a three-coloured screen, that is to say, of a screen built up of strips, mosaics, sectors, tinted with the pure colours, there may also be employed a screen of a single colour in outward appearance, having the property of transmitting only the three parts of the spectrum that correspond to the pure colours referred to in the description of Fig. 6 of the main application.

Screens of this kind may be made by cementing two gelatinised

glass plates or discs together by means of Canada balsam, of which one has a colour that will absorb the rays lying between the red band and the green band of the spectrum, whilst the other has a colour that absorbs the rays lying between the green band and the blue-violet band.



These screens are, however, more difficult to make than the three-colour screens of the main application, and generally they render necessary the co-use of compensating screens for the purpose of enabling all three colours to be photographed at one and the same time. Charles Louis Adrien Brasseur, 121, Potsdamerstrasse, Berlin; and 10, East Fifteenth Street, New York.

CINEMATOGRAPH PORTRAITS.—No. 13,407. 1907. The invention, which has already been described in the "B.J." for April 24, 1908, p. 330, consists in the cinematographic apparatus for exhibiting intermittently moving animated pictures, in which the pictures are arranged in rows side by side upon a sheet of paper in such a manner that, on coiling the picture sheet to the shape of a hollow cylinder and on laterally displacing the marginal edges closing the cylinder, to the extent of the width of one of the picture rows, a succession of all picture rows in a helical line is attained. The picture sheets are preferably produced in the form of postal cards, so as to be suitable for exhibition in a standard size of cinematographic apparatus. Hans Voss and Hermann Simon, 186, Wandsbeker Chaussee, Hamburg.

DRYING BOXES.—No. 14,505. 1907. The claim is for a drying box or cupboard, having the following features :—

- (1) Vertically sliding, balanced door, and elongated handle.
  - (2) Gas jets at the base, with inspection and lighting flaps.
  - (3) Inter-changeable racks, on which short or long prints may be suspended without creasing.
- B. J. Hall and Co., Ltd., 39, Victoria Street, London, S.W.; and Benjamin James Hall.

The following complete specification, etc., is open to public inspection before acceptance under the Patents Act, 1901 :—

DARK-ROOM LAMP.—No. 12,649. Photographic dark-room lamp for variously coloured light. Mützel.

Analecta.

Extracts from our English weekly and monthly contemporaries.

Daylight Printing of Gaslight Papers.

With regard to the actual exposures for different grades of negatives (writes Mr. G. E. C. Morris in "The Photographic Monthly" for July) I give the following, from my own experiments, as approximately correct for Wellington S.C.P. I have not tried other makers as yet :—

	Distance from window.	Maximum exposure.
Dense negatives .....	4 ft. ....	6 secs.
Medium negatives (average) ..	4 ft. ....	4 secs.
Soft negatives .....	4 ft. ....	2 secs.

This is assuming the ordinary daylight is used from 10 o'clock in

the morning till 3 o'clock in the afternoon, without direct sunlight, or, in fact, without the sun shining at all. Daylight, of course, is a variable quantity, and no doubt at the outset over-exposure will have to be contended with. It is as well also to bear in mind that the distance one can work from the opening varies according to the size of the sliding window frame. My own window has an aperture measuring 2ft. 6in. by 1ft. 6in. This admits a good quantity of light, but, for all that, I often find it necessary to print at closer quarters on very dull days or towards evening, sometimes as near as a foot from the window. But it is not advisable to print at closer quarters than 4ft. until a little experience has been gained. The opening of the slide should always be at least twice as large as the printing frame, or there is the danger of unequal illumination. The measurements given above (viz., 2ft. 6in. by 1ft. 6in.) will be found to be a very good all-round size.

### The Camera in the Mountains.

THE difficulty (complained of by so many beginners) that mountains will look so small when reproduced (writes Mr. Will A. Cadby in "The Amateur Photographer and Photographic News" for June 30) can be got over by the use of a lens of longer focus than that they have been using, but this, of course, necessitates a camera with a long bellows extension. The Adon telephoto, used alone, is a most satisfactory instrument for this purpose, as with it we can have our view just what size we please, added to which advantage it is a light and small lens to carry. The convenience in the mountains of being able to alter the size of the picture is hardly realised by those who are used only to photographing on the level, for if we leave our coign of vantage, from which our picture appears at its best, we may have to descend out of sight of our object altogether, and when we have climbed a nearer slope to get our view on a larger scale, we may, probably shall, find our picture entirely altered. But another way of getting a rise out of the mountains, so to speak, is, if possible, to raise oneself and the camera on to higher ground. Often a hundred feet or even less will make all the difference to our picture, for this arrangement lowers the foreground and raises the distance, which is exactly what we want, and, what is more, gives us glimpses of the intervening country. Now these glimpses are most valuable, for they help materially to suggest what a long way off the mountains on the horizon are. Seen from a lower standpoint they appear as diminutive peaks immediately behind the nearer ranges, their lighter tone seldom being pronounced enough to alone suggest the great expanse of valley that in reality separates them from the foreground. But the tone value of each succeeding ridge of hills must be carefully observed and preserved in our negative, for, after all, it is the rendering of that faithfully that suggests the distance.

### Photography at the Franco-British Exhibition.

With reference to your notice *re* photographing at the Franco-British Exhibition (writes Mr. A. E. Dunn in "Photography and Focus" for June 30), I found that permission could be fairly easily obtained by writing a few days before you intend visiting, and then, on your arrival at the exhibition, to leave your camera in the cloak-room, as you have no permit, and then make straight for the administration office, which is situated near the Wood Lane entrance. Arriving there, you will be directed, after stating your requirements, to the press office in the same building, where, on stating that you have already written asking for a permit, and on writing a declaration that you will not photograph in any of the buildings or publish any of the photographs, a permit will be granted. You will find that it is rather a nuisance to attempt to do much work there, as every official is authorised to ask you to produce your permit whenever he sees you using a camera, owing to the entire rights for photographing, except under the above conditions, being reserved to one firm only.

FREDERICK BOEHM, LIMITED, is to be the name of the limited company (capital £60,000) formed from the business which Mr. Frederick Boehm has carried on for exactly twenty years. Mr Boehm's managers, Mr. Kunzen and Mr. F. Schaer, who have long been connected with the business, will join the board as directors, but the conduct of the business will not be affected in any way, and the firm will continue as hitherto to act as agent for Merck and other makers of fine chemicals, photographic and otherwise.

## New Books.

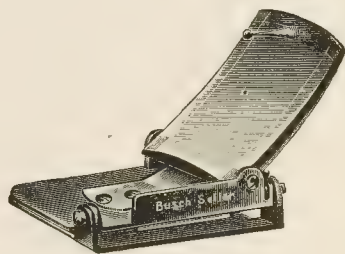
"The Photographic Annual, 1908" (Incorporating the Figures, Facts, and Formulae of Photography). Edited by H. Snowden Ward. London: Dawbarn and Ward. 1s.

As a most useful compilation of the working solutions of which the photographer has to make use, "Figures, Facts," has established itself. In giving it a form which presumably implies annual appearance, the publishers have greatly extended the subjects submitted to its "skeletonising" method, while the sections contained in the previous editions are more fully treated. For instance, the formulae and prescriptions for the use of process workers—photo-engravers, collotype platemakers, lithographers, and three-colour workers—are the subject of important sections. Ozotype, ozobrome, bil, and bromoil are also subjected to the condensed treatment which conveys the essential facts of a process in few words. The whole revision has evidently been done with much care and so recently as to include the later formulae for the Autochrome process, for example. Mr. Snowden Ward has relied on the very clear arrangement of the volume, and has replaced the index to the many items by a glossary in which are "facts, figures," not easily classifiable in other sections. The "glossary" shows a tendency to become unduly miscellaneous in character, as when it turns from first aid to the injured (including what to do when you are alone except to a cinder in one eye) to furniture cream and salts of wormwood. In this section, it is true, a large number of useful chemical facts are contained, and some useful translations of German technical terms, but our own belief still is that much of the matter can be classified, and that an index would still provide a needed key to the many practical hints on every page of the volume. However, we must refrain from saying more on this point, seeing that Editor Ward is adamant as to a reversion to the previous arrangement. Typographic and other errors appear to have been eliminated to a high degree of completeness from the "Annual," which altogether is an excellent expansion of a most useful compilation.

## New Apparatus, &c.

The Busch "Sellar" Combined View Finder and Level. Sold by Emil Busch Optical Co., Charles Street, Hatton Garden, London, E.C. Sole wholesale agents: Houghtons Limited, 88-89, High Holborn, London, W.C.

Some time ago we published the translation of the article by He K. Martin, in which the principle of this new instrument is described. We need not therefore repeat, except to say that the finder consists simply of a two-curved metal mirror, and is thus quite distinct from all the other forms of finders on the market. In the commercial form now available this mirror is hinged to a metal base, which in turn

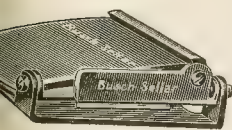


Model A.

is hinged to a similar base, the one pair of hinges being at right angles to the other. This device allows of the finder being quickly changed over when using a magazine or other box camera first for, say, "landscape" pictures, the next for "uprights." This is the case in the two models of the finder which are made—one is practically any camera, and the other for folding hand-cameras—



it to which things can be easily so arranged that the base of the camera will automatically close (and enclose) the finder. In the case of both patterns the view is seen by looking straight on the finder, and it is seen the right way up and unreversed. The camera is level at the same time that the view is being



Model A (Closed).



Model B.

and this, without the operator having to make an effort (quite futile) to do two things at once. In the case of the Sellar, "finding" and "focusing" are one and the same operation, and this one should recommend this new finder. Its small size, clear view, and moderate price are other points in its favour.

"Sellar" is made in three sizes (Nos. 1, 2, and 3) intended for the following:—

For lenses of focus	3½ in. to 4 in.	On plate 3¼ in. by 2¼ in. or 3½ in. „ 2½ in.
5 in. to 6 in.	„	4½ in. „ 3½ in.
6½ in. to 7 in.	„	5 in. „ 4 in.
7½ in. to 8½ in.	„	6½ in. „ 4½ in.
7 inches	„	3½ in. „ 2½ in.
9 inches	„	4½ in. „ 3½ in.
10 inches	„	5 in. „ 4 in.
14 inches	„	6½ in. „ 4½ in.

No. 3 is made specially for the Busch "Bis-Telar" and for the combinations of lenses used alone. The price of the finder of No. 1 is 6s.

## New Materials, &c.

"Type" Oil Printing Papers. Made by the Autotype Co., 74, Abchurch Lane, London, W.C.

The Autotype Company have introduced special gelatinized paper printing in two varieties—white (No. 1) and toned (No. 2)—might be expected, both papers seem admirably suited to the work. The papers are slightly rough—that is, of about the texture of "rough" in the case of bromide papers—and the tint of No. 2 paper is a faint brownish cream, admirably suited to the work. Hitherto the great difficulty that oil printers had to surmount has been the finding of a paper coated with a film that would stand a considerable amount of hard usage. Various papers, transfer papers, and various special papers have been tried, but in most cases it has been found that after a small amount of brush work the gelatine begins to show small cracks.

This effect is soon followed by the stripping of the gelatine and the consequent destruction of the picture that was on the paper. The gelatine that will stand plenty of work is most essential, and we have tested these new Autotype papers very carefully with regard to this particular quality. So far we have not found anything disturbing the gelatine in the slightest degree, though tried vigorous "dabbing," violent "hopping," and most of the "brushing" for considerable periods. In fact, the paper is an ideal one for the purpose, and we can recommend it without any hesitation. It is sold in packets containing one dozen sizes varying from 5½ x 4½ to 15½ x 12½ at prices ranging from 5s. per packet. The most useful sizes, 9 x 7 and 12½ x 9, are 6d. and 3s. 6d. per packet, respectively. Oil printers have no cause to grumble at the materials at their disposal. There is no need to trouble with home-made papers and pigments, and the want of good brushes is no longer a valid excuse for a trip to the brush-maker. All the materials required, and of the very best quality,

are now available in London, since the final want, that of a good paper, has now been supplied by the Autotype Company. The question of whether "oil" is a photographic process is being discussed pretty freely at present, but whether photographic or not, it is evident that it is a process that has come to stay, and its importance is amply proved by the efforts of various manufacturers to supply the material required.

The "Easy" Retouching Medium. Made by Geo. R. Henderson, 162, Ellison Street, Hebburn-on-Tyne.

This sample of negative retouching medium, put on the market by Mr. Henderson, is evidently one of the many mediums of which turpentine is the vehicle and, should thinning at any time become necessary, turpentine must be used for the purpose. Gradual evaporation of the solvents sometimes necessitates thinning, and, of course, some retouchers prefer to employ a thinner medium, being able to get their effect with less application of lead, and consequently without the need for excessive tooth. The medium may be applied to a small portion of the negative by touching the tip of the finger on the cork of the bottle after inverting the same, and rubbing on the negative with a circular movement until it commences to feel tacky. Or where the whole of the negative is to be covered—the medium then acting to some extent as a protective varnish—a piece of soft cloth may be placed over the finger and held to the bottle neck while the bottle is tipped up, sufficient medium being thus obtained on the cloth to cover a half-plate negative. The tooth formed as soon as the medium is tacky is a pleasant one to work on, either with a pencil as hard as HH or as soft as BB. It is quite easy to pile on more lead than is ever wanted, except under quite extraordinary circumstances. One point especially appealed to us when working with the medium, and that is the absence of any tendency to brittleness. Some mediums dry very hard, and when a hard pencil is used the coating is so friable that scratchiness of effect is obtained. We have had a good deal of satisfaction in testing the medium, and that pleasure which arises from working with materials which are perfectly adapted to the requirements.

"Rajar" Collodio-Chloride P.O.P. Made by Rajar, Ltd., Moberley, Cheshire.

A sample of the collodion paper which Messrs. Rajar, Ltd., have now added to their list of manufactures has been used by us with very satisfactory results in both the matt and glossy varieties. The paper tones readily in both the sulphocyanide bath—which is that specially recommended for the glossy variety—and in the acetate bath, which is used as a preliminary bath to platinum for black tones on the matt paper. The latter method is the most advantageous mode of treatment of collodion paper, and the "Rajar" product responds to it in an excellent manner. The paper does not give trouble by curling in the baths, and its film is free from any abnormal tendency to crack and split after the prints are finished. Treated as C.C. paper requires, the new product is evidently capable of exceedingly good work.

### CATALOGUES AND TRADE NOTICES.

SECOND-HAND APPARATUS.—In their July list of second-hand photographic apparatus the City Sale and Exchange, of 54, Lime Street, E.C., advertise a number of bargains in cameras and lenses, including practically all the varieties at present on the market. The firm also draws attention to the fact that they specialise with the exchange of apparatus in either part or whole payment for any other goods that may be selected.

A "SIBYL" BOOKLET, newly issued by Newman and Guardia, 90 and 92, Shaftesbury Avenue, W., describes in detail this highly serviceable pocket camera, the practical efficiency of which deserves all the emphasis given it in the booklet.

RECENT WILLS.—James Wilkinson, Alma Road, Birkdale, Southport, and Manchester, retired shuttle maker and photographic appliance manufacturer, £11,006.

William Anderson, sometime photographer, 364, Hamilton Place, Partick, and latterly residing at 12, Broomhill Avenue, Partick, £6,966 10s.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

#### SATURDAY, JULY 4.

Rugby Photographic Society. Excursion to Birdingbury. A. W. Fell.  
 Balham Camera Club. Outing to Hampton Court.  
 South Suburban Photographic Society. Excursion to Rochester. F. N. Palmer.

#### SUNDAY, JULY 5.

United Stereoscopic Society. Outing to Dorking and District.

#### MONDAY, JULY 6.

South London Photographic Society. Annual Jumble Sale.

#### WEDNESDAY, JULY 8.

Manchester Amateur Photographic Society. Excursion to Church Stretton.

LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.—At the annual general meeting, held on Thursday in last week, the report, presented by the hon. secretary and treasurer, Mr. E. R. Human, made reference to the lamented decease of Mr. A. L. Henderson, and to the award of the Henderson Medal to Dr. C. E. K. Mees.

Upon the motion of the chairman, Mr. T. E. Freshwater, seconded by Mr. R. Beckett, the report and balance-sheet were adopted.

The following were elected as officers for the coming year:—Trustees, T. E. Freshwater and A. Haddon; committee—Messrs. J. S. Teape, H. C. Rapson, R. Beckett, A. E. Smith, J. Burgess, W. R. Stretton, Charles Greenwood, O. S. Dawson; hon. lanternist, E. T. Wright; hon. librarian, W. J. Ferry; hon. secretary, treasurer, and recorder, Ernest Human; affiliation delegates, H. C. Rapson and Ernest Human.

A vote of thanks to the hon. secretary and treasurer was proposed by Mr. Beckett, who said that during the twenty years he had been a member he had never known a secretary who had done his work better. This was seconded by Mr. Teape, who fully endorsed all that the proposer had said. Mr. Human's reply concluded the meeting.

## Commercial & Legal Intelligence.

LEGAL NOTICES.—A first and final dividend of 2s. 9½d. in the £ is to be paid in the bankrupt estate of Percy John Swain, photographer, of 2a, Davey Place, Norwich, formerly carrying on business in partnership with Louis Smith as Louis Smith and Co.

Charles George Sinclair, photographer, of 264, Victoria Street, Great Grimsby, has been granted an immediate discharge in bankruptcy, subject to payment of a dividend of 10s. in the £1.

A receiving order in bankruptcy has been made against Walter George Lewis, photographer, 1, Seymour Street, Bath, on a creditor's petition.

HIS HAT IN THE PHOTOGRAPH.—The case of Dickinson v. Earle was resumed by Judge Woodfall at Westminster last week. It was a claim for five guineas for a print. The case for the plaintiff was that defendant, Captain Earle, gave an order that he should be included in a picture of last year's Eton v. Harrow cricket match at Lord's, and he was to be next to Lord Euston in the picture. The order covered a print of the picture, for which five guineas was to be paid. Captain Earle duly appeared in the picture, and then said his financial position had altered, and he did not want the print. Next some point was raised that he appeared bare-headed, and should have had a top hat on.

Captain Earle gave evidence that he sat for his photograph, and chose from the proofs the one in which he appeared in a top hat. In the picture he appeared without a hat. Directly he saw the picture he pointed out the mistake, and said it must be altered, or he would not have it, "because I haven't much hair."

His Honour found for the plaintiff, with costs, holding that the defendant had not proved the alleged stipulation that he should wear a hat in the engraving.

## Correspondence.

\*.\* Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

\*.\* We do not undertake responsibility for the opinions expressed by our correspondents.

### WRITTEN TESTIMONIALS.

#### To the Editors.

Gentlemen,—In reply to your correspondent, "Marcus" evidently has not given both sides of the question. I will furnish you with the missing part of the story. "Marcus" says that about eight months ago he dismissed an assistant; but the latter was never missed at all, but left on mutual terms because he desired not to accept less wages in the winter months. "Marcus" also says an assistant asked to come back. This, however, is not the case. "Marcus," in conversation with the assistant, offered him the vacancy told him that he would rather have him than anyone else, as he was leaving his business for a holiday. To oblige "Marcus" the assistant gave up a permanent position on the understanding that his employment should hold good until Christmas. On his return his employer gave the assistant notice to leave through a technical part of business only. True, this assistant did set up business opposite it was months, not weeks, before he exhibited "Marcus's" reference. Why did he do this? Because "Marcus's" business front placarded with the following, in large type:—"No connection [here using the assistant's initials] opposite." "Beware of the door photographers." "We lead, others follow." "We competition." "Postcards at 2s. 6d. per dozen." Not satisfied with this, "Marcus" advertised continuously in a local paper cautioning the public not to purchase postcards or photographs of any description from any but well-known reputable photographers, as they fade and become useless soon afterwards. He also suggested that others were using "Genuine" rubbish, while his were only "best English materials." Not a lot of this kind of advertisements had been used did the assistant put the testimonial complained of in his show-case. And when "Marcus" do when he first heard of it? He challenged the assistant by a placard in his window (using his name) to inform the public that he was dismissed at a minute's notice (which, by the way, was untrue without any fear of contradiction). Why doesn't "Marcus" sue the assistant under false pretences for using the testimonial especially after being advised to do so by his solicitor? He also told the assistant using a phrase such as "work equal to any as by your own townsmen." This is also absolutely incorrect. The expression used was: "Beware of spurious advertisements in circulation. Read this testimonial and form your own conclusions whether I am a practical man or not." Now I will ask my personal readers to look at both sides of the story and judge for themselves as to whether the assistant's action was justifiable or not in a town where originally there was but one photographic studio.

[Our correspondent's relation to the writer of the letter appeared in last week's "Journal" is quite obvious from the recital. It is contrary to our rules to allow the correspondence columns of the "Journal" to be used to air private grievances for that reason we suppressed the identity of the writer of last letter, whom we called "Marcus." Our present correspondent us permission to publish name and address, but it is better the scene of the lively amenities of photographic competition remain unnamed.—Eds., B.J.]

### SCULPTURE OR PHOTOGRAPHY.

#### To the Editors.

Gentlemen,—I notice in the current number of your journal in which the writer, Mr. F. C. Tilney, talking sagely about art and moral rights, absolutely identifies my picture now in exhibition of oil prints at the offices of the "A.P. and P.N." statue by the late Onslow Ford, which I admit and regret I had heard of till now. True, some time ago I happened to see a reproduction of a statue, torn from some magazine I think, which I never knew nothing about except that it particularly pleased me much so that I set about endeavouring to produce a similar p



graphy. My results did not satisfy me and it was put on one. Later I took it up again, and, with the reproduction before me, I painted on my print in body colour, altering and correcting it as I was able, more as an exercise than anything else. Subsequently a copy was made in the camera, and thence the oil print.

The above reasons it is not a picture that I should exhibit in any ordinary way, but do so now in an "oil" exhibition, as it, in my opinion, shows to a peculiar degree the especial characteristics of the process, according to my idea of what it is and should be.

Tilney, in stating that solely by the "control" of the pig-brush, one can photograph a statue and give it the appearance of life, pays a high, but, I think, undeserved tribute to the possibilities of the process.

Nowhere in the same number is a critique, if such it may be, and amongst various disparaging remarks on the exhibition, the writer says:—"Imitation is the sincerest form of flattery." I ask of what is this exhibition in imitation; is not this the first time that a collection of prints of various workers has been got together in London, thanks to the enterprise of the artist and P.N.? Certainly I have never yet seen in a private gallery a show of photographs so tastefully got up and artistically arranged, and withal a collection of such good work as that now at the gallery of Mr. Acree.—Yours truly,  
BERTRAM PARK.  
Fellows Road, Hampstead, N.W.

Whatever bad things we have said of the oil process, and how Mr. Park thinks we are its natural enemies, we have never that it justified the exhibition of a print which was a plagiarism on the work of art. Nor apparently is Mr. Park with us in our hopes that the oil process will advance pictorial work in the direction of graphic qualities. Why should he be? he starts with some non-photographic.—Eds. "B.J."]

## Answers to Correspondents.

*Matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C."* Inattention to this ensures delay.

*Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.*

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### PHOTOGRAPHS REGISTERED:—

*Mr. G. L. Jessop's Eleven and Uddington Cricket Club's Eleven*

*Gold Street, Northampton. Four Photographs: the Roman Catholic*

*of Northampton.*

*Mr. G. L. Jessop's Eleven and Uddington Cricket Club's Eleven*

*Preachers' Mutual Aid Association Meeting at H.I.L.*

*Uddington, 55, Fort Road, Margate. Photograph entitled: "His First*

*of Northampton.*

*of Northampton.*

*of Northampton.*

*of Northampton.*

*of Northampton.*

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*of Northampton.*

glass behind negative with no improvement, but by varnishing negative cures it, but everyone does not like their negatives varnished. Light is properly centred in every way. Is there any cure?—B. O.

1. Plate glass is often used. Try Hetley and Co., Soho Square, London, W.C. 2. Mercury vapour is largely used now. The tubes are placed behind a ground glass screen, and the direct (not reflected) light used. The light is very highly actinic, and particularly suitable for working from large negatives. 3. The difficulty probably arises through the ground glass being placed behind the negative instead of behind the condenser. When using a really diffused light, such markings rarely occur. We deal with the point on another page.

Q. S.—We know the former only. We should use it only for bromide, platinum, or carbon prints, though it might be employed for P.O.P. if applied only to the edges.

W. C. E.—We cannot say. Better apply to Fallowfield, 146, Charing Cross Road, W.C., who can get the work done on the spot.

P. SKES.—Certainly, the apertures you name will not give a range of speeds of 1/10 to 1/1000. If the widest slit is 5 in, the narrowest should be 1/20 of an inch. A slit of half the width gives half the time of exposure, and so on. An accurate test of the shutter is not an easy matter. We should advise you to send the camera to the actual makers to have the speed verified, or you might get the same done by Kershaw, St. Columba Street, Leeds.

APERTURE.—The "effective aperture" may be a little larger than the value (f/8), which you have correctly calculated from the actual diameter of the diaphragm and the focal length. This is due to the condensing action of the front lens, but we do not think it would amount to the difference found. You had better measure the effective aperture, say, by Mr. Piper's recent method.

M. I.—Certainly, the various toning processes, such as copper, uranium, etc., can be applied with a brush, but the process is not a very satisfactory one, and the results are not above suspicion as regards permanence. There are no text books on this branch of work, though occasional articles on the subject appear in the press. Our own opinion of the process is that it is not worth all the trouble, but you had better make one or two trials with formulae, such as you will find in "Toning Bromides," by C. Winthorpe Somerville. (Dawbarn and Ward, Ltd. 1s.)

NETTA.—Dorrett and Martin, Belle Vue Road, Upper Tooting, London, S.W.

OPALINES.—1. H. Cornthwaite, Dale End, Birmingham. 2. Reigate.

BROMOIL.—I shall be much obliged if you are able to enlighten me as to the cause of bromoil print taking up pigment in a patchy or streaky manner. The markings, some of which have quite defined edges, are most present or most visible in flat masses of tone, such as skies, which it consequently becomes impossible to cover with an even tint, as can be done in an oil-print. Is the cause likely to be connected with uneven bleaching, and what is the preventive of the latter? Some of my bromide prints have bleached irregularly (also in streaks and patches), but I left them in the ozobrome solution until they appeared to be bleached equally all over. I used the solution specially prepared for bromoil.—

AQUARIUS.  
It is very difficult to attempt any answer to your question, as the effect is very unusual. A similar difficulty in bleaching is sometimes met with in the ozobrome process, and also in sulphide toning, but no explanation of the uneven bleaching is known to us. Your pigmentation difficulty is no doubt due to the uneven bleaching. We have only met with the trouble two or three times, though we have treated some hundreds of prints. In every case the trouble vanished on treating a fresh print, and it appears evident that it is due to some special circumstance attending the preparation of the original bromide print.

J. C. W.—See answer to "Aquarius."

PHOTOGRAPHER.—You must send your name and address when asking queries.

CLEANING DAGUERREOTYPES.—A customer has sent me two Daguerreotypes to clean. They are nearly obliterated by metallic silver, with which you are no doubt familiar. Years ago I used to clean these, but have quite forgotten the formula. I believe it was iodine and iodide of potass. After it was dried in spirit and warmed to complete the drying. If you would kindly give me the correct proportions, etc., I shall be glad. The plates are sixty years old, and

are very valuable to my client. I do not wish to try experiments on them.—A. S. LANE.

The solution used is weak potass. cyanide solution. You may refer to the article in the "Almanac" (1907), page 767, taken from the "B.J.," November 3, 1906. Unless you feel sure of your work you had better place the picture in the hands of an expert restorer, such as Mr. E. W. Foxlee, 22, Goldsmith Road, Acton, London, W. CANADA.—1. Certainly. 2. No, not with the same characteristic surface nor with precisely the same tones. 3. Certainly, the best collodion papers will lie in the baths without curl. 4. Your informant's description of paper is vague. Certain additions may affect the permanence of the prints, but if toned with gold, followed by platinum (which is the best procedure for collodion papers), all leading makes of this material, such as Paget, Leto, Ilford, Kodak, Criterion, Rajar and others, will give permanent prints.

CHEAP POSTCARDS.—I recently took four men in a group for twelve postcards (3s.). I posted these to them, and they were not satisfied. They brought the postcards back to the studio. I told them the pictures were plenty good enough for the price paid, and I refused to take them again. They went away, but next morning when I opened the door the twelve postcards had been dropped into the letter-box. What am I to do with them?—VEXATIOS.

All you can do is to sue the men for the amount of the cards, though we doubt if it will pay you to do so. As you do not send a card we cannot say whether they are up to the average expected in such work.

TONING BROMIDES.—1. Will you give me a formula for a very cold sepia tone on bromide paper? 2. Formula for developer for bromide paper to be toned sepia, as I believe the developer used governs the tone of the print?—SEPIA TONER.

1. The less the exposure and the more forced the development the colder the tone usually. Additions of mercuric chloride solution to the ferricyanide bleacher darkens the shade of the toned print, but the permanence is open to question. 2. The particular developer is not very important and has not much effect on the tone. Amidol is as good as any.

OLD LENS.—We have in our possession a lens marked "Derogy's Crown and V.R.," with patent underneath rack and pinion, total length, including hood, 5½ in.; size of lenses back and front combination is 2¼ in.; also two other lenses for inserting in centre, one measuring 1¼ in. and marked "Lens for smaller size," and one measuring 1¼ in. and marked "Lens for larger size." These lenses are easily inserted by giving one turn to the whole lens, which then divides in the centre. The stops are also inserted in this manner. Any information you can give of the above, as to the sizes and value of same, will be esteemed a favour.—C. H. F.

1. This is a very old make of lens introduced by Derogy of Paris some thirty or forty years ago. We have answered more than one query with regard to this form of lens lately. The object of the two additional lenses is, the one to lengthen the focus of the instrument, and the other to shorten it. As you do not mention the focus of the lens—its diameter and length of tube are no guide—therefore we cannot say what it should be expected to cover. However, at the time this was made, lenses with a diameter of 2¼ inches were generally termed half-plate lenses. These lenses have little market value at the present day. The best way of getting at its value is to try and see what it is worth to you in daily work. 2. No such list is published.

LENS NOT WORKING TO FOCUS.—I have recently bought a portrait lens, said to be for whole-plate pictures. It is about three and a quarter inches in diameter, and bears the name of "Voigtlander, Wien und Braunschweig." I find that it gives a beautifully sharp image on the ground glass, but I cannot get a sharp negative with it, it is all out of focus. One or two friends suggest that the fault must be in the camera, but I have tried that with two other lenses and got sharp negatives with each. The lens is not fitted with stops, and I see a sort of scale without figures marked on the sliding tube of the mount. What can that be for? Any information you can give me I shall be thankful for.—T. NOADES.

This is clearly a very old lens. All the earlier lenses issued by Voigtlander had a chemical focus, and it was therefore necessary, after the image had been focussed on the screen, to make a correction for that. The fine scale on the sliding portion of the mount

is to show the extent the lens has to be racked out after focus. The nearer the lens is brought to the subject the greater is the difference between the optical and the chemical focus, and has to be taken into consideration.

UNMOUNTING PRINT.—A customer has brought me some print mount in an album. Most of them are unmounted, but a few on mounts. These I have soaked off, all but one, which is on a thick board. This one I have soaked in cold water for 24 hours and it was as tight on as ever. Then I put it in very hot water for a time, still it would not move. Can you tell me how to do with it, as I told the lady I could get all the pictures off the mounts, and I do not like to say I have failed with one. BOYDE.

Without knowing what was the mountant used for this print it is difficult to say how it is to be got off. However, if the print cannot be got off the mount the best thing will be to get the print off the print. With long soaking the mount will become soft throughout its thickness, and the different layers of paper will then be separated and stripped away until the last one is reached. If that cannot then be stripped off it may be rubbed away from the picture, piecemeal, with the finger, leaving only the picture on the last part of the work will require some little care.

SUSPECTED PLATINOTYPES.—A member of my family has had several portraits taken. They are printed in platinotype, or, at least, platinotypes were charged for, and a receipt given for such. On examining several of them it occurred to me, owing to their dark colour, that they are not really genuine platinotypes, but bromides. Is there any simple test that I can apply so as to tell if they are platinum or bromides? Also, if they should turn out to be the latter, can the photographer be compelled to return the money paid for them?—A DABBLER IN PHOTOGRAPHY.

A very simple test is a saturated solution of bichloride of mercury. If a few drops of this be put on a bromide print the image then will be bleached out; but if a genuine platinotype treated in a similar way there will be no effect. As regards the return of the money paid, certainly he will have to return it. Furthermore, he can be prosecuted in the police court, under the Merchandise Marks Act, for fraudulent misrepresentation. The person who paid for the photographs can prosecute.

#### NEW COMPANIES.

KENT-LACEY STUDIOS.—Capital £6,000 (£1) (1,000 5s. preference shares, cumulative preference). To acquire the business and undertaking of Kent and Lacey, of 104, Terminus Road, and 1, Gildridge Road, Eastbourne; 134, Weston Road, Brighton, and 25, White Horse Road, Hastings, to adopt an agreement with S. Lacey and to carry on the business of photographers, etc. None. 1, Gildridge Road, Eastbourne.

MUENZER, LTD.—Capital £25,000 (£1) (12,500 preference shares, 1s. each). To acquire the business and undertaking of Muenzer at the Heliosgraphic Works, 336-340, Chester Road, Cornbrook, Manchester; (2) business of photographic artist, art dealer, and picture framer, carried on by him at 71-75 Grosvenor Road, Manchester, and to carry on the business of Great Britain Fine Art Company. None. 1, Chester Road, Cornbrook, Manchester.

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## The British Journal of Photography

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### SUMMARY.

Photographic Convention.—Next year's meeting will be held at Canterbury with Mr. H. Snowden Ward as president. The name of the president for this year, Sir Cecil Hertslet, appears on page 523.

Two novel suggestions on making portraits of children in studio were recently given before a Convention meeting in London. (P. 527.)

Death of Mr. Henry Lomb, one of the original founders of the photographic firm of Bausch and Lomb, has taken place. (P. 533.)

Old-told tale of the need of ascertaining costs in running a photographic business is repeated in a paper read before the Photographic Association of Illinois. (P. 528.)

W. Michell concludes the article on the copying of faded photographs with some hints on avoiding grain in preparing copies. (P. 526.)

Two minor points in the making of diagram lantern slides are mentioned on page 522.

Photography at the Franco-British.—Numerous applications for permission to photograph appear to have led to a standing order which persons can obtain permission to use a camera at the rate of one shilling per day. (P. 522.)

Patent for self-developing papers has been taken out. (P. 534.)

Last lecture by Dr. S. E. Sheppard on the chemistry of photography appears in an abridged form on page 529.

Photographers in the North have now the opportunity of seeing the collection of pictorial photography at the Newcastle Art Gallery. (P. 534.)

Formulae for blocking out mixtures have been given by Mr. S. E. Sheppard. (P. 531.)

Recent paper on the economy of modern electric lamps of the Edison and Tantalum types (and discussing also recent advances in the use of mercury-vapour lighting) has been published in "Nature." (P. 531.)

### EX CATHEDRA.

**The Convention.** At the time of writing half of the Convention week at Brussels is gone, but the record attendance and the success of the gathering have already justified the foresight of those who last July supported the acceptance of the invitation from the Association Belge. Equally satisfactory, too, is the fact that leading opponents (on constitutional grounds) of a Brussels visit are among the most enthusiastic conventioners this week in Brussels. Under the presidency of Sir Cecil Hertslet, the formal business of the Convention has passed off with all imaginable smoothness, while in the more informal association of members which makes up an important part of the Convention proceedings, nothing more than has been done by Sir Cecil could be expected of any president. At the annual general meeting held on Tuesday evening it was decided to hold next year's Convention at Canterbury under the presidency of Mr. H. Snowden Ward.

**A New Intensification Formula.** M. George Le Roy, in a recent note to the French Photographic Society, has recommended the addition of a little commercial hydrogen peroxide solution to the solution of mercuric chloride used for intensification. The mixture is found to possess greater activity and rapidity of action, and is able to bleach negatives which resisted the action of the plain or acidulated mercury solution, owing, it is thought, to imperfect fixation. The suggestion appears to be that the peroxide acts on the compounds in the film of the negatives which oppose the action of the mercury solution, though we cannot believe that intensifiers compounded on this principle would answer expectations.

**Photographic Copyright in Russia.** It is hardly surprising to learn that photographs at present enjoy no protection against infringement in Russia: in this, as in many other matters, Russia is about in the same state as in the middle ages. According to a German contemporary, attention is being called to the disadvantage at which Russian photographers stand in comparison with those of other European countries, and an appeal is to be addressed to the Duma for a remedy for the existing conditions. Probably the Duma is too busy speculating as to what will be happening to it in, say, a week's time, to pay much heed to creating privileges for photographers, but it is nevertheless interesting to hear that some combined action is being taken, and that among the societies represented is an association of professional photographers.

**"Photo-Finishers."** This not very graceful compound word has been adopted by an American contemporary for the specific description of persons carrying on the business of developing, printing, etc., for the trade.

Apart from the philological defects, which are sufficiently obvious, the term is not the happiest, and would be most generally understood in this country to apply to persons doing the working-up in black and monochrome of photographic enlargements, whereas the intention is evidently to apply it to individuals and businesses whose work is less special, being limited to the treatment on a large scale of plate and film exposures and their perfectly "straight" printing in P.O.P., bromide, or other popular process. Yet, as our contemporary asks: Can a more fitting or intelligible word be found?

\* \* \*

#### **Cameras at the Franco-British Exhibition.**

Experiences in regard to permission to photograph at the Franco-British Exhibition appear to have been very various. Apparently permission to use a hand-camera in the grounds is readily granted, yet we hear of instances in which applications by letter receive no attention, whilst other persons giving only a verbal assurance that their photographs were for private use only, have obtained permission without the least difficulty. The appointment of a single official photographer to an exhibition is bound to raise questions of difficulty, but we imagine that in thus making this appointment it is not the intention of the exhibition authorities to deny to visitors the opportunity of securing mementoes of the days spent in the picturesque grounds at Shepherd's Bush, and we are interested in finding it stated in "Photography" for Monday last that daily permits are to be issued at a charge of one shilling.

\* \* \*

#### **Photographic Measures of Star Colours.**

An interesting application of photography has been made by Messrs. J. A. Parkhurst and F. C. Jordan, who have attempted to obtain a photographic measure of the colour of a star by comparing the magnitudes of images obtained on ordinary plates sensitive only to blue and violet, with those given on plates sensitive to green and red. Pairs of plates were exposed regularly from 1904 to 1906 with the twenty-four inch reflector of the Yerkes Observatory, and it appears that the results have proved to be eminently satisfactory. By using a special filter screen with the iso plates, results were obtained that corresponded directly with the visual magnitudes, and by this method all errors due to the unsatisfactory nature of eye estimates were eliminated.

\* \* \*

#### **The Spectrum of Magnesium Oxide.**

Those who experiment with the spectrum have a vast field for exploration and frequently hit upon features that other workers seem to have missed. Mr. E. E. Brooks, of the Leicester Municipal Technical School, writes to "Nature" to the effect that there appears to be a well marked, though faint, fluting in the spectrum of magnesium oxide that has not been hitherto recorded, consisting of seven principal edges and several fainter lines. The wave-lengths of the principal edges are given as 4823, 4819, 4810, 4801, 4791, 4780, 4771. Two lines have been measured between 4771 and 4780, and five lines, possibly belonging to the system, between 4771 and 4731.

\* \* \*

#### **A Rival of the Camera.**

A complaint is made in some quarters that the vogue of the motor-car has trenchanted on ground occupied by photography as a pastime or hobby for the leisured and wealthy classes. If this is so it seems a curious fact, for while the photographer should find a car of the greatest possible value in getting around and about the country, and in carrying heavy apparatus to the most suitable hunting

grounds, the car owner who is not already a photographer should easily be tempted to become one, owing to obvious facilities that his car provides him with. The man who can afford a car can easily afford a camera, so that the matter of expense cannot very well affect the question. Altogether, we feel very doubtful if the complaint referred to is well founded. We should be rather inclined to the opinion that the possession of a car will inevitably sooner or later, to the acquisition of a camera, and motoring generally will lead to a much greater use of large size cameras.

#### **DIAGRAM LANTERN SLIDES.**

The worst slides usually to be seen in scientific lectures are the simple black and white line subjects. The difficulties in the way of producing fairly good line slides are great, yet we have often met with examples in which so-called "black" portions were so feeble as to be barely visible on the screen, while on the other hand, we have seen slides so badly fogged that the lines were nearly invisible from this cause alone. It has been suggested that the more scientific the lecture the worse are the slides, we should not like to describe this as a universal rule. The reason, no doubt, is that the slides are prepared hurriedly, probably on unsuitable plates and with a developer that happens to be most handy. The secret of success is certainly in the preparation of the negative, a good line negative is not a very difficult thing to make. Backed "process" plates must be used and hydroquinone with caustic soda and plenty of bromide is certainly the best developer. As for exposure, there is a considerable amount of latitude. When working by daylight we find the Wynne meter a very reliable guide if we give one-quarter of the full exposure that the meter suggests for the plate and stop in use. Another method that works very well is to use a stop of the same number as the Wynne speed of the plate in use, and expose for the time taken by the quarter-tint to darken. The diagrams should be on a large scale so that a fair amount of reduction, say one-third or one-fourth, is required, and development should give a dense black deposit with very slightly veiled lines. Development is carried far enough the lines can easily be cleared with a strong Farmer's reducer without damaging the black background representing the whites. Intensification may be necessary in some cases, while spotting is always required, but even this is easy, as it is only essential to block out the pinholes without paying any regard to their surroundings.

Professor Bryan, in "Nature," calls attention to the importance of good lantern slides in lectures, and emphasizes the fact that they should be of uniform density. To secure this quality in slides made from negatives of different densities he suggests the use of a simple form of photometer. A sheet of white cardboard is folded into the form of an isosceles prism or double inclined plane, the faces of which are illuminated by movable lights that can be placed at varying distances. If two negatives are placed side by side in front of the two faces of the prism, the lights can be adjusted until the negatives appear to be of equal density. From the distances of the lights the relative exposures can then be calculated. This appears to be a good and promising method, but we feel obliged to point out that the simplest method of producing uniform slides is to work under fixed conditions from negatives of uniform density, and there is not very much difficulty in securing uniform negatives in the case of such subjects as usually appear in scientific lectures. Systematic exposures—which we mean exposures adjusted by meter or by some definite method—and time development will, as a rule, produce negatives that vary very little in density, and therefore easily yield uniform prints.



# THE PHOTOGRAPHIC CONVENTION OF THE UNITED KINGDOM.

## TWENTY-THIRD MEETING — IN BRUSSELS.

the weather, with just enough cool breeze to temper the shine, but without enough to make the sea-passage is to the weakest landsman, saw the opening of a con- that promises to be ever-memorable, and that is in many respects from previous meetings.

British (non-local) membership is a record, even at the writing, and several members will be added at the middle week. The local membership is phenomenally small—a in the reverse direction. The members from the British approached Brussels by many routes, the principal parties on Saturday, by Dover-Ostend and by Dover-Calais. and boats on the English side were crowded and late, n once the Belgian State Railway was reached, excellent le accommodation was found. This, and several other in which Belgium compared favourably with Britain, cks to the insular prejudices of many who were visiting erlands for the first time. Once in Brussels, they soon emselves into the gay, bright, open-air life of the capital, e is every prospect that sociability will eclipse photo- and give us another record—of the smallest number of ex- ver made at a convention. The Bois de Cambre in the e, and the Park of Wauxhall, with its fine open-air con- night, have proved most attractive and delightful rendez- nd the open-air café meals, on the borders of the busy have captivated all the visitors.

aturday, as the steamer reached Ostend, she ran almost e the Royal yacht of King Edward VII., and a number embers stayed in the port to see the annual festival of ing of the Waters. Those who went straight to Brussels e churches, the woods, the art-galleries, and the new laeken full of interest and variety on Sunday and Mon- ning.

official gathering on Monday, when members gathered ercle Artistique to meet each other and to "sign the t was found that the party was not only large, but also resentative, and included many old members who have r with the convention for some years.

oms are excellently adapted to the needs of the conven- n the first salon the Platinotype Company gives a fine of pictures by the best British and American workers; ond salon is a collection of local work—of which more nd in the lecture hall is a fine exhibition of forty-eight studies by Mr. Rudolf Dührkoop (who is a member this n exhibition and demonstrations of aerograph work by rles L. Burdick, and exhibits of pictures and apparatus ik, Ltd., by W. Watson and Sons, and by Carl Zeiss.

ollection of local pictures by members of the Association

Belge de Photographie is worthy of all praise, and is far ahead of the shows of local work usually arranged in Britain. The good things are far too numerous to be specified in the space at our disposal, but almost every exhibitor was well represented. Some of them are already known at the R.P.S. Exhibition and the Photographic Salon, and we think that more than one of the others should be induced to exhibit in England.

At the reception on Monday afternoon, H.R.H. Prince Albert of Belgium, the Président d'Honneur of the Convention, attended and welcomed the principal visitors, but was obliged to leave before the formal business began.

In the absence of Mr. Alfred Watkins, the retiring president, who was detained in England by illness, Mr. E. J. Humphery took the chair and introduced Sir E. Cecil Hertslet, this year's president. They were supported on the platform by Messrs. F. A. Bridge (hon. sec.), C. H. Bothamley and F. de P. Cembrano (past presidents), Commandant van Bever (president of the Association Belge), M. Ch. Puttemans (vice-president), and M. Vanderkindere (hon. local sec.).

Sir E. Cecil Hertslet spoke of the peculiarly interesting circumstances of this first convention outside the United Kingdom, and said that nowhere could it have visited a more hospitable people. He referred to the splendid collections of the old and the modern masters of painting to be found in Belgium and of their influence upon photographers, as well as upon all other artists. Speaking of the great influence of the Association Belge, with its headquarters in Brussels and its branches at Malines, Ghent, Liège, Namur, and Mons, and of its excellent monthly "Bulletin," he introduced tributes to two Belgian workers on the technical side—Von Monckhoven and Josef Maes—and to the British photographic Press, which he described as the most influential in the world. In reviewing the past year, he referred to the loss of Mr. John Stuart, a past president, and Mr. A. Horsley Hinton, a member of Council of the Convention. He then sketched the recent progress of photography in picture-making in record work, and in technical progress, with special reference to the Autochrome and to the Donisthorpe processes.

The vote of thanks was proposed by Mr. C. H. Bothamley and seconded by Mr. F. de P. Cembrano.

Dr. W. Scheffer read a paper and showed many excellent slides to illustrate the structure of the Autochrome plate; and Captain Harfeld explained a most interesting collection of slides of the Far East.

The conversazione at night was distinctly informal, but none the less enjoyable. Business: Renewing old friendships, and enjoying the fine music provided by the evening concert in the Wauxhall Park adjoining the rooms of the Cercle Artistique.

## THE PRESIDENT'S ADDRESS.

Following was the address given by the President of the Convention, Sir E. Cecil Hertslet:—

very appreciative of the honour which has been conferred by my election to the Presidential chair of the Photographic Convention. The circumstances under which we have met are peculiarly interesting, for the Convention has made departure, and, for the first time in its history, has deter- hold its annual conference beyond the limits of the United Kingdom. Since the Photographic Convention was founded in 1886, advancement of photography and to afford opportunities for intercourse and exchange of ideas among those interested in it, its annual meetings have never failed to be attended with success and enjoyment. The Convention has usually been held in England, but on four occasions it has visited Scotland, and on two occasions Ireland. We are now assembled for the first time

on foreign soil in order to hold our conference at Brussels by the invitation of the Association Belge de Photographie. It would not be possible for us to meet in any foreign country where we should receive a more friendly and hospitable reception than that which is about to be given to us in Belgium, and, in addressing you to-day, on the occasion of the formal opening of the Convention, I do not hesitate to say that when you return to your homes you will carry back with you the most agreeable remembrance of the welcome which you are certain to receive from the Belgian people.

You will have in Belgium the opportunity of seeing the very finest examples of Flemish art: in Antwerp Cathedral, Rubens' "Descent from the Cross"; at the Antwerp Picture Gallery the best and most noted works of Quentin Matsys, Rubens, and Van Dyck; in

Ghent Cathedral, Van Eyck's "Adoration of the Lamb"; and at Brussels and Malines other notable works by the great Flemish painters. Besides the pictures of the Old Masters, you will see both at Brussels and Antwerp excellent examples of landscape, seascape, and portraiture by modern painters. You will find yourselves, therefore, in the midst of artistic surroundings which must necessarily appeal to those among you who aim at the attainment of the art of picture-making by photography.

In Belgium there are many enthusiastic adherents of every branch of photography—men of science, amateurs, and professional photographers—and, as is happily the case among ourselves, a complete understanding exists between those interested in the several branches of the art. There are no divisions or distinctions, and all persons connected with photography associate in the same societies, and work harmoniously together.

Belgium has not produced many pioneers in photographic science. The best-known Belgian inventor is Van Monkhoven, who some years ago published an improved method of making dry plates, which was thought highly of at the time, but this was, of course, when dry plates were in their infancy. Mr. Joseph Maes, one of the veterans of the photographic world, is President of the Antwerp section of the Association Belge, and is still an active worker.

Photographic societies in Belgium are but few in number, by far the most important and influential of them being the Association Belge de Photographie, at whose invitation the Convention is now being held in Belgium. The Association Belge was founded in 1874, and is, therefore, quite venerable compared with the Photographic Convention, which came into existence only twelve years later. It enjoys the special patronage of his Majesty the King of the Belgians, and his Royal Highness Prince Albert is its "Président d'Honneur." This Society overshadows the smaller Belgian societies far more completely than the Royal Photographic Society dominates other societies in the United Kingdom. It has a membership of about 600, and its sphere of action comprises the whole of Belgium. The Society's headquarters are at Brussels, but it is divided into sections which are located at Antwerp, Ghent, Liège, Namur, Verviers, and Mons. Each section is managed by a local committee, and although subordinate to the central administration at Brussels, enjoys a considerable amount of autonomy. This system of allowing a certain freedom to the local branches has assured to the Association Belge the preponderance to which I have already referred, and for twenty years it was the only photographic society in the whole of Belgium. The Association organises from time to time photographic exhibitions to which our foremost British workers have frequently contributed, and photographs by its members are often seen on the walls of the Royal Photographic Society's Exhibition and of the Photographic Salon. The monthly Bulletin of the Association is an attractive publication, illustrated with artistic reproductions of some of the best work of the members of the Association. The Bulletin contains articles of general interest, many of which are translated from the British photographic Press, while the minutes of the proceedings of the Association also find a place in it, but one that is secondary only. The Bulletin of the Association Belge compares very favourably with the "Photographic Journal," the monthly publication of the Royal Photographic Society. There is a certain dullness overshadowing the monthly publication of our premier photographic society, and, without departing from the principle of restricting its contents so far as possible to the Society's work, the Royal Photographic Society might perhaps consider whether some of the more attractive features of the monthly Bulletin of the Association Belge might not with advantage be incorporated into its journal. A little additional brightness and vigour in the pages of the "Photographic Journal" would, I feel confident, be generally welcomed by the members of the Royal Photographic Society.

But if the appearance of the "Photographic Journal" compares somewhat unfavourably with its Belgian contemporary, the same criticism does not apply to the British photographic Press. There are very few photographic newspapers or other similar publications in Belgium, and the British Press has nothing to learn from any of them. Indeed, it may be stated, without fear of contradiction, that in no country in the world is there a photographic Press which can be compared to our own, whether from the point of view of the letterpress or of the artistic pictures which are reproduced therein. Our British Press has been recently strengthened,

and its influence concentrated, by the amalgamation of the "Graphic News" with the "Amateur Photographer," and of "The Photo" with "Photography," whilst the "British Journal of Photography" continues to maintain the high standard for which it has always been renowned.

The photographic societies in Belgium, apart from the Association Belge, are of no great importance, but mention must be made of the institution known as the International Institute of Photography, which has already rendered useful services in arranging and publishing photographic records, and which is destined in the future to render even greater utility. The object of this institute is to centralise everything relating to photographic records, and to centralise the office all photographic documents, so that they may be readily accessible to the public. The International Institute of Photography is attached to the International Institute of Bibliography, of which it forms a section. It possesses a very valuable collection of documents of all kinds, which is continually being added to. The documents, which are classified methodically, are placed gratuitously at the disposal of all persons who may be desirous of consulting them, and who may wish to avail themselves of the services of the institute in connection with any work on which they may be engaged. I recently visited this institute, and I found that the documents which already number 100,000, are systematically arranged, and that, owing to the excellence of its organisation, it is possible, without loss of time, to refer to any particular subject on which information may be required. I would advise members of the Convention, and especially those who are interested in library work, to avail themselves of a courteous invitation which has been received that they should visit the institute before they leave Brussels.

In this connection I heartily commend to your notice the work which is being accomplished in our own country by the National Photographic Record Association, under the presidency of Benjamin Stone, M.P., and by the "Amateur Photographer," which is urging its readers to make records of interest and antiquity. The records are likely to be destroyed to make way for modern improvements and alterations. In Belgium the changes looming in the future have continued extension of the old Flemish cities are very great. Antwerp, for instance, the moated fortifications, which form perhaps the best example in Europe of nineteenth-century military architecture, will shortly be demolished, and three adjacent villages with their ancient parish churches, are doomed to disappear together to make room for the extension of the port of Antwerp. Elsewhere old houses, narrow streets, and the quaint corners of the old towns are disappearing in all directions. One of the most useful works of the photographer will be to preserve for posterity a true record of the ancient churches, streets, and houses of interest.

There is one other duty which I desire to take this opportunity of impressing upon you, and that is to place all your influence on the side of those who in Parliament and elsewhere are endeavouring to put a stop to the disfigurement of our British landscapes by unsightly advertisements which mar our country fields, and are particularly conspicuous at the side of so many of our railway routes. The members attending this convention have homes in all parts of the United Kingdom, and our united voice ought to make itself felt in assisting the efforts which are being made to effect the removal of this blemish from the scenery of our country. The nuisance is especially annoying to photographers, as we are, with artists' licence, eliminate these undesirable adjuncts which detract from a photographic picture.

The subject before us this afternoon is so wide—and, indeed, inexhaustible—that it is only possible for me to give utterance to a few thoughts for your consideration. Photography affords a unique combination of both science and art. It is not only a science in itself, but it is the means of rendering most valuable assistance to other sister sciences, particularly to astronomy and medicine. At the same time, I defy unprejudiced persons who have visited the great pictorial exhibitions to assert that photography is not an art, or to deny that the best results are obtained by those of us who have eyes to see and minds to appreciate the beauties of the scenes which surround us.

I also desire to bear testimony to the educational usefulness of photography, and particularly to that branch of it which deals with the production of lantern slides. Due recognition is not always given to the assistance rendered by photography in producing



to education. I was recently present at lectures given before the Royal Geographical Society of Antwerp by two of our great British explorers, Lieutenant Boyd Alexander, who described his journey across Africa from the Niger, by way of Lake Tchad, to the Nile, and Captain R. F. Scott, who has succeeded in getting further to the South Pole than any other explorer. The interest of these lectures was trebled by their slides, and no one who was present could forget the photograph taken by Captain Scott at the furthest point south to which he attained, in which were clearly seen the snow-covered mountains which screen the South Pole from the traveller who would venture to approach it across the Antarctic ice.

There is one interesting historical fact which I should like to mention. At the time of the war between Belgium and Holland in 1830, when the Belgian people were fighting for their independence, Monsieur de Hochepeid Larpent, British Consul at Antwerp, observed, with concern, that the shells of the besieging force were menacing the safety of the tower of Antwerp Cathedral, the admiration to-day of the photographic world. My predecessor visited the camp of the besieging forces, accompanied by one of his colleagues, and by some of the notabilities of the city, and asked him to turn the fire of his cannons in another direction. This request was gratefully acceded to, and my predecessor was in this way the principal means of saving for Belgium its chief artistic glory, the Cathedral spire of Antwerp.

Turning, now, to the advancement of photography during the past century, it is certain that the most interesting and important photographic event that has occurred since the last meeting of the Convention is the introduction of the Autochrome plate, and the great advance which has been made in the art of photography in natural colours. Most of us have had the opportunity of viewing some of the results attained by this process, either at the last exhibition of the Royal Photographic Society, at the exhibition by the Society of our photographers recently held at the office of the "British Journal of Photography," or at the special exhibition organised by the Association Belge de Photographie, held last winter. The excellence in merit and artistic beauty of these photographs in natural colours, and the fact that the colours can only be seen by transmitted light, convey the irresistible impression that we are really on the threshold of the colour photography of the future. It seems at the present moment to be standing very much in the same position where Daguerre and Niepce stood when those distinguished pioneers first made known to the world their ability to produce photographic positives, and when each exposure gave only one resulting picture. We await with eager anticipation the advent of the Fox-Talbot of colour photography, the discoverer of a system, the means of which we may be able to produce a negative from which positives in natural colours can be duplicated. With this thought must abstain from further consideration of the progress in colour photography of which the Autochrome plate is such an interesting example. The subject has been dealt with exhaustively in the photographic Press, and we are shortly to have the advantage of reading a paper on the structure of the Autochrome plate by Dr. Scheffer.

I must make special mention of the method recently invented by Frank Donisthorpe, as that process is a new departure from the ordinary printing processes, the printing being independent of the action of light. The operation is briefly as follows: The negative to be printed from is immersed for five minutes in a hardening bath, and is then rinsed for two minutes, and placed in a strong dye solution for another five minutes. After being taken out of the dye solution and again washed, the negative is laid film upwards on a piece of glass, while a piece of gelatinised paper which has been soaked in the dye solution for two minutes is laid face downwards on the negative, the two being pressed together. After a few minutes the paper can be easily pulled off. It is then dipped for a moment in methylated spirit, and, after being blotted, the print will be dry in five minutes, and is finished. A fresh immersion for about half a minute in the dye solution makes the negative ready to have another print taken from it in the same manner. In fact, any number of prints can be taken from a negative after one hardening bath has been used. The process is one which has the advantage of both cheapness and simplicity, and, if ordinary care is taken in the selection of the negative, the resulting prints will be permanent. It is a process which is very useful when a large number of prints are required

from a single negative, but it does not appear as though it would be likely to be used by pictorial photographers, much of the beauty of whose work depends on a careful manipulation of the printing with a view to bringing out the high-lights and protecting the details in the shadows.

Modifications and improvements continue to be made in the ordinary printing methods, particularly in those that have the carbon process for their basis.

Since the last meeting of the Convention we have to deplore the deaths of some of our best-known fellow-workers: Mr. John Stuart, who was President on the occasion of the second visit of the Convention to Glasgow in 1898, died during the Hereford Convention week. Mr. Stuart, who was one of the first members of the Convention, was an eminent practical professional photographer, and he is sincerely mourned by a large circle of friends.

We have also to record with deep regret the death of Mr. Horsley Hinton, one of our foremost pictorial photographers, and a member of the Council of this Convention. Mr. Hinton has left a gap in the photographic world which it will be hard indeed to fill. For many years his work has been familiar to us all, and the interest recently shown by so large an attendance of the public to view the examples of his photographs at the special exhibition held a short time ago in the rooms of the Royal Photographic Society is a proof that the beauty, delicacy, and good taste of his photographic work are very highly appreciated. Mr. Hinton, who was an indefatigable worker, not only as a practical photographer but as Editor of the "Amateur Photographer," and photographic correspondent of some of the great London daily newspapers, and whose premature death may have been due in a measure to his having overtaxed his strength, has undoubtedly exercised a considerable influence upon the pictorial photography of the end of the last and the beginning of the present century; there can be no doubt that that influence, which was largely due to individual and personal effort, was altogether a beneficial one.

I trust, ladies and gentlemen, that you will carry back with you to your homes many beautiful photographic pictures of Belgian life, of the architectural riches of Brussels, and of the interesting ecclesiastical and municipal buildings which form the glory of the ancient Flemish cities of Antwerp, Ghent, and Malines. To us whose eyes are opened to the beauties of photographic art, it seems strange that the public should sometimes so completely fail to realise what we aim at when we attempt to make our pictures by photography. For instance, the "Daily Mail," in giving a description of the opening of the Druce tomb in the Highgate Cemetery in December, 1907, wrote as follows:—"Two planks were laid across the tomb, and a photographic camera was brought and placed in position to take a picture of the caskets as they lay, dust and grime included." It is depressing to reflect that in the minds of some of our fellow-countrymen such a gruesome subject as this could possibly form a photographic "picture." On the other hand the photographic artist will attempt, and often unsuccessfully, to make pictures out of the most difficult and unpromising material. Some of the finest lantern slides that I have ever been privileged to see were representations by M. Marissiaux, a Belgian photographer, of life and work in the coal mines of the district of Liège. These photographs illustrated the ordinary daily life in the mines, not only above the surface, but in the depths of the mines themselves. The figures were carefully selected and correctly posed, and the contrasts of light and shade were admirable.

If, ladies and gentlemen, you determine to face in a like manner the difficulties which confront you, you will take away with you from Belgium artistic pictures which will be a credit to you and to British photography in general.

As President of the Convention, I desire to express, in my own name, as well as in that of all the members, our sincere thanks to his Royal Highness Prince Albert of Belgium for the honour conferred upon the Convention by his acceptance of the office of our "Président d'Honneur." We are well aware of the interest which Prince Albert takes in the advancement of photography, and we greatly appreciate his Royal Highness's courteous action in acceding to our request that he should allow his name to be associated with the Brussels meeting of the Convention.

In conclusion, I must not omit to mention the valuable assistance which has been received from Commandant van Bever, the President of the Association Belge de Photographie, to Monsieur Vanderkin-

dere, and the Council of the Association Belge, in making such excellent arrangements for the busy week which lies before us. Last, not least, I must pay a tribute to our honorary secretary and treasurer, Mr. Bridge, who has been indefatigable in his endeavours

to secure the success of the Brussels week. This is the eleventh annual meeting of the Convention which has been marshalled by Mr. Bridge, and, as time goes on, his services to the Convention become more and more invaluable.

## ON COPYING FADED AND DETERIORATED PICTURES.

### II.

#### Faded Paper Prints.

In the previous article the copying of daguerreotypes and glass positives that had suffered by the ravages of time, or from other injury, was dealt with, and it was there pointed out that professional portraitists, by making a special line in that class of work, could very frequently turn it to a very profitable account.

Probably the larger proportion of this class of business that comes to the professional at the present time is in the form of paper photographs in a more or less advanced stage of decay, such as *cartes de visite* that, with age, have passed into the sere and yellow leaf. These pictures, by reason of their yellow colour, very often appear most unpromising things to copy, but they are really not so when one sets the right way about the work. These old paper pictures, as a rule, are not really faded in the true sense of the term. The lights may have become strongly yellowed by age, but usually all the detail is there, though somewhat buried in the general discoloration of the paper. If the yellowness were removed, the picture would be much improved in appearance, as well as for copying. This can readily be done, if it is a gold-toned picture, by simply immersing it in a weak solution of bichloride of mercury until the yellowness disappears. This treatment will remove the yellowness and leave the picture bright and clear, though of a somewhat warmer tone. A word of caution may, however, be given here. We have assumed that the print has been toned with gold, as all the old C.D.V.s were, but, if that were not the case, the mercurial treatment would remove the whole of the image and leave only bare paper; so that pictures only that are known to have been thoroughly toned with gold should be submitted to this kind of renovation. Even if the picture has been toned with gold, no detail that has actually faded out will be restored. Different methods of restoring faded photographs have, from time to time, been published. I have tried most of them, but none have proved, in my hands, of any practical value, at least for copying. Indeed, the copies made from these "restored" pictures have all been inferior to those I could have obtained from the pictures in their original state.

#### Avoiding Grain in the Copy

At different times I have read very elaborate methods given for copying paper pictures so as to avoid the "flannelly" or granular appearance the copies frequently present. The greater portion of these articles have evidently been written by those who have had but little practical experience in this kind of work. Most of it has been written under an entire misconception of the conditions obtaining. The writers have seemed to have assumed that the granularity is due to the unevenness of the surface of the paper; whereas it certainly is not. If it were, then heavily rolling the picture, so as to make the surface quite flat, would get over the trouble; whereas it does not; indeed, in some instances it appears to increase it. On the assumption that the woolliness proceeds from the unevenness of the surface of the paper, it is often advised that the picture be copied in a direct front light, and even a reflector of white paper placed below it to soften the shadows supposed to be cast from the paper fibres. Now, these are really about the worst con-

ditions under which a faded albumen print can be copied. The woolliness does not proceed from any unevenness in the surface, but from reflections from the glossy fibres of the paper, and it is these that have to be avoided in order to obtain a satisfactory reproduction. In the previous article it was pointed out that as the angle of incidence of the light falls on the object equals that of its reflection, the print should always be illumined at such an angle that any reflection there may be should be away from the lens, and not into it as is the case when a direct front light is employed in the copying.

#### Use a Side-light.

The best light in which to copy a paper picture, such as are now supposed to be dealing with, is a strong side one. This is diametrically opposed to much that has been said on the subject, but—the "proof of the pudding," etc. Let any one who is in doubt on the point, when he has a picture of this kind reproduced, first make a negative of it with a direct front light, and then another where the picture is lighted direct from the side, with all front light stopped off. On comparing the two he will be in no two minds on the subject. The point can easily be demonstrated without the exposure of plates in the camera. Let any one examine a paper print, such as we are now considering, in an ordinary room, standing with his back to the window, and holding the picture before him so that it is only lightly by direct front light. He will here see the granularity very strongly pronounced. Then let him turn sideways, and hold the picture at the side of the window, so that it is lighted only with a strong side light. It will then be noticed that the granularity has disappeared, and the image is quite free from it. This simple experiment should at once convince any one that a direct side light is the best in which to copy albumen prints.

When enlarged copies of this class of old photograph are required for finishing in monochrome or colour—and they are required much use without—it goes without saying that when the reproduction is of the woolly kind, a great deal more work is entailed in the finishing than if it were otherwise. Therefore it behooves the copyist to go to some extra trouble to get the best possible result to begin with. A very woolly enlargement, unless it is of a size that can be boldly dealt with, entails a lot of niggling work that may generally be avoided, if the one who makes uses skill and judgment in doing his work.

A method of avoiding the granularity was suggested many years ago, and may here be mentioned. The picture is removed from its mount and then mounted, with water, in optical contact with a glass plate. It is then copied through the glass. But in practice it will soon be found that this does not improve matters; some have even affirmed that it makes them worse. Certainly, in my hands, it has proved no improvement at all.

With regard to the plates most useful for our present purpose, theory tells us that orthochromatic ones are the best, but in actual practice I have found no actual advantage in them. I always use those I happen to be working with at the time. One point should have special attention, and that is that in all cases over-exposure should be avoided, as that tends to give mealiness of image.

WM. MICHELL.



## HINTS ON CHILD PHOTOGRAPHY.

(A Paper read before the Twelfth Annual Meeting of the Photographers' Association of Wisconsin.)

The subject that I have chosen for my address, that of child photography, is one of unlimited possibilities, touching, as it does, that most important branch of our profession, the photographing of the little ones. To my way of thinking there are no other subjects that we come in contact with which offer as great returns, financially and otherwise, as do these little friends of ours. There are many of our brother photographers, however, who, while seemingly realising this, are ill disposed to give the matter scant attention. Why, it is hard to say. Many claim that they have no success with the little ones; claim all kinds of excuses for failure in this line; at the majority, of course, blame the children. Candidly, I cannot agree with my brother photographers who seek to take the blame of their failures from themselves and put it where it does not belong; for, to me, there are no other subjects that we have who are as easily photographed as the children, provided we go about it in the right way.

### Toys and Plates.

Naturally, the question arises, "What is the right way?" Of course, in child photography there can be no "cut and dried" programme to follow: we have to adapt ourselves to the conditions as they arise, and be guided by our own and that we know of the experiences of others. Personally, I have always found it a good idea to become as well acquainted as possible with our little friends while they are still in the reception-room. Naturally, being amid strange surroundings, they are quite apt to feel somewhat diffident and bashful. On entering the operating-room, try to make them feel entirely at home, as, unless they do, it is almost useless to go further. You may take a little time, but you will find it time well spent, for you will never regret it. One of the best and quickest methods for gaining their confidence is by the use of toys. I always keep my studio well stocked with these; not in sight, but in a large cupboard in one corner of the room. I have found it the best policy to use but one toy at a time, three or four things will tend to confuse the child, and so make your work correspondingly difficult. When the little ones commence to enjoy themselves and forget their surroundings, you can commence to expose your plates, and don't be afraid that you are going to use too many. Make anywhere from five up to an indefinite number, judging by the size of your customer's pocket-book, although this is not always a safe rule to follow. In many cases it is not the people with the most money that spend the most.

In making a large number of poses you will find that your selection of toys will help you greatly, as you can make as many sittings as you wish and still have them all entirely different. Let the little ones play ball, build houses with blocks, have a dinner-party, or anything else that they enjoy, and photograph them while they are doing it. You will find that the result will please you; and, what is more to the point, it will please your customer. When you have made the full-length pictures that you want, sit the child on the floor and make one or two large bust heads, thus giving you a still more varied assortment.

Now you are ready to show proofs. Select the best ones; put them in a row, with the bust picture in the centre, and draw the attention of your customer to the beauty of the entire set for framing purposes. Try this, and you will be surprised to find the number of these rows you can sell, in addition to a single dozen single photographs, and your four or five dollar order will increase to fifteen or twenty before you know it.

### How to Dispense with Re-focussing.

To return to the operating-room. Some people have asked me what I consider the most useful and valuable toy to use

in photographing children. In answer to this question, I think that I use an ordinary rubber ball more than anything else. I have yet to find the child that I cannot interest in this little plaything. Just roll it across the floor—not necessarily at the child itself, but, for instance, up on the background, where it will roll back of its own accord. Do this a couple of times, and almost invariably the child will follow it. It seems to have the same fascination for them that a string has for a cat. When you have awakened the child's interest in this manner, ask him to throw the ball to you, and in a moment you will have a full-fledged ball-game on your hands.

Now comes the next step. Tell the little one that in order to play ball right you must have a base, and he or she must stand on it when they throw the ball. (Of course, you are using a light background with a floor-cloth, or if you are not, you should be.) Take a pencil and lightly trace a circle on it, about a foot in diameter. Then get the child to stand on the base and focus the camera while he is there. This will solve the focussing question for you, as, no matter how often he leaves the spot, bring him back and he is in focus again.

You can now go ahead with the ball-game if you wish. Take the ball yourself, have Johnny on the base, and count three, throwing the ball to him on the third count. He will hold his hands outstretched, and a look of intense interest and expectation will spread over his face. That's what you want, so press the bulb. Then let him throw the ball to you. When he draws his arm back, make another exposure; and so on. You can make a dozen poses this way without re-focussing, if you wish. Then, too, when the ball-game is over he is thoroughly livened up and ready to play with anything else you may show him.

One thing that I wish to call your attention to is a very simple little trick that I use a great deal to attract the attention of children. It's rather hard to explain it without demonstrating it at the same time, so I will do both. First take a copper cent, or, if you haven't that, a twenty-dollar gold piece will answer just as well. Moisten it, when the child isn't looking, and place it upon your forehead, and make it stick there. Tell it to come down—it will come. Do this a couple of times, and then have Mary or Johnny to tell it to come down. When it comes, it will usually bring a smile with it.

By the way, make your baby-pictures with laughing faces if you can. People admire a sweet expression; but, nevertheless, they usually say, "I want baby laughing, just as he does at home." And it is "up to you" to take him that way or lose your reputation. That reminds me of a group I once had in the studio—three children and a dog. The instructions were, to photograph the two younger children laughing, the older one sober, and the dog's ears standing up straight. Now, I am willing to try almost anything, so I tried to photograph this group. However, I failed to "make good." I could get the children all right, but, judging from his actions somebody must have glued the dog's ears down, and I couldn't "get a rise out of them."

### Backgrounds.

Now, a word about backgrounds. I believe that in ninety-nine cases out of a hundred, a white, or at least a light, background is the most desirable one to use, as it gives a light and delicate effect that greatly enhances the beauty of any child's photograph. Personally, I use a blue-white ground for my platinum work, with a slight cloud effect added to the finished print. For the cheaper work I generally use a light ground with a suggestion of a curtain painted on it. This, I find, gives a much more artistic print than a dead white ground with nothing to relieve the figure.

In conclusion, I will say that while child photography, successfully done, requires both time and study, it is still a paying branch of our profession in which to specialise. Build up a name for yourself as a good child photographer, and the rest of the people will come as a matter of course. Make up your mind that you can do it, and you will find that, like

everything else in life, it is just what you make of it, and not especially difficult after all. Push your children's work the front—put out specially nice displays in your showcases exercise all the tact and patience that you have, and there is no question but that you can soon build up a name for yourself as a successful child photographer. L. D. CLAPP.

## THE PRICE OF THE PHOTOGRAPH—AND THE COST.

[The season of photographic conventions in America being just over, our contemporaries in the United States are full of the papers read before these meetings—or business conferences, as they most often are—in various parts of the country. The following paper, which the author himself calls "The Business Art of Getting the Big Round Dollar," was read before the Photographers' Association of Illinois, and may be commended as a vigorous version of a sermon which is constantly being preached to photographers, and needed, apparently, as much in America as in the United Kingdom.—Eds. "B.J."]

I HAVE been attending photographic conventions for a number of years, and I have never attended one where I did not receive a benefit, but the lectures in each session have always been on the line of Art, or what constitutes an artistic picture and how to produce it, with part of the time being taken up discussing whether we are entitled to be called artists. Now what difference does it make to you or me whether we are entitled to be called artists or not, so long as our patrons consider our productions of a high class and are willing to pay for them? Now the art I am going to talk on is the business art of getting the big round dollar, a branch that has been neglected heretofore at our conventions. To begin with, we will take a little trip through the country and stop at every town of any size and inquire as to who are the leading citizens, and we will go from the Pacific to the Atlantic, and in no instance will a photographer's name be mentioned as one of the leading citizens, while all other occupations will be represented. Now, why is this? The only conclusion that I can draw is that we have spent our lives in learning how to make a picture, and not the dollar. Now there must be something wrong in some way with our methods, and the conclusion I have come to is that we are controlled by precedent. I would like to ask if there is any one present who can tell me what it costs him to produce a dozen pictures? (No response.) Well, if you don't know what it costs you to produce an article, how are you going to put a selling price on it? I wish each and every one of you will go home and find out just what it costs you per dozen, and report at next convention, for I am satisfied that after figuring the cost of production you will cut out all pictures that you are making for less than cost. You must take a year's business for an average. Put down your rent, what you paid out for help, taxes, heating, incidentals, stock bills, then add about 5 per cent. for wear and tear, add up and divide total by number of dozen pictures you made during the year, and you will have the exact cost per dozen. Then the different sizes can be figured on basis of difference of cost of material that goes in the picture.

### Cost of Production

To illustrate: a former friend of mine came into my studio (and being an amateur of considerable experience and away above the average intelligence), said he wanted to have some pictures taken, and asked me what he ought to have. I threw out a picture and told him that was what he wanted. He asked me what they were worth. I told him only twenty dollars per dozen. He says: "Ye Gods! you ought to get rich." I told him if I made as large a profit on those pictures as he did on his corn, I would. He said: "What are you talking about? It doesn't cost you over two dollars a dozen to make these." "Well, now," says I, "let's figure a little. How much land will a bushel of corn plant?" "About five acres." "Well, you will raise about 50 bushels per acre?" "Yes." "And 50

bushels at 50 cents per bushel is \$25?" "Yes." "Cost of seed corn 10 cents, profit \$24.90." "Well, you must consider cost of my land." "No, you don't consider the cost of studio." "Then you must consider my hired hands." "No, don't consider the cost of my help." "Then look at my horses and implements." "You must not consider your horses and implements; you don't consider my implements." "Well, look at my time." "You must not consider your time; you don't consider my time. You only consider the cost of plates, paper, folders, or, in other words, the seed corn in my production; if I charged in proportion to your profit on corn I would give you four hundred dollars per dozen, while I am only asking you twenty." "Well, go ahead and make them; you have the best of the argument."

Another time a lady came into my studio and made an engagement for a sitting, saying she wanted some nice photographs to give her special friends, she having had a dozen finished the week before by her home photographer, but they were, as she said, only cheap pictures, being \$3 pictures, good enough to give to ordinary friends, but not good enough for special friends. When she came in for her sitting she brought one of those cheap pictures with her, and I want to tell you they were elegant pictures; fine lighting, beautifully posed, well developed, and nicely toned, only they were mounted on a cheap card, and it made me hump myself to get one as good and, by finishing nicely and mounting in nice folders, she paid me \$20 per dozen, and was thoroughly satisfied, and I preserved them for her particular friends with considerable pleasure, having confidence in quality because she paid a good price. This goes to show that a customer will not place a higher value on your productions than the man that makes them. So be satisfied and produce the value and charge for it if you want to be satisfied, but one without the other is never appreciated. It costs me \$3.34 per dozen to produce pictures, and the cheapest picture I make is \$4, and I make only a few of them, but I can see I never make a dozen for less than cost. And after I figure the cost of production I am satisfied that you will cut out all pictures that you are making for less than cost; then your bank account will begin to grow, and you will feel more like a business man.

### Babies, Lovers, and Old People.

I would also suggest that when you go home you call a meeting of all your competitors and see them personally, lay out a plan before them and show them where they are making pictures for less than cost of production, then establish a minimum price and all agree not to make any more work for less than cost. If you can, I would suggest that all photographers in the same town (county, if possible) meet once a month and talk over business. We all have our dull times, and when it is very easy to think the other fellow is doing all



ness. So to stem the tide the first thought that comes to us is to cut prices—the very worst thing we could do, for it is us in the estimation of the people, and they think that it doesn't cost anything to produce pictures or we wouldn't cut prices so. Now, there are staples in the picture business as in the grocery business. The staples of the picture business are babies, lovers, and age, for every baby that comes to be photographed, and when a young man falls in love he must have his girl's picture, the young lady must have the picture of her man's; and time waits for none, so we must have the picture of the old folks, and that class of photographs are as

staple as sugar. Then the business of the photographer depends on his ability to produce quality and his mixing quality, so don't shut yourself up when not at work, but be a man among men. Join organisations and get acquainted with as many of the good people as you can, and never presume superiority to any one, but consider yourself as good as the best. Another point I want to mention: Never attempt to quote prices on the street; tell them you have all kinds of prices, according to quality, and they must come in and judge for themselves; then when you get them in your studio if you don't land them it's your fault.

R. H. MANN.

## THE CHEMISTRY AND PHYSICS OF COLLOIDS.

### IV.

The following is the abridged text of the concluding lecture by Dr. S. E. Sheppard at the L.C.C. School of Photo-engraving, Lithography, Bolt Court, London, E.C. The previous lectures have been reported in the Journal for June 12, 19, and 26, 1908. —Eds. "B.J."]

well-known investigations of Carey Lea on the coloured silver halides, prepared by the partial reduction of normal silver halides, led him to the view that these consisted of mixtures of silver halide with normal halide, of the nature of lakes or, as we may term them, adsorption-compounds. Furthermore, he was of the opinion that both the printed-out image and the so-called latent image were identical in composition. The view that a sub-salt was combined in this manner with the normal silver halide was taken because of the resistance to bleaching by these silver halides in oxidising solutions which destroy metallic silver. Whether it was silver or sub-salt combined, the properties of the halide were greatly changed (both the colour and the light-sensitiveness), even in the case of quantities small to be analysed. One method of obtaining "photo-lakes" deserves especial mention; it consists in heating silver precipitated silver chloride with finely divided silver in aqueous suspension. On treatment with nitric acid a red silver halide is obtained. Lea was of the opinion that it could reduce normal halide to the sub-salt  $Ag + AgCl$ .

Lüppo-Cramer has carefully repeated these experiments and comes to a different conclusion. He prepared hydrocolloidal solutions of silver bromide and silver iodide in these in different proportions. No colour change was observed, and the silver was entirely dissolved out from the solution. The result was quite different if the mixture was coagulated or precipitated, as with sulphuric acid. The precipitate on treatment with nitric acid loses silver till a certain colour is reached, which is not discharged. The colour change always occurs on coagulation by electrolytes. The silver is removed from the "solution," not from the coagulum. "Insoluble metallic" silver no combination is obtained. These grounds Lüppo-Cramer concludes that no chemical compound of the nature of a sub-salt, but simply an "adsorption-compound" of silver and normal halide, is formed. This is further supported by the fact that the silver halides can be reduced or dyed with other colloidal metals, as gold, platinum. On the other hand, Biltz has shown that mordanted wool on freshly precipitated alumina form coloured "lakes" with colloidal gold, and with "collargol," so that the assumption of an adsorption-compound appears unnecessary. The formation of "photo-lakes" by the simultaneous flocking out of the colloidal silver components ( $AgX + Ag$ ) by electrolytes cannot be considered as a chemical reduction, nor anything but the formation of an adsorption-compound of silver halide and silver.

#### Influence of Dilution or Size of Grain

The conception that the "latent image" consists also of an adsorption-compound of silver with the unaltered halide readily

explains a large number of peculiarities. We have seen that the resistance to oxidation does not require the assumption of a sub-salt. In particular, the difference of behaviour of fast and slow plates, or generally of different makes, in this respect, can be satisfactorily discussed. Whereas the "photo-haloids" in the hydrosol state are not resistant to destruction by oxidation, this resistance increases with the size of the particles; in other words, the more dilute the mixture is with respect to silver, the greater the resisting power of the latter. A variety of recent researches, among which I may cite those of Schaum and Bellach, of Dr. Mees and myself, those of Dr. Scheffer, and Lüppo-Cramer's, on the influence of the micro-structure of the photographic film on the reactions occurring in it, have shown that the "grain" is the fundamental unit which has to be considered. From the adsorption theory we see that in large grains with small proportion of silver the resistance of the latter will be greater than in small grains containing a larger proportion. The same reasoning leads to an explanation of the difference in behaviour with retarded development of the lesser exposed and more exposed portions of the plate. Furthermore, according to Lüppo-Cramer, the selective action of persulphate on the high-lights of the negative is to be referred to the greater content of these, after fixation, in silver.

#### The Image After Fixation.

The image after fixation has usually been conceived as consisting of pure silver (save for organic stain). The rôle of adsorbed oxidised material we will only briefly refer to, in so far as it produces in some cases tanning, amounting to a perceptible relief. But that there is a further constituent is shown by the possibility of development after fixation. It appears probable that the image after fixation consists to some extent of "photo-haloid," the proportion of halide now being small. This is left behind by silver halide solvents. Oxidation agents alone remove part of the silver, leaving a second "skeleton" of photo-halide, rich now in halide, poor in silver. This is only removable by the combination of a silver-dissolving and a halide-dissolving substance, such as a mixture of sulphocyanide and nitric acid, thiosulphate and ferricyanide, or other oxidiser, or concentrated solutions of the halides.

In the more rapidly developed shadows we should expect the silver to be deposited in a less colloidal form than in the "high-lights," in consequence of which the latter exhibit the tendency to adsorption in a much more marked degree.

The existence of the photo-halides in the developed image, as of silver in the more colloidal form, would therefore be the more marked, the slower the development. This is in agreement with the formation of coloured images by restrained development with gas-light emulsions. Already nearer the soluble

condition, their fine division facilitates the process of adsorption, and we may expect the finished image to be more susceptible also to toning operations. The image in these behaves just as in plainly fixed P.O.P. The various colours are not so much to be attributed to the influence of the size of particles as to the distribution of ultra-microscopic particles in the "clumps," as experiments on the change of colour with swelling and drying suggest.

#### Adsorption-Compounds in the Completed Photographic Image.

That the image on P.O.P.—the photo-chloride—is an adsorption-compound of silver and halide follows at once from this view. It has been further suggested by Mr. Blake Smith ("B.J.," 1908, p. 141) that in the sulphur toning of bromides, silver sulphide is formed which forms a "lake" with the halide. He considers the red colour is due to an image with much chloride remaining. It may be mentioned that Pauli has shown that in the presence of gelatine—acting as "schutz-colloid"—silver sulphide is formed in the colloidal state, and that this forms adsorption-compounds both with silver and with silver chloride.

It is worth remembering that the different "modifications" of silver halides described by Stas are only modifications of the gel state, complicated by the presence of adsorbed electrolytes. Changes of colour and appearance in photographic images must not be rashly attributed to chemical alterations in the narrow sense, leading to a search for a definite reaction and a comfortable formula. The mutual protective action of the components in an adsorption-compound is shown again in the compound of chromium with silver halide formed in the process of chromium intensification due to Messrs. Piper and Carnegie. One other point about the colloidal forms of the halides and the silver + halide adsorption-compounds is their relatively greater "covering power" or opacity to light.

#### Adhesion and Surface-tension.

Having recognised that, in adsorption, the forces holding the substances together differ in some degree from those known as "chemical," it becomes of interest to consider what it is that holds the masses of substances together, whether alike or unlike. There is a common distinction made between adhesion and cohesion: adhesion for the sticking together of unlike bodies, cohesion for the force keeping the particles of like bodies together. This distinction is probably unnecessary. In both cases we are dealing with molecular forces acting only at extremely short distances. The same forces are responsible for the phenomena of capillarity and surface tension in liquids, the surface tension phenomena being obvious only at a bounding surface of a liquid, which then acts as if provided with a skin, owing to the "pull" being toward the interior of the liquid. Owing to the existence of this force, the natural tendency of a liquid is to assume a spherical surface, or generally to take a form offering the least free surface.

When a fluid is flowed over a plate, the existence of this skin becomes evident at the edges of the plate. It hardly needs emphasis that the chief function of cleaning is to remove substances such as grease, which, not "wetted" by the coating fluid, would lead to a retreat of the coating substance where they occur, and prevent the molecular contact essential to the adhesion of the film. In all coating operations it is essential to

prevent local alteration of the surface tension. Increase of temperature at a point will modify the surface tension, making the surface film weak, so that it is pulled out by the greater tractile tension of the unaffected portions of the skin. If a wet plate is sensitised, some of the ether may dissolve on the film differentially, setting up disturbances due to the difference of surface tension, which, if not equalised by careful washing, may be perpetuated as dark streaks when the plate is developed. These disturbances are well seen when camphor is placed on the water. It usually dissolves more rapidly at some points than at others, thus relatively weakening the surface of the water at that place, and so is dragged about in a capricious manner.

#### Adhesion of Solids.

In all cases of the adhesion or cohesion of substances, in order to obtain the full action of the molecular forces, they only come into play at infinitesimal distances, it is essential that the surfaces be in optical contact. Geometrically considered, they must be *enantiomorphous*—i.e., mirror images of one of the other. In considering the theory of "sticking," one must take into account the adsorbed layer of air normally present on all surfaces. One theory is that adhesives, cements, etc.—remove this, aided by pressure, and that the surfaces to be united a partial vacuum is created, atmospheric pressure keeps the joined parts together. Usually, we can distinguish three cases of adhesion.

- (1) Two soft or tender surfaces, which mould to each other.
- (2) One hard, undeformable surface, and one soft or ablen one. Realised in all photographic coatings.
- (3) Two hard, undeformable surfaces, united by a third substance, the adhesive.

In the case of photographic "coatings," the film to be coated usually acts, whilst wet or unset, as its own adhesive; in some cases, however, a substratum or cement, as in case No. 2, is employed. In all such cases it is certain that over and above the removal of any adsorbed gas or air layer there is a positive attractive action, specific in that different cases require different treatment, and it is on these lines that any true theory of adhesion must be evolved. The forces acting are undoubtedly the same as those in "adsorption." In other words, the same physical principles will have to be considered chemically as well as physically. An example may be cited of the application of colloid chemistry to the loading of paper to prevent the spreading of ink.

Paper pulp is mixed with a solution of beeswax in solution, then alum or aluminium sulphate added and starch. The various components are as follows:—The wax, in colloidal solution, and is coagulated by the electrolyte which is added. The starch acts as a "schutz-colloid," increasing the velocity of the gel formation or coagulation, and giving homogeneous action.

[The existence of elasticity or resistance to deformation of colloid media was instanced in the formation of "colloid grain," and the reticulation of dried bichromated gelatin in general (cf Ch. Gamble, Keith Lectures, 1907).]

In conclusion, it should be mentioned that the very principles of colloid chemistry are only in an embryo and unfixed. But that a unifying discipline of great value for the photographic chemist is to be found therein appears certain. It should help to lessen empiricism in this as in other branches of industrial and applied science. S. E. SHER

AN ECHO FROM THE COLONIES.—"The Australian Photo-Review," writing in its current issue, says: The "British Journal of Photography" has brought out a special "Colonial Number," so named from its contents in the way of articles and reviews of particular interest to readers abroad, and from the fact that it posts a copy of the issue to photographers and photographic dealers to an extra

number of some thousands in British possessions and foreign countries. The issue, which is that of March 27, provides a lengthy list of the many new goods on the photographic market, and its many advertisement pages show the many independent sources of supply at the service of photographers purchasing in England. A remarkable twopennyworth, and puts the 'B.J.' right up on



## BLOCKING OUT NEGATIVES.

[In the current issue of "Process Work," the always interesting monthly magazine edited by Mr. William Gamble for Penrose and Co., is a symposium on the blocking-out of negatives. The writers' opinions, quoted below, are in reply to a querist, who asked for a medium as satisfactory as, but less costly than, the "Photopake" of the Vanguard Company, but it is instructive to note that the replies, which evidently emanate from practical workers, do not confirm the querist's view as to the expense incurred by using "Photopake."—Eds. "B.J."]

Fr "F. H." finds "Photopake" a very expensive item in his business, he must do a very great amount of blocking out, as a little of this medium goes a long way and is most excellent. But I understand from the question that he requires something of a rather coarser nature, suitable for very large work. He will find the following very suitable for this purpose: Methylated spirit 4 oz., gum sandarac 1 oz. Dissolve as much of the gum as possible, leaving what is not in solution at the bottom of the bottle. For use, obtain a small wide-mouthed bottle, an empty photopake bottle will do splendidly, and half-fill it with gum solution. Then add a quantity of lamp black, sufficient to make a thick black liquid of convenient consistency. This mixture has the usual good qualities of the ready-prepared mediums, being easily applied, quick drying, and very firm and durable. Another method is to use Indian ink prepared from the tins obtainable at any artists' depot. The second quality will be amply good enough for this purpose, and come very much cheaper than using the better quality. Upon no consideration use that sold in a bottle-form, or it is likely to prove more expensive than "Photopake." Smash the ink into a fairly fine powder and dissolve as much as possible in a given quantity of water. Then to every half-ounce of solution thus made, add two to three drachms of the gum solution given above, and five or six drops of ox-gall to prevent the mixture from working greasily. So that "F. H." may have a choice of methods, I give below the way to prepare a medium for blocking out, which can be made in a very few minutes, and one that will prove effective. Obtain a 2-oz. bottle and half-fill it with pure alcohol, and add a small quantity of dye known as methylene blue, about as much as can be placed upon a sixpence, and dissolved by shaking. This medium is prepared only when wanted for use. A small piece of Avery's Backing is extracted from the tube upon a china plate and a little of the dye solution poured over it. The two are then worked together, so to speak, with a brush until the mixture is in a suitable condition for use. This medium should prove very

effective and suit the requirements of "F. H.," as a large quantity can be made at a very small cost.—ACME.

"F. H." inquires for something cheaper than "Photopake" to stop out negatives; the reply is "Mogul varnish." To use it, go round the outline with "Photopake," the large spaces can now be filled in with diluted "Mogul," using a "swan quill." To dilute "Mogul" add turpentine or benzole or a mixture of both; the dilution is complete when spread on the negative. It leaves a pale yellow deposit when looked at by transmitted light. This on the top of the negative deposit effectually prevents any light action. Diluted "Mogul" has another advantage, that if the fine lines on the negative are disregarded and covered with diluted "Mogul" they can, when dry, easily be closed or cut, using a graver or a needle stuck in a penholder, or purchase a pennyworth of gramophone needles; one obtains so many for a penny that when worn it is cheaper to throw away than regrind. New work can be inserted upon a collodion negative upon a coating of diluted "Mogul." Diluted "Mogul" is very superior to stopping out varnish, as this when diluted is of a blue-black and lets the light through, and if used sufficiently thick to obstruct light, makes it difficult to obtain sharpness if metal plates or thick paper are used to print upon.—LARKHALL.

"F. H." must have a very large quantity of negatives to block out, as "Photopake" is certainly the best, as also it goes such a long way. But a good formula is: Vegetable black ½ oz., methylated spirit 20 oz., gum sandarac 1 oz. To dissolve the gum, place it into about 2 oz. or 3 oz. of boiling water and then mix with the others; afterwards, if it is not opaque enough, add more vegetable black. This is an inexpensive formula, not only in materials, but it is a great time saver, as it dries very quickly. But I should like to suggest to "F. H." to still use "Photopake," just outline the negative with it, then cut a mask out of some red or orange paper, or even black, and paste it over the parts required to be white. This is inexpensive, and if the corners of the paper are only stuck to the negative, the same paper may be used again for smaller ones.—TRICOLOUR.

## RECENT DEVELOPMENTS IN ELECTRIC LIGHTING.

[The following article, from the current issue of "Nature," provides a review of the present position of the various types of electrical subject is of such importance to photographers fitting their premises conveniently summarised by Mr. Solomon may be recommended for careful study.—Eds. "B.J."]

An article which appeared in "Nature" last June the present writer reviewed briefly some of the improvements which had been made and promised in incandescent electric lamps. At the time that the article was written matters were in a condition of considerable uncertainty on account of the great number of new developments which had been announced, the value of which was, to a very large extent, uncertain. The frequent announcements of these improvements, which were appearing almost weekly, led electrical engineers to feel considerable hesitation in adopting any new lamp for fear that it should be superseded almost immediately after its adoption. Since that time the position has become much quieter, and during the past months the solid progress which has been made in the introduction of these lamps on the market has been remarkable. Now that considerable experience has been obtained of the working value of different types of lamp, a favourable opportunity is afforded of making a general survey of the present position and prospects for the future. At the same time, a similar survey may be taken of the conditions existing in a field of arc lighting, in which the developments during the past two or three years have been almost equally noteworthy.

### Incandescent Lamps.

As was pointed out in the article referred to above, the only two lamps which appeared to merit particular attention were the tungsten and the tantalum lamp. The tantalum lamp has now been in practical use for about two years, and has not undergone any appreciable modification since the time of its first introduction. Difficulties of producing a satisfactory lamp for use with alternating current are still not overcome, and the difficulties of drawing tantalum wire sufficiently fine to enable either low candle-power, low-voltage, or medium candle-power high-voltage lamps, to be produced still await practical solution. It is true that the range of candle-power with low-voltage lamps has been extended by the introduction of a 16-candle-power lamp, and that announcements have been made from time to time that a satisfactory solution has been found for the manufacture of high-voltage lamps. The fact remains, however, that high-voltage lamps are not yet produced commercially. The tantalum lamp has satisfactorily proved its value for electric lighting. Although the general results obtained seem to show a comparatively short average life of about 700 hours, and though the efficiency is approximately only half that of the newer tungsten lamp, it is apparent that this lamp will have

to be reckoned with for some time to come as a very important factor in the field of incandescent electric lighting. Though it may not be able to compete on the score of efficiency with the tungsten filament, yet the greater strength of the filament must always operate to counterbalance these disadvantages.

The tungsten lamp, ever since its commercial introduction into this country under the name of the "Osram" lamp by the General Electric Company, has made rapid strides in popularity. Considering that the lamp has only been on the market for a matter of about nine months its very widespread use at the present time must mark almost a record in the development of electric lighting.

In its practical performance, also, this lamp has fulfilled, or more than fulfilled, the hopes that were raised for it before its introduction. Beyond the blackening which occurs with a small percentage of these lamps, the general experience is that a life of 1,000 to 1,500 hours is obtained almost without any decrease in the initial efficiency of about  $1\frac{1}{4}$  watts per candle. This blackening appears to be a defect in manufacture, which will doubtless be soon overcome, since it is not a characteristic of all lamps, but is only observed in a very small percentage, which generally show this defect almost immediately they are put into use. The tungsten lamp has hitherto possessed the disadvantage, when compared with its tantalum rival, that it could only be used in a vertical position, but a modified type has just been introduced which can be burnt at any angle. On the other hand, the tungsten lamp has the advantage that it is suitable for use on either direct or alternating-current circuits. Up to the present the range of voltage for which the lamps can be made is practically the same as that for the tantalum lamps—viz., voltages up to 130—but the tungsten lamp has not yet been made for voltages of 100 in such low light units as the tantalum lamps, the lowest at present obtainable being approximately thirty candles. Tungsten lamps have also been made, but not yet commercially introduced, for high voltages (200 and above), and the introduction of a 40-candle-power lamp for 200 volts is promised very shortly.

It is yet too early to say precisely what will be the effect of the introduction of these two lamps on electric lighting in general. At present, for the most part probably, the lamps have been used for the lighting of factories, shop windows, and public or semi-public places where costs of lighting are very closely considered and artistic effects are of secondary importance. It is perhaps not safe to argue from the success which the lamps have attained in the past year for these purposes that they will meet with corresponding success in private house lighting, especially as in that case the size of the light unit becomes of much greater importance. It is more than probable, however, that the general public will welcome the higher light units if they provide them, as these lamps do, with a means at the same time of actually reducing their lighting bills. The present writer, for example, has substituted two 32-candle-power Osram lamps for a single 16-candle-power carbon filament lamp, and finds that it has resulted in actual saving in money, in spite of the fact that four times as much light is obtained. It is noteworthy that the fears which were expressed that the difficulties in running lamps in series would very seriously affect the introduction of metal filament lamps do not appear to have been well founded.

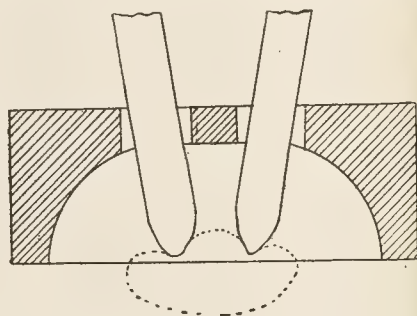
Beyond these two types of lamp the development in incandescent lighting has been slight. The exceedingly interesting discovery (from a scientific point of view) by the General Electric Company in America of a method for radically altering the nature of the carbon filament unfortunately came too late to have any practical effect. These so-called "metallised" filament lamps, had they come four or five years ago, would have been welcomed as a great step in advance, but, coming as they have at the same time as the metallic filaments, are practically doomed to failure, since they possess the same disadvantages, and, in addition, can only be worked at an efficiency of  $2\frac{1}{2}$  watts per candle. The same may be said of the Nernst lamp, which is almost bound to give way in the sphere of incandescent lighting to metal filament lamps. It is possible that the Nernst lamp will find a sphere of its own for intermediate lighting where light units of 100 to 200-candle-power are required, but it is much more probable that it will be ousted also from this field by the high candle-power metal filament lamps.

#### Arc Lamps.

The remarkable change in the prospect of incandescent lighting which has been effected by the introduction of the metal filament lamp has been paralleled by a similar change in arc lighting by the

introduction of flame lamps. The gain in efficiency in a metal filament lamp over a carbon filament lamp is approximately three times, an almost similar gain is obtained in a flame lamp over an ordinary open type arc lamp. The idea of introducing chemicals into the flame in order to colour the flame is an exceedingly old one, but the practical solution was not obtained until Bremer brought out his mineralised flame carbons. The carbons introduced by Bremer are mineralised carbons, in which the flame-producing material is intimately mixed with the material of the carbon rod itself. Alterations were later effected by the various carbon manufacturers, which the flame-producing material, instead of being introduced into the main body of the carbon, was only introduced into the core. The latter type of carbon is by far the most common, but carbon of the Bremer type are still in use, and have been considerably improved recently by M. Blondel, who claims to have succeeded by his employment in producing a far more efficient lamp than the ordinary flame lamp.

Flame carbons are constructed to burn with the carbons, arranged vertically above one another, as in ordinary lamps, but the general construction is to arrange the carbons side by side, inclined to one another at an angle of about 15 degrees, as shown in Fig.



The arc, which balances between the tips of the carbons, as shown in the figure, is spread out into a fan shape, and kept down at the tips by the use of a magnetic controlling field. Immediately above the arc, both in the lamps for vertical and inclined carbons, is placed an inverted cup, the object of which is to prevent the free uprush of currents of air and maintain the carbons always in an atmosphere of inert gases, thus considerably lengthening their burning hours. The cup is consequently given the name of an economiser.

The arrangement of the carbons in the inclined lamps causes a very large proportion of the light to be thrown vertically downwards, which is certainly not a desirable condition for the lighting of spaces, involving, as it does, hanging the lamps very high if illumination is to be obtained. The rich golden-yellow colour of the light, though useful for the purpose of display, is also to be reckoned as a disadvantage of these lamps. The colour is, however, very far different from that given by the incandescent lamp, and has not been found a very serious drawback. Flame arcs of other colours, for example, white and pink, can be produced, but the volume of light in these cases is greatly below that of the yellow arc. The flame arc lamp has an efficiency of approximately 0.4-0.5 watt per mean spherical candle, which is two or three times as good as that of the ordinary open type arc. The high cost of maintaining the carbons, which are expensive to make and burn rapidly, is much more than compensated by the low cost of power for a given amount of light. In the Blondel lamp the carbons which are used are of larger diameters, and are arranged vertically one above the other. This has the advantage of giving a better light distribution, and it is claimed that the mean spherical candle-power is nearly double that of the ordinary flame arc.

Whilst the flame arc has been rapidly developed in Europe, it has met with but little success in America, on account of the fact that in America the cost of labour for frequent trimming counts for more than it does in this country. For this reason the use of flame arcs in America has become almost universal, in spite of the fact that they only have about half the efficiency of the ordinary open type arc. To meet these somewhat special conditions, experimental work has been carried on during the past two or three years by M.



etz and the General Electric Company of America on the design of a long burning flame lamp. The "magnetite" arc, as called, which is the result of this work, utilises electrodes, composed chiefly of magnetic oxide of iron. In the latest electrodes, iron oxide, which produces a more intense light in the arc than iron oxide, is used, but iron oxide is still employed to give the electrodes conductivity when cold. The actual mixture contains also chromium, but this plays a purely secondary part in steady-rate at which the other oxides are evaporated.

The lamp is constructed with the magnetite electrode as the negative and a solid copper electrode as the positive. In place of copper alloy is being introduced. The arc has all the characteristics of an arc, but possesses some peculiarities due to the fact that the energy-producing material is contained only in the negative electrode. Its efficiency, from figures which have been published, appears to be in the neighbourhood of 0.8 to 1.0 watt per candle, from which it may be seen that it is a little more efficient than the ordinary arc and twice as efficient as the ordinary enclosed arc, which is its greatest competitor in America. The electrodes, when used long, are stated to have a life of 150 hours, which is as long as more than similar sized electrodes in enclosed lamps. It may therefore be seen that the magnetite arc is likely to prove a considerable advance on the enclosed arc, and where economical conditions determined the use of this lamp it is likely to be superior to the magnetite arc. It cannot, however, at present compete with the ordinary flame lamp, where the cost of trimming is not an important factor.

### Vapour Lamps.

It may be said in relation to the development of the mercury lamp. This type of lamp, which has been developed by General Hewitt in America, has not met with any extended use on account of the exceedingly unpleasant colour of the light which it gives. Though in some circumstances this may not prevent the use of this lamp, there is no doubt that it will always seriously limit its use in competition with pleasanter coloured illuminants. Efforts have been made to improve the colour by introducing other materials such as metals of the alkali group, into the tube, but these have hitherto proved unsuccessful. It is stated, however, that a marked improvement has been effected by the firm of Heraeus, Germany, by adopting quartz tubes instead of glass tubes, and the temperature at which the arc is run up to very much higher limits. By working the lamp at such a current density that the internal pressure in the tube is approximately one atmosphere, it is stated that the efficiency of the lamp is more than doubled, and a continuous spectrum is added to the line spectrum of the lamp, thus giving the light a quite pleasant and almost normal colour. These quartz-tube lamps have the additional advantage under the conditions of working the length of tube for a given light output is very much less than when glass tubes are used. The general introduction of these lamps is promised for this year. It might also be made to one other type of electric lamp as during the past year come into commercial use—namely, the tube lamp. This lamp is simply an ordinary vacuum tube of small length, and operated at a very high voltage. The tubes, of 1½ in. diameter, can be made up to 200 ft. in length, and are put up in position by welding together short lengths of tube, the energy supply being obtained by means of a transformer the terminals of which are connected to graphite electrodes at each end of the tube. The essential feature of this lamp is the method which has been adopted to overcome the difficulty that the vacuum in the tube is lost as the lamp burns, owing to the absorption of gas by the electrodes. In order to maintain the vacuum constant a most ingenious valve is employed. The main tube communicates by means of a side branch with the outer air, this branch tube being sealed by a carbon plug covered with mercury. The level of the mercury is altered by the rising or falling of a float; in one position of the float the carbon plug is completely covered, in the other it is uncovered. The movements of the float are controlled by a lever connected in series with the primary of the transformer of the tube. When the vacuum falls the conductivity of the tube increases and the primary transformer current rises; this lifts the float and causes the mercury level to fall, uncovering the carbon plug and allowing a little air to filter into the tube. The conductivity of the tube is thereby decreased, the current falls again, and the porous plug is again completely

covered with mercury. It is stated that this valve, which operates normally about once a minute, maintains the vacuum in the tube, which is in the neighbourhood of 0.1 mm. of mercury, constant within 10 per cent.

The only installation of this lamp in this country is that in the courtyard of the Savoy Hotel, and those who have seen this will probably agree that the light represents in many respects the ideal form of artificial lighting. The colour of the light given by the tube depends upon the gas which it contains, and is pure white for carbon dioxide, slightly pink for nitrogen or air. Nitrogen is stated to be twice as efficient as carbon dioxide, and slightly more efficient than air. When it is desired to operate the tube with either of these gases the open end of the valve is connected to either a phosphorus tube (to extract the oxygen from the air drawn in) or to a gas apparatus generating carbon dioxide by the action of acid on marble. The efficiency of these lamps is difficult to determine, but appears to be in the neighbourhood of 1.6 to 1.8 watts per candle.

It is interesting to note that the improvements described above in incandescent and arc lamps have once again brought electric lighting on practically the same level for cheapness as gas lighting. The introduction of the gas mantle gave gas lighting so great a superiority on the score of cheapness that for a great many years it has only been possible for electricity to hold its own on account of its many other advantages. Just as the ordinary gas mantle beat the carbon filament lamp, the high-pressure gas-mantle systems competed on an equal, or even on a slightly better, basis with arc lighting. The whole complexion which appears is now changed, since the 1 to 1.5 watt metal filament lamps can compete with the ordinary mantle for small lighting, and flame lamps are superior to the high-pressure gas lamps. It must be remembered that, from a scientific point of view, the efficiency of electric lamps is vastly superior to any type of gas lamp, the main cheapness of gas lighting being entirely due to the difference between the cost of power delivered to the lamp in the form of gas and in the form of electric energy. It is interesting to remark that, whereas the improvements in gas lighting have been effected by departing from an incandescent flame to an incandescent solid, the improvements in arc lighting have been obtained by a move in exactly the opposite direction. MAURICE SOLOMON.

### DEATH OF MR. HENRY LOMB.

CAPTAIN HENRY LOMB, one of the original partners in Bausch and Lomb, one of Rochester's foremost citizens, and a veteran of the Civil War, died on June 13, at his summer home at Pittsford, N.J., in his eightieth year.

Henry Lomb's name is, of course, associated all over the world with that of John J. Bausch, in company with whom he founded the Bausch and Lomb works. The present great works, however, started from a very small beginning, and the first days of the founders were full of difficulties, difficulties which were at last overcome by persistent courage and effort.

Henry Lomb was born in Burghaun, Hesse-Cassel, Germany, November 24, 1828. He reached America in May, 1849, and came directly to Rochester. He met Mr. Bausch and the two men started a little optician's shop, renting half a show window in the gallery of Reynold's Arcade. Captain Lomb had saved \$60. He lent his friend this sum and it was put into the business, the small beginning of the great industry. It was agreed that as soon as the business warranted Mr. Lomb should join the firm as a half-partner. It was in 1855 that Captain Lomb's active association with the firm began. At first Mr. Lomb attended to the business in Rochester, while Mr. Bausch visited the neighbouring towns. A little later Mr. Lomb learned to fit eyes, and he, too, took to the road.

Little by little the business of the firm increased, but it was still struggling hard when the Civil War broke out. It was a severe sacrifice for the young partner to leave the business, which was just getting on its feet. But here, as elsewhere, Captain Lomb never hesitated when it was a question of duty. On April 23, 1861, he enlisted in Company C, 13th Regiment, New York State Volunteers. He was elected first sergeant, promoted to first lieutenant, and in 1862 was promoted to be captain of the company. With his company Captain Lomb participated in many of the fiercest battles of the Civil War, and time after time showed distinguished bravery.

Probably no man in all Rochester will be more universally regretted,

or has, in the quiet, unostentatious way which was characteristic, done more for Rochester, its institutions, and its people than Henry Lomb. Captain Lomb, as he was affectionately known, was a man of the most quiet, retiring disposition, but no man was more of a philanthropist or more willing to aid distress.

## Exhibitions.

### THE INTERNATIONAL EXHIBITION IN THE NEWCASTLE ART GALLERY.

A collection of pictorial photographs, representing the work of the most distinguished pictorial photographers of the world, was recently opened in the Laing Art Gallery, Newcastle-upon-Tyne, under the auspices of The Laing (Municipal) Art Gallery Committee of the Corporation of Newcastle-upon-Tyne.

This collection is one of a series of special exhibitions illustrative of the various schools of British and foreign painting, etchings, engravings, etc., and it is an interesting feature that the committee of the Laing Art Gallery have thus recognised the important educational value of pictorial photography. Of course, in an exhibition of this character, which was international, and by invitation only, it was necessary that the compilation of a suitable list of exhibitors, to be invited to contribute work, should be undertaken with the greatest possible care, and in this work the Curator of the Laing Art Gallery was assisted by a small committee, Messrs. David Blount, Walter S. Corder, and Arthur Payne, who were asked by the Northumberland and Durham Federation of Amateur Photographers to undertake this work. The exhibitors were given a free hand as to the pictures they selected to be hung, and in some instances it is very interesting to note that they have not sent their most popular work.

The following is a list of the exhibitors with the number of their exhibits:—

British School.—J. Craig-Annan, 7; Mrs. Barton, 8; W. Benington, 3; David Blount, 8; Reginald Craigie, 1; W. Crooke, 10; F. H. Evans, 6; C. F. Grindrod, 6; A. Horsley Hinton (the late), 4; F. Hollyer, 5; Charles Job, 6; A. Keighley, 6; Percy Lewis, 4; Right Hon. Viscount Maitland, 2; F. J. Mortimer, 4; J. C. S. Mummery, 6; J. Cruwys Richards, 3; W. A. Stewart, 6; J. C. Warburg, 6; H. Vivian Yeo, 7.

American School.—C. Yarnall Abbott, 5; John Beeby, 6; Alvin Langdon Coburn, 10; F. H. Day, 1; Gertrude Käsebier, 7; Mrs. Eva Schütze, 7; Miss K. S. Stanbury, 5; Mrs. Mary Stanbury (the late), 3; Edward J. Steichen, 10; Alfred Steiglitz, 10; Miss Mathilde Weil, 6; Clarence H. White, 10; Baron A. de Meyer, 10.

French School.—René Le Bégue, 5; Maurice Bucquet, 6; Robert Demachy, 6; C. Puyo, 4; René Michan, 3; Vicomte P. de Singhy, 2. German School.—Rudolf Dührkoop, 12; Albert Gottheil, 6; T. and O. Hofmeister, 12; Ernst Müller, 6; Otto Scharf, 6.

Austrian and Hungarian School.—Dezső Feledi, 5; Heinrich Kühn, 7.

Swiss School.—Fred Boissonnas, 3.

Italian School.—Dr. E. G. Boon, 6; Guido Rey, 2.

Belgian School.—Charles Gaspar, 6.

The total number of pictures is 330, and they are hung upon the walls and on screens in Galleries A and B. The American section has the dignity of a room to itself, and these pictures are delightfully arranged upon the walls, that have been covered with a soft grey coloured sacking, by Mr. Alvin Langdon Coburn, who travelled down to Newcastle on purpose to do this work. The remainder of the exhibits are hung upon walls that are of an ugly reddish plum colour, and principally on this account do not look so attractive as the American section. It would have been an improvement if these walls had been covered with brown paper before the pictures were hung.

The exhibition has attracted considerable attention, both from the local artists and art critics, as well as from the photographers, and it is very interesting to note the opinions of those visitors. Some of the photographers admit that they do not understand much of the work that is shown, it is so very different from what they have been accustomed to expect in a photograph. Others go into raptures over the more eccentric pictures, and talk learnedly of tone values, texture, composition, feeling, etc., until one begins to wonder how many of them are "poseurs."

The opinions of persons who are outside photography but interested in art will appeal most to the readers of a photographic journal. Therefore we may at once say that a local artist of repute, a person referred to the work shown at this exhibition in an unreservedly contemptuous manner. And in direct opposition to this we have an opinion from another artist, Mr. Slater, who is a frequent exhibitor at the Royal Academy, and who is delighted with the high character of the work, and would not hesitate to hang many pictures on his walls to admire as works of art. He thinks the British school is far in advance of the others, though he has many pictures to admire in the other sections, and especially the German and American schools. Another art critic, a lady, is tremendously impressed with the power possessed by the photographer for rendering artistic impressions, whilst we also have Americans admired for the extraordinary success with which they selected a commonplace subject, and so treated it as to produce a beautiful decoration.

Mr. George Hughes, a picture dealer and art critic of reputation in the Tyne, writes us as follows of his impression of the exhibition:—

"The scope of photography would seem to me to lie in its means of expression of what the photographer deems beautiful picturesque, and this discrimination constitutes the artistic value which is the primary value, the mode of expression (in the case the camera) being relative. A walk round the exhibition suggests that the main object of many exhibitors appears to be muzzing up a print into as close a semblance as possible of an oil or a mezzotint after a picture by a painter, and herein their weakness lies, as a confession of weakness. The prints may be like an oil or mezzotint, but this is at once to relegate photography to much lower standard than ardent photographers would have it. Photography, I would think, should only be a means of expression of the feeling of its user, and not (however capably done) a means of indifferently imitating work in another medium."

It is only fair to mention that several of the photographers who were invited to contribute work could not do so, for various reasons, probably the most serious omissions being Mr. George Davis and Mr. Malcolm Arbuthnot.

The exhibition will remain open for several weeks, and is open on Monday, Tuesday, Wednesday, and Thursday, from 10 a.m. to 7 p.m.; Friday, 2 p.m. to 6 p.m.; Saturday, 10 a.m. to 6 p.m.; Sunday, 3 p.m. to 5 p.m. Admission free.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents were made between June 27 and 27:—

DRY MOUNTING.—No. 13,255. Process for mounting photographic engravings, or the like, in a dry condition. Julius Neuberg, 65, Chancery Lane, London.

WASHING NEGATIVES.—No. 13,281. Negative washing holder. Henry Rubenking, Junr., 27, Chancery Lane, London.

LEVELS.—No. 13,536. Improvements in optical level indicators, cameras and the like. Charles Percival Truscott, 88, Chancery Lane, London.

GLAZING.—No. 13,592. New or improved process for gelatinizing glazing paper, cardboard, and the like. Armitage and Hill Limited, and Richard Franklin Woodburn, Tower Works, Halifax.

CINEMATOGRAPHS.—No. 13,663. Contrivance to be attached to a cinematograph for the purpose of extinguishing fire in the case of the celluloid films used in conjunction with a cinematograph becoming ignited. Thomas Barrasford and William Faulkner, Chancery Lane, London.

### COMPLETE SPECIFICATIONS ACCEPTED

These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, W.C.

SELF-DEVELOPING PAPERS.—No. 13,835, 1907. Bromide or other photographic paper, printing-out paper, and similar sensitive surfaces.



dered self-developing or capable of being developed (by the application of water only), and at the same time are made non-soluble. The back or unsensitised surface of the paper is supplied with a layer of the concentrated developing mixture containing borax, as a preservative and alkaline constituent, or a soluble salt or boric acid may be used as a preservative, either in an aqueous mixture or in conjunction with some other substance as an additive.

The mixture, which for effective, economical, and commercial reasons, has been found to give good results for ordinary bromide gaslight papers is:—

Metal .....	2 grains.
Hydroquinone .....	5 grains.
Potass. metabisulphite (or soluble acid sulphite) .....	$\frac{1}{2}$ —1 grain.
Potass. bromide .....	$\frac{1}{2}$ grain.
Borax .....	10—20 grains.
Gum or other suitable colloid .....	$\frac{1}{2}$ grain.
Water .....	sufficient to make a thin paste.

The above is suitable for from a quarter-plate to a half-plate size. It will be well understood that the developer must be compounded in varying conditions and various papers or surfaces, and the use of metal and hydroquinone, amidol, eikonogen, or other substances may be used.

The materials, having been ground together and well mixed, may be applied by means of a brush or other convenient device to the back of the sensitised paper, which is then allowed to dry.

When the dry developing composition is used in conjunction with printing-out paper which has only received a fraction of the full exposure, and it is wished to complete the photographic development, the borax of the above formula may be used wholly or in part by boric acid and the proportion of sulphite increased, or the preparation rendered acid by other substances.

Under certain atmospheric conditions, it may be expedient to use as a protective medium for the developer a coating or wash of an arabic or saccharine substance, such as ordinary sugar, in solution, or a mixture of both. The saccharine substance may, however, be used in conjunction with the gum, or other suitable material, in compounding the mixture. A further advantage arising from the use of sugar is that protection is afforded against oxidation and it also has a hardening and stiffening effect. The developer may be applied as a single coating or layer occupying the whole or a portion of the back of the support, or the developer may be applied in bi-part, tri-part, or any other desired manner, the acid and reducing constituents being mixed and applied separately on one part of the back of the sensitive material; the developer or any other alkaline substance can be applied to another portion of the surface, and the restraining potassium bromide may be applied to a third area or part, but otherwise the bromide may be associated with either part of the bi-part division. Another bi-part division that may be used is boric acid, bi-sulphite, and bromide as the reducing agent, and for the other part an alkaline salt such as carbonate of soda. If desired a pigment or colouring matter may be applied between the back surface of the support and the developer, or a separating or protective medium of an impervious nature may be interposed. This medium may be a layer of a resinous material which will soften by heat, and as the resinous material will remain after development it may form a necessary support for dry mounting or for mounting by heat and pressure. An instance of a resinous material suitable for employment, such as shellac or the like may be mentioned. It is often desirable that the adhesive and separating stratum should be soluble, in which case the adhesive stratum may consist of a piece of paper or the like thoroughly saturated with the resinous material, or it may be a thin sheet of gutta-percha, balata, or the like. This procedure has the advantage of allowing the separating stratum with its coating of developer to be stripped off when required, as, for example, in the case of a printing-out paper which has received the full exposure, or when some special treatment is desired. The separate sheet or strip, consisting of a piece of film coated on one side with the dry developer, can be used on any suitable sensitive paper.

Reference is made by the patentee to specification No. 8,911, 1905, nothing in which is claimed in the above. William Fraser Claughton Kelly, St. Albans, Upland Road, Leigh-on-Sea, Essex.

The following complete specification, etc., is open to public inspection before acceptance under the Patents Act, 1901:—  
PHOTOGRAPHING LANDSCAPES.—No. 13,128. Method of and means for taking photographs of landscapes. Neubronner.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Hypo-Alum Toning of P.O.P.

The bath I use (says Mr. H. Jeffreys in "Photography and Focus" for July 7) has the formula: Hypo 3 ounces, alum  $\frac{1}{2}$  ounce, water 1 pint. This contains a large excess of hypo, and can, therefore, be used as a combined toning and fixing bath. Printing is carried to about the same or to slightly less depth than usual, and the print is placed in the bath either with or without previous washing. It immediately turns orange-brown, similar to the colour of prints merely fixed without toning. The tone then gradually changes to an excellent brown, apparently permanent, but I have not had sufficient time to test.

As the colour cools it becomes a purple, which is not altogether satisfactory, then black, and then slowly fades to a yellowish colour. If left in much longer it turns to white paper. There appears to be a quantity of alum unacted upon in the bath, as it also has a hardening effect, so that prints toned in this bath can be glazed without further treatment.

Thus its advantages over gold toning seem to be that:—

- (1) There is no change in tone after removal from the toning bath.
- (2) A bath containing only two ingredients and costing practically nothing, serves the threefold purpose of fixing, toning, and hardening.
- (3) It is extremely simple in use.
- (4) Toning is perfectly even.

Its disadvantages are:—

- (1) Only one tone is really good, which is the brown. The purple-brown is also good, but beyond that the tones are poor.
- (2) It is slow in action, although not excessively so, the brown being obtained in about ten minutes. However, this is more than compensated by the fact that only one bath is needed.

## New Books.

"Le Procédé Ozobrome." By E. Coustet. Paris: Office of "Photo Revue." 60c.

M. Coustet, in his historical and theoretical introduction, cites a number of processes which really are irrelevant to his subject proper, and his only conclusion from them is that ozobrome is a most misnamed process, having nothing to do with ozone or bromine. However, these considerations do not delay him long from dealing with the practical working of the process. This portion of the volume gives useful instructions in the making of carbon prints and enlargements by Mr. Manly's most valuable process, and it adds some chapters on other applications of ozobrome, such as lantern-slides, intensification, gum-ozobrome, collotype, and oil. Apparently the manual was in the press at the time of Mr. Manly's recent introduction of the acid bath method, of which no mention is made.

"One Thousand Ways and Schemes to Attract Trade." By Irving P. Fox and B. A. Forbes. Boston, U.S.A.: Spatula Publishing Company. 4s.

The authors of this volume are connected with two technical publications—one, "The Spatula," dealing with the drug trade.

Their compilation consists of a collection of numerous ideas, "business pointers," drawings, and typographic displays, which can be used by a retail dealer to attract trade. Though many of these recommendations apply specifically to the retail chemical trade, many other shopkeepers might take advantage of them, and would often find occasions when the original devices for calling attention to an article would prove of service and profit. Apparently the American advertiser has no scruples as to the methods which he may adopt in thus obtaining publicity to an article of commerce. Thus our authors mention, among others, in one place the instance of a soap advertiser who booked a whole front row of stalls at a theatre and sent to fill them twenty bald-headed men, each with the words "So-and-So's soap" painted on his scalp. London is named as the scene of this bright gem of the advertiser's art, though we should like to have chapter and verse for the incident. This, however, is not to say that many of the recommendations are of a similar sensational character. Most of them are not, and a professional photographer or photographic dealer might do worse than turn over the leaves of the book in a spare hour. The publishers intimate that British stamps are accepted in payment.

"Kunstliche Gebirgsphotographie." By Dr. A. Mazel. Translated by Drs. E. Hegg and C. Stürenberg. Second edition. Berlin: Gustav Schmidt. M4.50.

Mountain photography has a great attraction for the Germans, as witness the popularity of a little book on the subject by Herr E. Terschak and the issue of the present second edition of Dr. Mazel's larger work, while one may also see evidences of the same love of the stupendous in scenery in the numbers of cameras taken every year to the Tyrol by German tourists. It is not surprising, therefore, that a lengthy treatise such as the present one should obtain a greater circle of readers in Germany than in the country of its author. Dr. Mazel, as a past president of the Geneva Photographic Society and member of the Swiss Alpine Club, may claim to bring both photographic and mountaineering experience to his subject. It is evident, too, that the æsthetic aspect of Alpine and other mountain photography is one which strongly appeals to him, and one in which he is desirous of instructing others. The selection of apparatus, plates, iso screens, and other essentials is the theme of his earlier chapters, and it is interesting to find him most emphatic in directing the use of orthochromatic plates. His particular preferences in this direction are of less interest to the English reader, since he selects only from Continental makes. The major portion of the volume, however, is taken up with chapters on the essential features of Alpine and other mountain landscapes, in the course of which the author gives several diagrammatic sketches of the composition to which one subject or another lends itself. If this advice savours of the dogmatic, it should, nevertheless, help the beginner in mountain photography to avoid the confused assemblages of pines, rocks, and mountain tops which make up so many of the photographs hurriedly taken in the Alps. The exceptional opportunities of early morning and late evening, both in summer and winter, are emphasised by Dr. Mazel, who in a later portion of his book advises on the planning of a mountain tour. A number of half-tone plate illustrations from the author's negatives give point to the many practical suggestions, and are a fitting appendix to a most excellent volume.

"THE TELEPHOTO QUARTERLY."—No. 2 of Captain Owen Wheeler's quarterly, "T. Q.," comes to us pleased at the good reception—quite deserved—of its first issue. In the current number Mr. Clifton has some useful notes on the telephoto lens in natural history, and the editor's article on instantaneous telephotographic work with the hand camera contains some timely advice from the writer's practical experience. "T. Q.," as an organ of its special branch of work, is evidently living up to one's expectations of it.

"LEITFADEN DER LANDSCHAFTSPHOTOGRAPHIE."—The third edition of this work on pictorial landscape photography reaches us from the press of Herr Gustav Schmidt, Berlin. The author, Herr Loescher, may be congratulated on the practical approbation conferred upon his work by the call for three successive editions within the space of a year or two. And equally his readers may be commended for taking to heart the teachings of a worker who puts good photography in the place of honour and abstains from glorifying the spurious products of one "faking" method or another as "art in photography." Herr Loescher's volume is among the soundest and sanest text-books of outdoor photography,

and text and illustrations (both by the author) propound a sane practice.

"THE PHOTOGRAPHIC ANNUAL."—Since reviewing Mr. Dawbarn and Ward's new reference volume last week we received the "cloth" edition, which, in addition to being strongly bound, is interleaved with thin blank pages, on which additional "figures, facts, and formulæ" can be written. The price of the cloth edition is 2s. net.

## New Apparatus, &c.

The Welborne Piper Photographic Clock (New Model). Sold by Butcher and Sons, Camera House, Farringdon Avenue, London, E.C.

In the new pattern of this piece of apparatus a number of improvements have been made which further fit the clock for all the purposes of timing photographic operations, in addition to permitting its use for ordinary domestic purposes. The range of movements of the clock is a wide one, so wide, in fact, that some little study



various keys is necessary before a specific use can be made of the clock. However, an hour spent in following out the instructions given by the makers will render the worker familiar with the movements, and the clock will be found to be extremely convenient for use for a large variety of photographic purposes. In preparing to detail the various ways in which the clock may be set, we will briefly explain the function of the adjustments shown in the diagram by the letter A to K.

A, lever which causes the gong to ring every minute (M), or every hour (H, on right).

B, lever controlling the striking of the gong each minute (M). If pressed back, gong does not sound, and clock acts as silent piece. Pull forward to allow gong to sound.

C, lever putting alarm-signal out of action.

D, lever transforming rings of the gong into clicks.

E, lever which, when raised, stops the clock when the hand comes to zero.



starts clock which has been stopped at zero by pushing up E.  
stop lever arresting clock either permanently or as long as it is  
down, according to position of  
which is set to T (time) or B (bulb), according as clock is  
ed to be stopped by pressing down lever G and releasing it,  
pping down lever G.

brass nozzle for starting and stopping clock by pneumatic  
re.

lunger for working shutter at same time as clock.

facilities given by the clock can best be summarised by saying  
the clock will time both short and long periods either by  
tion of the seconds', minutes', or hours' dial, or can be  
ed to indicate the end of any pre-arranged period by a gong.  
various uses to which it can be put in this way may be best  
ed by quoting from the portion of the instruction dealing  
ne photographic uses of the clock.

ing Quick Development in Light.—Use the time-setting and  
atic stop, timing from zero, and start clock by pressing the  
the developer is poured on. When the last full minute has  
l, reset the automatic stop, and the clock will again stop at  
ady for the next operation.

ng Quick Development in Darkness.—If developing for an  
short number of minutes, set the clock just as described, and  
y the bell alone. If parts of a minute are to be included,  
e clock at the right number of seconds before zero so that the  
development may be denoted by the sound of the bell.

ng Slow Development.—If development occupies more than  
ten minutes, it is convenient and quite sufficiently exact to  
y the approximate method.

loping by the Watkins System.—Use time-setting and auto-  
top, starting clock from zero as developer is poured on. The  
t the image first appears press the ball and so stop the clock.  
ff the time, and then relax ball and restart clock. The time  
arance multiplied by the Watkins factor for the developer  
ll give the total time of development required. By using the  
e way described, the time of appearance can be determined  
curately, and the stoppage of the clock for a second or so  
ne time is being read is of no consequence.

oping Slides and Prints.—If many prints are required from  
ative, uniform results can be easily secured even with a very  
veloper, as it is easy to time to a second with the aid of the  
Using the automatic stop and time-setting and treating one  
t a time, it is easy to develop at the rate of one print per  
with a developer that completes its work in about half a

ng Exposures with a Shutter.—Set the clock to "time" or  
according as the shutter is set, and stop the clock with the  
hand in a convenient position. If the balls are pressed  
eously, the clock and shutter work exactly together, and  
e can be timed to a nicety. With the aid of a Y junction  
es of clock and shutter can be linked together, so that both  
ated with one ball, but it is generally sufficient to press the  
ts together in one hand. The co-operation of shutter and  
of great value in the following cases:—

When the subject is liable to move, use time-setting, and on  
st sign of movement press ball and so close shutter and stop  
The exact time can then be read, and you can judge whether  
posure be sufficient. Pressure on the ball must be sustained  
the time is read.

When enlarging and it is necessary to screen or "dodge" the  
ement, use time-setting and proceed exactly as when develop-  
darkness. You can then devote your attention to screening  
largement without looking at the clock at all.

When owing to vibration of traffic, etc., intermittent expo-  
sures to be given, if a shutter of the "automatic" or "ever-  
rarity is used, and the clock and shutter are both set to  
you can by pressing the ball simultaneously open shutter  
rt clock, and by relaxing the ball close shutter and stop any  
e of times during the exposure, and the total time of expo-  
ill be accurately recorded by the clock regardless of the  
e of stoppages. This is a most valuable application of the  
especially in photo-micrographic work, and if the shutter  
ed in front of the source of light, it can be used without  
ur of vibration due to its action.

When making a number of lantern slides from one negative

by reduction in the camera, with ball-setting and automatic shutter  
a series of exactly equal exposures can be given as rapidly as the  
plates can be changed. This saves much time, and ensures uniform  
results.

Toning and Similar Operations.—When it is desired to put a  
number of prints through some solution for a certain definite number  
of minutes, use a dish that will hold as many prints as there are  
minutes in the time of the operation, and number the prints in  
pencil on the back. Then, commencing with No. 1 print and working  
upwards, put one print in the dish every time the bell rings until the  
first print has been acted upon sufficiently. After that take out  
the lowest numbered print in the dish and put in a fresh one every  
time the bell rings. If a larger dish is used and the prints are  
inserted and taken out in batches of two or three, a much greater  
number can be dealt with in the same time. By working in this  
manner uniform results can be readily ensured.

Timing Washing, etc.—Set the alarm so that it will sound at the  
proper time. By its use you can avoid over or under washing, and  
also waste of water. For short operations taking less than an hour  
the minute alarm is, of course, used.

Automatic Time Exposure.—Set clock and link to shutter as  
described. Set shutter to time and open shutter by hand and start  
clock simultaneously. When clock strikes, or alarm sounds, the  
shutter will close and the clock will stop at the same moment.

Automatic Instantaneous Exposure.—Set clock and link to shutter  
described. Set shutter to time and open shutter by hand and start  
and when clock strikes the exposure will be made, the clock stopping  
and recording the exact moment.

The clock is strongly made, and is evidently able to withstand a  
good deal of ordinary wear and tear. Its price is 42s., complete  
with long length of tubing and pneumatic ball.

## CATALOGUES AND TRADE NOTICES.

BUTTON PHOTOGRAPHS.—A new price list of apparatus and materials  
for the production of button photographs has been issued by the firm  
of Fallowfield, which for years past has kept its clients supplied with  
the latest patterns of goods of this class. Mr. Fallowfield supplies  
cameras, button parts, button machines, and the various forms of  
jewellery in which the button photograph may be finally mounted.  
The list, which is obtainable free on application to 146, Charing Cross  
Road, W.C., is certainly indispensable to those going in for this  
branch of work.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

#### SATURDAY, JULY 11.

Chelsea and District Photographic Society. Excursion to Windsor.  
Aberdeen Photo Art Club. Excursion to Loch of Park.  
Handsworth Photographic Society. Excursion to Bridgnorth.  
Manchester Amateur Photographic Society. Excursion to Grindelford.  
South London Photographic Society. Excursion to Chorley Wood.

#### MONDAY, JULY 13.

Southampton Camera Club. "Ozobroma." H. W. Miles.

#### TUESDAY, JULY 14.

Royal Photographic Society. Ordinary Meeting for the Election of Members.

#### WEDNESDAY, JULY 15.

North Middlesex Photographic Society. "Home Portraiture." A. H. Lisett.  
Denham Outing Print Competition.  
Rugby Photographic Society. Excursion to Brandon and Wolston. F. Betts.  
South Suburban Photographic Society. Portfolio and Print Competition.  
Balham Camera Club. Discussion: "Faulty Negatives."  
Southampton Camera Club. Excursion to Brockenhurst. C. M. Cooper.  
Leeds Camera Club. "Home Made Apparatus." W. W. Manfield.

ROYAL PHOTOGRAPHIC SOCIETY.—The attention of members may  
be drawn to the meeting for Tuesday next, July 14, at which persons  
who have applied for membership since the last ordinary meeting  
will be elected. In previous years this meeting has usually been  
provided by the secretary with some topic for discussion, or has  
had exhibited to it some photographic novelty.

## News and Notes.

MR. AND MRS. SNOWDEN WARD, we hear, are to visit America in the coming winter, where Mr. Ward will deliver a series of lectures, illustrated with photographic lantern slides from Mrs. Ward's negatives. The subjects are to include "Shakespeare at Home," the "Dickens Land," "Chaucer and the Pilgrim's Way," and the "Land of Lorna Doone."

ACCIDENT TO THE REGENT STREET KODAK DEPOT.—Last week a motor 'bus plying between Brixton and Hammersmith plunged on to the pavement when half-way down Regent Street, and crashed into the premises of Kodak, Ltd., bringing down the brickwork of the lower part of the column which forms the left door-post. The accident was due to the omnibus getting in difficulties with a motor brougham, which collided with it in such a way as to affect the steering gear.

PROFESSIONAL REQUISITES.—Messrs. Sichel and Co. advise us that they have just collected the contents of a West End studio, including two studio cameras with suitable lenses, "Sickle" background, stand with four rollers, three backgrounds, accessories, Cooper-Hewitt mercury-vapour portrait apparatus, all of which they have on show at 52, Bunhill Row, and are prepared to dispose of at greatly reduced prices.

THE ANNUAL SOIREE of the Royal Society of Arts was held this year in the Natural History Museum on July 2, when a large number of members and their friends were received by the president, Sir Steuart Colvin Bayley, and spent a pleasant evening in the spacious galleries of the museum. Several programmes of vocal and instrumental music were performed and the function, though perhaps lacking the charm of surroundings of the Botanic Gardens, where the soiree has been held in the past, provided most enjoyable opportunities for the meeting of many persons interested in the industrial and other subjects which the society has made its special care.

AN AUSTRALIAN NATURE-PHOTOGRAPHER, who would appear to have been working contemporaneously with the Kearntons, R. B. Lodge, and Oliver Pike in this country, is the subject of a long and interesting illustrated interview in the current number of our Melbourne contemporary, "The Australian Photographic Journal." Mr. Sidney W. Jackson has seen life in many strange places, far from the haunts of civilisation, but his photographic labours have been bent in the direction of recording the habits of the birds and beasts of the Antipodes almost as thoroughly as has been done in these islands by enthusiastic British workers. His work obtains an extremely good showing in our Melbourne contemporary, the "production" of which is equal to that of any English photographic journal.

## Correspondence.

- \**Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*
- \**We do not undertake responsibility for the opinions expressed by our correspondents.*

### SCULPTURE AND PHOTOGRAPHY.

To the Editors.

Gentlemen,—The "Magpie" of the "A.P. and P.N.," whoever he may be, says that the art specialist of the "B.J.," who, as most people know, is myself, rushes in and recklessly charges Mr. Bertram Park with passing off the photograph of a statue for one taken from life. That certainly was the charge; but it was made neither in a rush nor recklessly. It is upheld now, and will remain so.

Mr. Park, the plagiarist, also writes to tell your readers that I absolutely identify his picture with a statue by "the late Onslow Forbes," which, he admits and regrets, he had never heard of till now. Neither had I till now. The name I mentioned was Onslow Ford. Perhaps that is a small detail to the "A.P. and P.N.," which, in its earlier and simpler form, had a reputation to lose for art culture. But why does Mr. Park write to tell your readers that

I identify his photograph with the statue? Of course I do. Surely that fact is a week old. He is telling them an appalling untruth when he says that I state that, by the "control" of the pigmenting brush one can photograph a statue. I take this opportunity of informing your readers that really I am not a lunatic, in spite of Mr. Park's implications.

Of course, consciences are not equally elastic; but most promoters of exhibitions would have withdrawn so barefaced a plagiarism as Mr. Park's immediately upon the fact being pointed out. Moreover, neither Mr. Park nor the "Magpie" are bettering their case by stooping to journalistic trickery for the purpose of throwing dust in the eyes of the public. I am sending a copy of this letter to the "A.P. and P.N."—Yours truly,  
F. C. TILNEY.  
4, St. Oswald's Studios, S.W.

## Answers to Correspondents.

- \**All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.*
- \**Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.*
- \**Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & CO., 24, Wellington Street, Strand, London, W.C.*
- \**For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with fee.*

### PHOTOGRAPHS REGISTERED:—

E. C. Cooper, 49, Spring Bank, Hull. *Two Photographs: Groups of the Wesleyan Methodist Local Preachers' Mutual Aid Association Meetings at Hull.*  
S. A. Driver, Riddlesdale House, Ardlough, near Colchester, Essex. *Photograph: Dedham Mill, Essex, on Fire.*  
T. J. Hanstock, 3, Pilgrim Street, York. *Photograph of Mrs. Dudley-Smith and her Horse.*

TONING BROMIDES.—Would you kindly instruct me how to tone formulae given in the "Almanac" of 1907 (page 798) by J. Sedlacek for bromide toning (brown to violet-black)? I have treated Kodak, also Rotograph papers, using chemicals and exact quantities given, mixed in reading order, both in hot and cold water, but failed to get tone required (violet-black). Prints bleach quickly, but do not seem to move in toning bath after reaching a muddy yellow or light sepia, or with soda carbonate or water black. Prints are well washed before and after bleaching.  
PRINTER.

We gave the formulae as they appeared in the German, although we have not tried these particular prescriptions we have used some very similar ones for lantern slides, on which a considerable range of colours is obtainable by the use of hypo, sulphur metabisulphite. We should think the darkening solutions are strong enough in your case, as the tone apparently does not get to the last stage. Try solutions five times the strength. You might also add a little hydrochloric acid, say five drops per ounce to the mercury and bromide solution.

DISHES AND FIXING.—(1) Will dishes, etc., made of lead be detrimental to use for rodinal, metol, hydroquinone, and hypo solutions? (2) In (hypo 1 lb., water 100 oz., liquid bisulphite 1½ oz., or alum ½ oz.) how many 20 x 16 enlargements can I make? Also, any means of telling when fixing solution is no use for small prints? (3) Is liquid bisulphite and alum added to fixing beneficial or not? (4) Is a metol hydroquinone developer suitable for stand development? If so, how much must I dilute my pre-developer? In one part of developer how much water, also duration of time for development?—W. T. H.

(1) They are suitable. (2) We can give you no safe rule, except that you test the bath with a spare unfixing plate, noting the time taken to clear the plate by removal of the silver bromide. If it becomes unduly long you may depend the bath is becoming exhausted. It is a mistake to economise in hypo. (3) Certainly, I



hardening action on the gelatine surface, which is sometimes necessary (with some papers and in warm weather), especially when prints are to be sulphide-toned. (4) Certainly about five or ten times—i.e., 1 oz. of present formula to 1 oz. of water. You can only find a time of development by trial with the test plates. (5) We can only refer you to our advertisement pages.

**PENANCE.**—We have made inquiries, but cannot trace a maker of photo-stains named Whittaker. You can purchase several kinds of photo-stains and dyes from the large dealers.

**ALMANAC.**—The ferricyanide bromide formula, given in the "Almanac," page 825, is as suitable as any. A quicker process is to bleach the prints with weak bromine water, but the drawback is the irritating vapour which escapes from the bath. If we can advise you what respect the colour of your prints is unsatisfactory we will advise, but "rotten" does not tell us much.

**RIGHT TO COPY.**—Some weeks ago a firm of photographers in London took a photograph of a large regimental dinner party at one of the large hotels. Copies were ordered and paid for by those diners that required them. My son was one of the party and brought a copy. He and some of his friends wish to have some copies of the photograph, and have asked me to do some for them. Can I do this for them? Seeing all copies supplied by the photographer were paid for, is the copyright vested in them? I have written to the photographers asking permission (on a stamped addressed envelope), but they have not replied.

**DOUBTFUL IF THE PHOTOGRAPHER WAS PAID FOR TAKING THE GROUP.**—It is doubtful if the photographer was paid for taking the group. It is not his responsibility for paying him can allow you to copy it, as it is theirs, but it is conceivable that the photographer would do the job "on spec.," in which case the copyright would be his even though he sold copies. We should advise you to learn the facts of the case before doing anything.

**SUCH PRINTS GIVE SOFTER OZOBROME COPIES, BUT IT IS EASY TO MAKE THEM BY USING A WEAKER PIGMENTARY SOLUTION FOR RATHER LONGER TIME OR ADDING A LITTLE AMMONIA TO THE BATH.** You will find some information on this subject in the "Almanac." Certainly, the two are bona-fide.

**BROMIDES.**—1. A bromide enlargement, rather dark, was made with ferricyanide of potash, but will not darken with sulphide. The developer used is not now known. Can you advise anything likely to darken it? A border cut off does not help. 2. Can you give me proportions of hypo and alum for developing bromides? None of the makers appear to know.—A. O.

**A SOLUTION OF SCHLIPPE'S SALT, 10 GRAINS TO THE OUNCE. WE CAN ONLY HEAR OF THIS DIFFICULTY, BUT, EXCEPT FOR A STALE SULPHIDE SOLUTION, WE KNOW OF NO SATISFACTORY EXPLANATION OF IT.** 2. Hypo, 1 lb. to 200 oz.; dissolve and add alum, 1/2 oz. Filter. The prints are better as it becomes older.

**PRINTS.**—I should feel much obliged if you would kindly let me know in next week's "B.J." whether you know of makers of prints which would trim prints (with same size tissue fixed back) at right angles when placed one on another, say five or six. If so, it would save a deal of labour in trimming and would turn out the prints perfectly square and ready for mounting.—J. T.

**HOW OF NO SUCH MACHINE BEING ON THE MARKET. PROBABLY THE DRY-MOUNTING COMPANY, FETTER LANE, E.C., CAN BE ABLE TO HELP YOU. A MACHINE SUCH AS IS USED BY THE DRY-MOUNTING COMPANY FOR TRIMMING THE LEAVES OF BOOKS AFTER THEY ARE TOGETHER WOULD NO DOUBT ANSWER YOUR PURPOSE QUITE WELL, BUT SUCH MACHINES ARE SOMEWHAT COSTLY.**

**MR.—I HAVE READ THAT PAPER IS NOW MADE AS SENSITIVE TO LIGHT AS THE MOST RAPID PLATE. COULD YOU INFORM ME WHERE I MIGHT OBTAIN A QUANTITY OF SUCH PAPER? I WOULD REQUIRE IT IN QUANTITY FOR SPECIAL EXPERIMENTAL PURPOSES.**—E. J.

**WE HAVE BEEN MISINFORMED. THE MOST RAPID PAPERS ARE THOSE OF THE "ULTRA" CLASS, BUT NONE ARE AS RAPID AS THE VARIOUS ULTRA-SENSITIVE PAPERS.**

**MR.—WE HAVE NOT HEARD OF THE PROCESS, BUT WE SHOULD BE INTERESTED TO HEAR OF THE VALUE PLACED ON IT BY THE VENDOR. USUALLY SUCH METHODS ARE NOT WORTH WHAT IS ASKED FOR THEM.**

**ANXIOUS.**—The method is to place a thin piece of celluloid film between the negative and the bromide paper when printing. The cards are dried with fires, none with spirit, but ten minutes is rather a short time for the whole process. We are sorry your query has been overlooked.

**S. E.**—We have often found such stains yield to ammonium persulphate crystals rubbed on wet.

**J. J. D.**—We believe these results are being produced by local chemical toning, by means of a brush. The hair, for example, is bleached with the ferricyanide-bromide solution, and the whole print then placed in a sulphide bath. If you examine the print closely you can see evidences (the lady's left shoulder) of the toning process having extended beyond its proper sphere. We advise you to get Somerville's "Toning Bromides," and try one or two of the processes, thickening the solutions somewhat with glycerine.

**SULPHOCYANIDE POISON.**—Is sulphocyanide of ammonia, used in toning P.O.P., poisonous like the cyanides? What is the least quantity which produces such symptoms? What is its antidote?—B. O. J.

It is not a highly poisonous substance. Potassic sulphocyanide, if subcutaneously injected, causes at first local paralysis of the muscles, and later, convulsions.

**UNLAWFUL USE OF PORTRAIT.**—I shall esteem it a great favour if you will enlighten me on the following little matter. Some little while ago I took the portrait of a lady, well known in this neighbourhood. She was so well pleased with it that she ordered an enlargement. When it was done my canvasser, unknown to me, used it for two or three days as a specimen, as it was so good a piece of work and the lady so well known. The portrait was then sent home with the bill. The lady then sent me an indignant letter, saying that she would not think of paying for a portrait of herself which I had hawked all about the district, and even went so far as to say she should consult her solicitor on the matter, as it had caused her great annoyance.—A. R. C.

One can hardly be surprised at the lady's annoyance at such unwarrantable use being made of her portrait. You say that your canvasser used the portrait without your consent, but that makes no difference, as you are responsible for your agent's action. It is illegal for a photographer to use portraits of his sitters for purposes of his own, and if he does he may find himself in trouble. We should advise you to at once explain the matter to the lady and make an abject apology, when she may possibly forgo legal proceedings.

**STEREO TRANSPARENCIES.**—I have recently seen some extraordinary fine stereoscopic pictures, that must have been taken many years ago. They are transparencies on glass, and bear the name of "Ferrier, Paris." The sight of these pictures has quite enchanted me, and I am anxious to go in for stereoscopic photography. I am told that these pictures can be done with the ordinary quarter-plate camera, and that a bi-lens one is quite unnecessary. Will you please tell me if that is the case? If so, how is it done? Also, what kind of negative is best for stereoscopic pictures?—AMBITIOUS.

A quarter-plate camera will do quite well for stereoscopic pictures. All that is required is to shift the camera horizontally two and a half to three inches between taking the two negatives. This is best done by having a small board to screw on the top of the tripod stand, with a fillet of wood back and front, between which the camera will slide, so that it is kept parallel at the two exposures. It need not be said that this arrangement will not do for taking moving objects. For such subjects a bi-lens camera is essential. Negatives for stereo pictures should be of a rather soft and delicate character. If they are made very vigorous the prints are apt to appear chalky when seen in the stereoscope.

**A QUESTION OF OBSTRUCTED LIGHT.**—I propose putting up a studio in my garden for professional work (portraits). I have had plans prepared which have been approved by the Council surveyor. My next door neighbour hearing of this is very indignant, and threatens to make me pull the place down if it is put up, as it will stop out the light from his side building. This is an out-building with two small windows in it, and is only occasionally in use. I have asked my solicitor about it, and he does not seem to care to give a decided opinion on the matter. Will you be good enough to give me yours?—R. WADE.

If your solicitor, who knows all the particulars, cannot give you advice we do not see very well how we, who only know what is

said in your letter, can do so. We may, however, tell you that if your neighbour cannot claim the privilege of "Ancient lights"—that is, his windows have enjoyed an unobstructed light for twenty years—he cannot do what he threatens. He can, however, put up a hoarding in his own ground that will stop off the side light from the studio, and you will not be able to prevent him. If he does enjoy "Ancient lights," he can stop your building if it obstructs so much of his light as not to allow him sufficient for his purpose.

**STAINED PRINTS.**—We are much troubled with stains on our prints, particularly with the vignettes. You will notice they are of a dirty pinkish tint and very unlike the yellow stains one gets from imperfect fixation or washing. It is only quite lately we have been troubled in this way, and we may say that it is only in the mounted pictures that the stains show, which they sometimes do directly they are mounted. This leads us to suspect that the mounts may be the cause, which is partly confirmed by the fact that it is only since we took this batch of chocolate mounts into use that we have noticed the stains. We enclose a sample of the mounts for you to see.—M. AND CO.

On examining the mounts we have no hesitation in saying that the trouble is due to them. One of the pigments used in the colouring for the mounts is soluble in water, as will be seen if they are wetted and a piece of white paper is rubbed against the surface. It will at once become tinted. If you continue to use the mounts, mount the prints dry, and use as thick and dry a mountant as you can. You would be quite justified in returning the mounts as being unsuitable for their purpose.

**PROSPECTIVE.**—The design A (ridge roof) and B (lean-to) are both good for portraiture, and opinions are very divided as to which is the best. It is very much a matter of opinion. The design C we should not recommend for portraiture, though it is very suitable for copying or reproduction purposes. Of course, good portraits could be taken in a studio of this form, but it requires more skill in working than either of the others, and therefore is not so well suited for a novice.

**COLD VARNISH.**—Last summer, when watching an itinerant photographer at work taking portraits on glass on the beach, I saw him varnish some of the pictures. The varnish he used seemed nearly colourless. It was simply poured over the plate, without heating, and appeared to dry in a few minutes. I asked the man what varnish it was, and he told me he made it himself, and it was his secret. It seemed to me that such a varnish would be very convenient to many of us for varnishing negatives. Can you give me any idea of what it is composed?—A.L.F. BRIDGEWAY.

The varnish that is usually employed for glass positives is a dammar varnish, and that was no doubt what you saw being used. It may be made by simply dissolving dammar resin in benzole, in about the proportion of thirty grains to the ounce of solvent. It is a very convenient preparation, but negatives varnished with it will not bear rough usage.

**BROKEN PLATES.**—Several times when I have bought plates at the dealers'—they have been half-plates—I have found one or two in the packet broken, and when that has been the case one or two more scratched by the broken glass. When this happens, to whom should I look for compensation—the dealer from whom I had them or the makers? It is a loss to have a dozen plates with two or three of them that cannot be used.—INQUIRER.

It would certainly be of no use applying to the makers, as you have had no dealings with them. Further, they take no responsibilities after the plates leave their works. The dealer also, we should say, would decline to make any recompense. Your experience seems to us to be exceptional, for, though we use a good number of plates by all makers, we very rarely meet with a broken one.

**S. J. J.**—Unless you had a written agreement, duly stamped, to the effect that, in the event of his leaving you, he was not to set up business within a certain radius of your place, you can, of course, do nothing. The man is entitled to do what he likes after leaving your employ, and it would be hard upon him if he could not.

**GLASS POSITIVES.**—I want to take, at a forthcoming fête which is being got up for a charitable purpose, some glass positives. These I shall charge for and the money taken handed over to the fund. I can manage to work the process fairly well, and hope to work it better by the time the affair comes off. What I want to know

now is, how can I make the plates more sensitive, as compared with extra rapid dry plates—are very slow? Is to increase the strength of the silver bath to, say, sixty grains the ounce—I am now using thirty grains—would that double the rapidity? I am using ———'s collodion.—POSTUMUS.

There will be no advantage whatever in increasing the of the sensitising bath above thirty or thirty-five grains the ounce as regards rapidity. With a stronger bath than will not get such good whites or such good results generally, compared with gelatine, the collodion is a slow process, and it is not to be helped.

**REVERSED NEGATIVES.**—I am asked to quote by a manufacturer for taking a number of negatives for illustrating a catalogue are to measure, clear, 8 x 6, and must be reversed as regards right and left, as they are to be used for some mechanical purpose. I shall be obliged if you will be so good as to tell me what will be the best for me to get—a reversing mirror or a glass, whether it would do to take the negatives though the course making proper allowance for its thickness in the focus.—T. WALTHER.

So far as results are concerned, there is no difference between a mirror and a prism, supposing them to be of equally good quality. Mirrors have the disadvantage that they occasionally may be re-silvered, and also are more liable to get damaged. Prisms are cheaper to purchase than are prisms, particularly if of large size. Large prisms are rather costly. Good reversed negatives can be taken through glass, but it is manifest that any defects such as specks, air bubbles, and the like, will show in the negatives and sometimes spoil them.

**PATENT AND REGISTRATION.**—I have invented a special plate arrangement, and I want to protect it so that it cannot be copied. What is the best way of registering it, as I do not go to the cost of a patent until I see whether the thing is worth it? Then, if it does, I shall patent it.—HANTS.

There is no form of registration that will give you protection in an invention of that kind. That can only be secured by a patent. You can obtain a provisional protection for £1, which will last for six months before the complete specification need be made. During that period you can decide what you will do. If you put on the market before it is patented it cannot be patented afterwards, as you seem to infer in the postscript to your letter.

**TERMINATION OF LEASE.**—I hold the above premises on a lease, which expires next September. The business is not a success, and I do not, of course, wish to leave, but the landlord has not given me a six months' notice. What I should like to know is, how I stand, as I want to keep on the place. What notice must be given me if he does not want me to continue?—ANXIOUS.

At the expiration of the lease the tenancy ceases, and there is no necessity for the landlord to serve you with notice. You leave as a matter of course, unless you arrange for a new term. It does not look like good business tact on your part to make the arrangements for a new lease until only a few months before the expiry of the current one. The landlord, if he grants a fresh lease, can make what terms he likes, and may position the rent, and you cannot help yourself.

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### SUMMARY.

**Photographic Convention.**—The report of the latter part of the Convention over which Sir Cecil Hertset has presided with great success is given on page 544. The group of members of the Convention is presented as a supplement to this week's issue. The key to the portraits will be published next week.

**Diamidophenol Developer.**—We commence the translation of the methods and formulae for this developer advocated by M. G. Balagny, by whom it is recommended as a universal solution for development papers, and lantern slides. Some of the essentials of M. Balagny's practice are the subject of some of our editorial articles. (Pp. 543 and 546.)

**Commercial Record Photography.**—The recent survey of St. College, Oxford, carried out by Mr. A. E. Walsham, is the subject of an article on page 549.

**Use of cerium instead of chromium salts for bichromate printing.** has been patented. Focussing mechanism, roller-blind, and printing frames and reversing backs are among other subjects of the week. (P. 552.)

**Owen Wheeler,** in a recent paper on instantaneous telegraphy, advises as to the most useful aperture of the lens, and the best form of camera for such work. (P. 548.)

**Descriptions and two illustrations of a modern country studio** interest those who may be building or renovating their studios. (P. 550.)

**Professor R. W. Wood** has recommended preliminary fogging of lantern taking negatives of faint spectra. The same expedient may be used for the photography of other badly illuminated objects. (P. 542.)

**F. Novak,** of the Vienna School of Graphic Arts, has published formulae for the making of slow-burning magnesium powders. (P. 543.)

**Precautions which too frequently are not taken in the framing of pictures** are the subject of some practical hints. (P. 543.)

**Particulars have been announced of the Optical Convention to be held next year.** (P. 554.)

### EX CATHEDRA.

#### The Permanency of Photographic Records.

It has been stated that Herr Thiele, of Copenhagen, has found that astronomical negatives are liable to variations that are of undoubted reality and seriousness, especially in the case of images of double stars. The apparent distances and relative positions of the stars appear to vary after a certain time, and sometimes two plates that have been exposed at the same time give differing records. This sounds very alarming, but possibly the report rather exaggerates the true state of affairs. Still, it is obvious that gelatine is liable to changes, and that it is by no means an ideal substance for holding a permanent record. Some little time ago we had occasion to go through a number of ordinary negatives about fifteen years old. We knew that every care had been taken in the preparation of the negatives, and that fixing and washing had always been properly carried out, yet, out of the four or five hundred examined, only a small proportion were in perfect printing condition. Strange markings had developed, especially in the skies, and various spots and mottlings were apparent on many of the negatives. The varnished ones, which were too few, escaped these troubles, which fact pointed pretty clearly to some form of decomposition of the gelatine set up by atmospheric influences. Numbers of valuable star chart plates were once lost at the Royal observatory from a very similar cause. Varnish is evidently a protection, but it is not certain that it is a permanent one, and in any case a glass plate is liable to breakage. The most desirable form of permanent record would probably be a photo-etched metal plate, but we are doubtful whether this idea has ever been tested.

\* \* \*

#### The Photographic Salon.

From the prospectus of the forthcoming Salon we learn that this year's exhibition is to be held from September 11 to October 24, in the gallery of the Society of Painters in Water-Colours, 5a, Pall Mall East. As in recent years, we find the clause to the effect that pictures sent for exhibition to any other exhibition open in London at the same period will be disqualified. We quite sympathise with the desire of the Salon Committee to avoid duplication of pictures at the two contemporaneous exhibitions. Our only quarrel is with their form of expression. Of course, they can only depend on the bona fides of the exhibitor, and it would, to say the least, have been better to have said so. Another innovation in the Salon arrangements is the request for particulars of the number of copies obtainable of any exhibited picture. The Salon Committee rightly take the view that if the number of copies is strictly limited the value of the photograph is greater, and that the adoption of such a practice must generally enhance photographs as works of art in the eyes of the purchasing

public. We have only to say that the entry forms of both Salon and Royal can be had by sending a penny stamp to the "B.J.," or the Salon entry form is, of course, obtainable from Mr. Reginald Craigie, 5A, Pall Mall East, London, S.W.

### **The Use of Fogged Plates.**

Professor R. W. Wood, of John Hopkins University, in dealing with the photography of faint spectra, advocates the use of plates that have received a preliminary slight fogging, just sufficient to take the plate to the end of the curve of under-exposure. This expedient is not exactly new, but it is one that is very seldom tried. The idea of deliberately fogging the plate is repugnant to most photographers, and in any case it can easily be overdone. Still, if it is as successful as has been stated it is a simple thing to try when very faint objects have to be photographed. Further than this, if it is an advantageous expedient with faint objects it might also be a useful one in very high speed camera work. There is an opening for careful experiment both as regards the best methods of fogging the plate and as to the class of work with which the use of such plates is advantageous.

### **Advantages of the Focal-Plane Shutter.**

A couple of illustrations in the "Photographic Monthly" illustrate in a striking manner the advantage that the focal-plane shutter possesses over the more common lens shutter in the matter of efficiency. Two photographs of a waterfall are given, one in the reproduction showing every indication of under-exposure, while the other suggests a full, or perhaps slightly excessive, exposure. In point of fact, however, the first received an exposure of about 1-30 sec. with a lens shutter, and the other 1-200 sec. with a focal-plane. We take it that both speeds are nominal, and that probably the focal-plane exposure was rather longer than the 1-200 sec., but in any case it must have been a much shorter exposure than the other, for it has preserved all the detail in the falling water. At the same time, the dark rocks are quite as fully exposed, if not more so, and this effect can only have been due to the high efficiency of the focal-plane shutter. Probably the efficiency of this was near unity, while that of the lens shutter was only about one-third, and if we discount the marking of the former shutter it is possible that the actual exposure was much the same in the two cases. The difference in the result is, however, very striking indeed.

### **Reversed Carbon Portraits.**

While there is no difficulty in making a double transfer carbon print from either the flexible temporary support or a prepared opal support, it is undoubtedly a little quicker, and for a less experienced worker easier also, to make a single transfer, and therefore, if an ordinary negative be used, reversed carbon print. How far it is wise or even legitimate to send out such prints is an interesting question, and one that must be answered in each individual case. Sometimes the details of the dress or the wearing of eye-glasses or some facial peculiarity enable the reversal to be at once detected and so prohibit its use. In other cases, perhaps most readily in children's portraits, lateral reversal passes without notice. In a case which quite recently came to our notice it resulted in a further order. Some portraits of a friend had been made by a photographer, and double transfer prints were sent and greatly admired. A single transfer print of one position was given to a mutual friend, and seen later by the sitter's mother was mistaken for another position and declared to be a better picture than any of the others. That this should happen in the case of a reversed portrait was not a little curious,

for while such a reversed print shows sitters the same appearance as they are accustomed to in their mirror, undoubtedly gives to any other face an unfamiliar aspect unless the features are very regular and symmetrical, unless the portrait is a profile.

### **Photography as an Aid to Measuring Buildings.**

Architectural students frequently require measurements of buildings in the case of the larger structures but are often by no means easy to oblige. By selecting a time when the front of one of the cathedrals is covered with scaffolding this measuring does not present insuperable difficulties, though assistance with the measuring tape is usually necessary. If no such scaffolding is available the work must be done by means of ladders, often at considerable bodily risk, though the method of lowering a rope marked distinctly in 3ft. lengths, sometimes be useful, distances being set off on a rough sketch elevation by a colleague situated on the ground and at some little distance. Some recent experiments have shown us that considerable use may be made of photography in this direction, provided a few special points are attended to. First, a view-point should be chosen as nearly as possible opposite the centre of the frontage, and in every case the axis of the lens must be absolutely at right angles to the frontage. On some of the building a scale must be made by marking vertical lines at a distance of, say, 3 feet apart. If it is desirable to mark the building in this way four or five white rods or laths may be set on the pavement in vertical position and placed a yard apart. Measurement on the one plane only can be made, though if there are two parallel planes the one photograph may be utilized for measurements on both planes, provided a scale is attached to each plane. The depth of a recess or the extent of a projection cannot be measured from the photograph.

### **The Camera and Lens.**

The camera used for such work should have the movements and capabilities usually required in an instrument for architectural photography. Ample rise of front together with bellows nearly square as possible is one of the main points. A cross front is in some cases an advantage, for where a view-point is somewhat to the left or the right of the centre of the frontage line the image of the building will be centred on the plate without difficulty or waste. The axis of the lens must point at right angles to the front of the building, and if no cross front is fitted then a wide angled lens will probably be needed to get the required amount in. The choice of lens is also an important matter and naturally a non-distorting objective must be employed. Not only will the single landscape lens be esteemed, but a symmetrical objective, of either the rectilinear form or the anastigmatic, will preferably be chosen. The fine covering power of many of the modern flat field lenses marks them out as being eminently suitable.

### **The Acid Fixing-Bath.**

The recent spell of hot weather, which may at any time during the next few months be repeated, has brought usual troubles for the photographer, and it is a very tribute to the quality of our plates and papers that such a disaster is so comparatively rare. Fifteen years ago when owing to the softness of the emulsions, it was scarcely possible to develop a dry plate with soft or distilled water and even when hard water was used in warm weather the danger of frilling was imminent, it was a frequent practice to mix a fixing bath containing chrome and



It is somewhat rare to find any other fixing than one of plain hypo, especially where the non-developers are employed—or where an ample quantity of sulphite is used in the pyro developer and the yellowness of the negatives is not only objected to but possibly preferred. Quite apart from the merits of fixing bath as a preventive of stain is its value in hardening the gelatine film, thus enabling the plate to be handled after fixing and to be washed a sufficient time with cotton wool after washing without risk of damage.

The use of the ordinary bisulphite of soda gives advantages with the minimum of trouble, for a pound of sulphite in a Winchester of warm water gives a stock solution that will keep. If one ounce of this is added to one of the usual one in four hypo solution and the acid fixing bath is at hand.

#### ACID DIAMIDOPHENOL DEVELOPER.

On this page we commence an abstract from M. Balagny's book on "Diamidophenol en Liqueur Acide," which contains a great deal of useful information upon a developer that is at present rather neglected in this country.

It will be noticed that Formula IIA has a certain resemblance to the one given in the "B.J. Almanac," on page 13, the principal difference being that where M. Balagny uses acid bisulphite solution the "Almanac" uses which is that of Mr. Welborne Piper, advocates sodium metabisulphite in very much larger relative proportions. In both cases the sulphite and the acid salt are in one solution, which solution has remarkable properties and also certain peculiarities described by Balagny. Our experience of the acid amidol or phenol developer has been confined to the formula in the "Almanac," and it appears that the neutral solution there described has exactly the same results as M. Balagny's S solution.

Acid developing formulæ have been in use, especially on the Continent, for a very long time, and it is that up to the present they have not appeared in the instructions issued by the various English plate and camera makers. The old formula with plain sulphite is still in use, and while this forms an excellent developer its ingredients are quite freshly mixed, it has many disadvantages which deter photographers from making use of it. A stock solution of sulphite, for example, is kept for more than a very short time, and the necessity of making up fresh solution is a great trouble. This trouble vanishes if we substitute the S or the neutral sulphite solution, for the plain acid amidol the mixed developer can then be used for a number of plates without fear of stain or discoloration.

It should be noted that the "Almanac" formula is for amidol, and M. Balagny's formulæ for phenol, which is not, perhaps, exactly the same as the latter salt is now easily obtainable in this country and in trying M. Balagny's formulæ we suggest that it could be as well to use it. It keeps much better than amidol, according to our experience, and the emulsion is generally quite white, and will keep so for a long time.

A somewhat important part of M. Balagny's book is devoted to dealing with the functions of the various ingredients of the developer. It is, perhaps, too often contended that amidol is a strictly one-formula developer, and that of varying the proportions of the sulphite are reserved. It will be seen that M. Balagny gains control by varying the amount of acid sulphite, and, however, appears that the acid sulphite must

have a rather more powerful restraining action than the metabisulphite, for we have not noticed that the "Almanac" formula is unduly restrained, even though it contains a very large proportion of the acid compound. Apparently the restraining power of the metabisulphite varies greatly with different developers, for its effect with pyro seems to be greater than with amidol, and very much greater with hydroquinone than with pyro.

Many workers use amidol for bromide prints, but very few use it for negatives. We have, however, found the acid formula excellent for work with negatives, whether in dishes or tanks be used.

#### PRACTICAL HINTS ON FRAMING PHOTOGRAPHS AND ENGRAVINGS.

It may seem a matter of supererogation to say anything on the subject of framing pictures, but when one notices the way that some of this work is done some remarks seem occasionally called for. The object of framing a photograph, or an engraving, is twofold—viz., to show the picture off under the most favourable conditions, and to protect it from mechanical injury, as well as to preserve it from injurious influences. With regard to the first point, it is not our intention in the present article to say anything, since much has been written on the subject during the past few years, and, after all has been said, choice depends largely upon personal opinion and individual taste. We may, however, deal with several points having reference to the mechanical side of framing.

Many photographers at the present time style themselves picture-frame makers and picture framers, but, judging from the way that some of this work is frequently done, there is no question that some of them do not understand this branch of their business, or, if they do, they carry it out in a manner so perfunctory as to be almost reprehensible. It is by no means uncommon to see—in the case, say, of enlargements that have been hung for a year or two over the fireplace, or other part of a room that is lighted by gas—that the corners of the mounts have become discoloured. This is due to dust, or, perhaps, smoke, gaining access between it and the glass. Again, the whites of some bromide enlargements, in a year or two, become of a decided yellow tint under similar conditions. It is tolerably well known that the fumes from burning gas have a deleterious action on all silver pictures, and in many instances bromide enlargements do not receive such care in their production that they will resist for long such destructive influences. That being the case, they ought to receive all the protection that a frame should afford them. This is a point that is too frequently neglected by the photographer by whom they may have been produced, even when he does the framing himself.

The most important thing to be considered in framing photographs or engravings is to ensure their being made perfectly dust- as well as air-tight in the frames. It goes without saying that if the picture is sealed up air-tight it must also be proof against dust and smoke, or other injurious fumes. This end is always ensured when the work is done by skilled and conscientious picture-framers, such, for example, as make a specialty of dealing with valuable engravings. They always employ a much stouter and better fitting backboard than is usual with photographers. Backboards can be had of any thickness, from eight to twelve, or more, cuts to the three-inch plank. The backboards supplied with some of the cheaper kinds of frames are so very thin that they have not sufficient stability to press the mount in contact with the glass, except just where they are bradded into the frame. Moreover, they are often in several pieces. In the better class of frames, as just mentioned, the backs are much thicker, and instead

of being in several pieces are all glued together, then neatly planed up, and bevelled at the edges where the brads are to go. With such backboards it is a very easy matter to seal up the picture perfectly air-tight.

A recommended method of framing is, therefore, as follows:—In the first place the glass must be thoroughly cleaned and polished on both sides. Whiting and water is as good as anything for the purpose. When cleansed the glass should be examined for air bubbles, and if any of large size are seen it had better be discarded altogether. If not, care should be taken that the picture be placed in the frame so that the bubbles are before the least important part of the picture, say the figure portion, if it be a portrait. If they come before the face they will show very conspicuously and thus considerably mar the picture. The glass should now be papered in the rabbet of the frame. This is done as follows:—Enough strips of paper (good newspaper will do), about three-quarters or an inch wide, are cut to reach round the frame. They are then coated on one side with flour, or starch paste, laid neatly so that one edge lies on the glass to nearly the width of the rabbet, and the other on the side of the frame, and allowed to dry. When this is done, no dust can get to the mount from the front. It is a good plan before laying in the paper to rub a little paste round the rabbet to fill up the pores of the wood, better adhesion and greater ease in working being obtained. The glass is now examined to see if any paste has been pressed out from the paper, for, if such is the case, it must be cleaned off.

The frame is then well dusted out, and the gilt flat, if one is used, is laid in, and on that is placed the picture. The backboard is then dusted with a brush to remove dust of any kind, for with unplanned wood there is a likelihood that adhering sawdust would get between the glass and the picture. It is then bradded in temporarily with two or three brads on either side. The frame is then turned over to see if any dust or particles of wood have got imprisoned between the glass and the picture. This having been seen to, the backboard is permanently secured with brads. The

best for this purpose are known as "fine cut picture brads" which may be had from most of the large ironmongers. They have, however, been largely superseded by thin wire nails. When driving in the brads something solid, such as a weight or hammer-head, should be pressed against the side of the frame to drive against, in order to prevent joints at the corners being "started."

We have now framed our picture in such a way that dust, smoke, or injurious vapours can get at it or mount from the front, and what has now to be done to make the work complete is to prevent them from gaining access from the back. That is done by papering in the backboard. Some do this by pasting strips of paper round the backboard and the frame, and often so clumsily as to give the work a slovenly and unworkmanlike appearance. The best way of sealing the back is to cover entirely with a stout sheet of brown paper which is secured only to the frame itself, and not attached to the backboard at all. The best plan is to cut the paper a little smaller—three-quarters of an inch, or so—than the outside of the frame. The paper is then laid on the workbench thoroughly and evenly wetted with a sponge well charged with water. It is then allowed to lie for a few minutes to allow it to fully expand. The back of the frame (only then coated with a cement—glue is best for the purpose) the paper laid on, well pressed in contact all round the frame, and allowed to dry. The paper, although it looks slack while wet, will be as tight as a drumhead when dry. The advantages of this method of backing over former are that the work looks neater, that a rough unsightly backboard is hidden, and that if at any time the board shrinks or cracks, as many do when hung in a wall place, it is of little moment, as the picture remains unaffected all the same. It may be well to point out to the novice that the brown paper used for the purpose should be thick and of the best quality, so as to resist the shrinkage as it dries. If a very common paper is used the probability is that it will split right across length or width on drying.

## THE PHOTOGRAPHIC CONVENTION AT BRUSSELS

FOLLOWING on the notes in last week's issue, made during the first three days of the Convention week, we may describe the whole of the Convention proceedings as certainly as enjoyable as any of recent years. The attendance is sufficiently evidenced by the group taken on the Wednesday afternoon, which is presented as a supplement with the present issue of the "B.J.," although the membership of the Convention is never fully represented in the official group.

Particular interest was taken in the fine exhibition of portraiture arranged by the Platinotype Company, which, as in previous years, has not only given conventioners an opportunity of inspecting some really magnificent photographic work, but has also regularly provided an object lesson in hanging and display, to say nothing of the essential object of the collection, namely, the display of the merits of the company's various platinotype papers. This year the collection includes the work of Messrs. Walton, Adams and Sons of Reading, Messrs. Vandyk of Buckingham Palace Road, Mr. J. Craig Annan of Glasgow, Messrs. Alfred Ellis and Walery of Baker Street, Messrs. J. Weston and Sons, Messrs. Drummond Young and Watson of Edinburgh, Edwin Hadley, Nottingham, and Histed, Baker Street. Some of the fine portraiture by Godensky of Philadelphia, was also shown, as well as a number of reproductions of paintings by A. Vignais of Paris. Among all these the delicate and artistic work of Messrs. Drummond Young, in the way of platinotypes coloured to a slight extent, is particu-

larly worthy of notice, as is also a number of landscapes in various colours by a lady, with platinotype as a faint photographic basis.

The demonstrations of Mr. C. L. Burdick attracted a deal of attention, and drew prominence to the remarkable facility provided by the aerograph. The exhibit of the K. Company took the form of handsome prints and enlargements on the firm's many brands of printing-out and development papers. Messrs. Watson, who with the firm of Carlisle completed the trade exhibition, showed their various cameras and such recent introductions as the walking-stick finder level. They also exhibited a number of photographs illustrating the properties of the holostigmat series of lenses.

So far as concerned the programme for the week, submitted to that reported in our last issue, it may be said that despite the many other attractions in Brussels the evening meetings have not been so well attended for a number of years. The more popular character of the fixtures is no doubt responsible for this, and though the result may be considered satisfactory in this respect the Convention cannot afford to lose sight of the importance of maintaining the more serious and scientific character which many of its papers possessed in the past. It was this which secured for it its present position, and to permanently abandon such policy as that must necessarily lead to the destruction of the Convention as an annual and useful function in the photographic world. Thursday evening's



took the form of a lantern display, first of Belgian scenes members of the Association Belge, which were explained in French by M. Vanderkindere. This was succeeded by a lantern display by M. Marissiaux, which provided a form of lantern entertainment new to English audiences. Contenting himself with a few comments on each picture M. Marissiaux led his hearers through the Venetian by-ways and into the churches of the city. His pictures followed his comments with a smoothness which is rarely found in lantern lectures in this country. The case of many of the interiors of the churches the effect of M. Marissiaux's fine transparencies was enhanced by a vocal organ accompaniment, the whole performance being expertly stage-managed. It remains to be seen whether society entertainers, a good sprinkling of whom were among this year's conventioners, will be taking steps to introduce a similar form of entertainment among their winter fixtures.

The Convention dinner was held at the Grand Hotel, Boulevard Anspach, with the President, Sir E. Cecil Hertslet, in the chair. The loyal toasts of the British and Belgian nations were proposed by the President, and heartily received.

"The Convention," proposed by Mr. E. J. Humphery (Past-President), was responded to by Mr. F. A. Bridge, who made an eloquent reference to the help given by Commandant Van Bever by Mr. Vanderkindere, associating their names with the motto of "The Association Belge de Photographie," and "The Revue Artistique et Littéraire." Both gentlemen responded.

The President was proposed by Prof. C. H. Bothamley (Past-President) with his usual humour, and was responded to in French expressing the greatest possible satisfaction with the results of the Convention to Belgium.

Mr. H. Snowden Ward proposed "The Ladies," on whose behalf the Rev. C. Hertslet replied most suitably; and Mr. E. P. Cembrano (Past-President) proposed "The Visitors." In response, M. Edouard Séve, Consul-General for Belgium in London, and, referred most eloquently to the long-standing friendship between the two countries, and expressed a hope that mis-

understandings which had arisen through exaggeration and misapprehension would soon be removed as the result of examination of the real facts.

The excursion to Antwerp, which took place on Friday, was perhaps the most interesting of the week, and the reception given by the Burgomaster in the Hotel de Ville deserved all the nice things gracefully said of it by the President. A demonstrative reception was in turn extended to M. Alphonse Hertogs, who was accompanied by his colleagues MM. Albrecht and Strauss, after which the conventioners dispersed to visit the cathedral, churches, and museums of Antwerp, reassembled at lunch at the Grand Hotel, and, after a trip on the Scheldt, once more met at the Zoological Gardens to enjoy the hospitality of the President and Lady Hertslet.

Mr. Martin Duncan's lecture in the evening, on the applications of the cinematograph and the Autochrome plate in nature photography, was exceedingly well received. Saturday saw the Convention making its last excursion to Malines, and though a number of visitors are no doubt scattered over Belgium, or are returning via Paris, the official programme of the week ended with this latter excursion.

The reception given to the Convention by the municipalities of Ghent and Antwerp were among the most agreeable recollections which visitors will have carried away with them. Among those who attended the "At Home" of Sir Cecil and Lady Hertslet on the Friday afternoon were General van Sprang, Gouverneur de la position fortifiée of Antwerp, and M. L. Verhoogen, Capitaine-commandant du Génie. Sir Arthur Hardinge, K.C.B., was also to have been present, but missed his train.

The Saturday excursion to Malines was very largely attended, and the luncheon provided a good chance for speeches of thanks and farewell (or rather, au revoir). The President took the opportunity of emphasising the great indebtedness of the Convention to the Burgomasters and municipalities of Antwerp, Ghent, and Malines, for their hearty welcomes and civic hospitality.

## SLOW-BURNING MAGNESIUM POWDERS.

Dr. Franz Novak, in the current issue of "Photographische Korrespondenz," gives the results of measurements of flashlight powders, which continue the experiments made a year ago, and recorded in the "B.J." of August 23, 1907, page 632, and "The British Journal" Almanac, 1908, page 599. His present paper relates to the preparation and properties of slow-burning powders, placed on the market as time-lights.—Eds. "B.J."]

The photographic activity of the under-mentioned mixtures was measured by means of the Eder tube photometer, gelatinoid of silver dry-plates being exposed to the various lights. The chemical strength of the light is expressed in candle-metre-seconds (H.M.S.), the Hefner amyl-acetate lamp being taken as unit.\*

The powder in all these experiments was six metres from the photometer, and was arranged in small capsules placed on an asbestos plate. The powder was fired by means of a electric touch-paper. For this purpose filter-paper was dipped in a warm solution of one part potass nitrate in two parts of water, and the paper hung up to dry. Three ground-glass plates were placed in front of the sensitometer in order to reduce the strength of the light. The powder burnt contained roughly a charge of 1 gm. of magnesium. In estimating the rate of combustion 5 gms. of the slow-burning powder were used. These latter were placed in capsules made of parchment of a diameter of 1 cm., closed below by cork, and provided on the upper side with a length of touch-paper. The time of

combustion was ascertained with a chronograph. The following table gives the results obtained:—

Combustion Powder.	Relative chemical strength on dry plates in candle-metre-seconds (H.M.S.) of mixtures containing 1 gm. of magnesium.	Rapidity or combustion in seconds of 5 gms. of the powder.
1g Magnesium .....	160,000 .....	5.5
0.7g Ceric nitrate (anhydrous) .....		
0.3g Strontium carbonate .....		
1g Magnesium .....	140,000 .....	4.5
0.6g Ceric nitrate (anhydrous) .....		
0.4g Strontium carbonate .....		
1g Magnesium .....	125,500 .....	4.8
0.3g Ceric nitrate (anhydrous) .....		
0.5g Strontium carbonate .....		
1g Magnesium .....	140,000 .....	1.3
0.6g Strontium nitrate .....		
0.4g Strontium carbonate .....		
1g Magnesium .....	130,000 .....	4.3
0.4g Strontium nitrate .....		
0.6g Strontium carbonate .....		
1g Magnesium .....	86,500 .....	11.2
1g Magnesium carbonate .....		
1g Magnesium .....		
1g Calcium carbonate.....	67,500 .....	25.0

Comparing the slow-combustion mixtures, prepared according

\*Candle-metre-second (H.M.S.) is the chemical strength of a Hefner amyl-lamp at one metre distance acting for one second.

to the above formulæ, the best is seen to be that consisting of 1 gm. magnesium, .7 gm. ceric nitrate, and .3 gm. strontium carbonate. The mixture of magnesium 1 gm., strontium nitrate .4 gm., and strontium carbonate .6 gm., is a weaker light, and burns somewhat quicker than the mixture just mentioned; it is, however, an excellent preparation. The mixtures containing magnesium and calcium carbonate give very much less light; and in regard to those in which calcium carbonate occurs it should be mentioned that the combustion takes place irregularly,

and they cannot be recommended for practical use. The smallest production of smoke occurs in the case of mixture containing ceric nitrate and strontium carbonate, greater amount being produced in those containing strontium nitrate and strontium carbonate. If a portion of the magnesium is replaced by aluminium powder a reduction in the amount of smoke produced is usually noticed, but further experiments in the use of aluminium in slow-burning powders are still in progress.

FRANZ NOVAK.

## DEVELOPMENT WITH DIAMIDOPHENOL IN ACID SOLUTION.

[The use of diamidophenol in conjunction with sodium bisulphite has found an enthusiastic champion in M. G. Balagny, whose published papers on the subject are scattered through the French photographic journals for the past few years. A medal was recently awarded M. Balagny for his method of using diamidophenol for obtaining warm tones on gelatino-chloride plates, but for negatives of both time and instantaneous exposures, bromide papers, as well as lantern-slides, the properties of the diamidophenol formula are described by him in terms which are perhaps at times somewhat too glowing, but which, nevertheless, are worthy of attention, particularly by users of Autochrome plates, in view of the experiments made by M. Charles Simmen on the use of the same developer for the development of Autochromes in a red light. The following notes, therefore, which are abridged from M. Balagny's recent "Monographie du Diamidophenol en Liqueur Acide," published by MM. Gauthier Villars, may be here translated as an abstract of the chief technical advice which the author has to give.—Eps. "B.J."]

DIAMIDOPHENOL has an acid reaction, but 1 gramme dissolved in 200 ccs. of water with 6 grammes of anhydrous sulphite of soda added gives a solution which is slightly alkaline. While the alkaline form of the developer may be recommended certainly for snapshot work, and even for studio portraits, it is far less suitable for the many forms of time exposure. It is impossible to hold back the action which takes place as soon as the plate is placed in the solution. Everything appears at once—shadow, detail, and high-lights. The high-lights and shadows are obtained together, when it would frequently be convenient that only one or the other should be obtained first. It was for this reason that diamidophenol was first abandoned. It was recognised as one of the most energetic of developers—in the words of Dr. Eder, "no known developing substance produces the image with a shorter exposure"—Dr. Just attributing to amidol and sulphite a developing power greater than that of metol-sulphite and potass carbonate, eikonogen-sulphite and soda, or even pyro-sulphite and potass carbonate.

### Controlling the Power of Diamidophenol.

It was, therefore, of interest to find some means by which this power of the developer could be made useful, and the first experiments took the form of adding quantities of citric, and later of tartaric acid. The second worked better than the first; but, as a matter of fact, neither gave a true acid developer, since the addition of acid to a solution of sulphite of soda decomposes the latter, and when there is an excess of sulphite, as there usually is, the developer still remains alkaline, and the only thing to do is to cut down the sulphite in the formula. It was, therefore, necessary to find a substance which could render sulphite of soda solution acid without decomposing it, and the substance which was found to do this was liquid bisulphite of soda solution, such as is on the market, of a density of about 35 degrees Baumé, a solution which has already been much used in photography for preparing the so-called acid fixing-baths.

### A Universal Developer.

In a developer prepared with this substance the bromide has only a relative action when added to a solution of diamidophenol containing excess of sulphite. Its action, however, is very powerful in a solution containing but little sulphite. This fact is of service when dealing with fully exposed negatives, in which case the sulphite may be reduced. This forms the basis of two separate formulæ for the acid diamidophenol developer, which

are different in character, and each of special use in certain cases. Diamidophenol, as we shall show, is a developer suitable for the treatment of all kinds of negative exposures, the development of positive prints and enlargements on bromide paper, and for the development of warm tones on chloride lantern slide. In fact, except that it is unsuitable as a physical developer for P.O.P., it may be called a universal solution.

Those taking up the acid diamidophenol developer must be cautioned to give it a fair trial by using no dish for it which has been used for an alkaline developer. Glass dishes, or those of genuine porcelain, may be cleaned with hydrochloric acid, and may then be used with perfect safety, but dishes of paper-maché, ebonite, or imitations of porcelain should not be used, if an alkali has been contained in them, inasmuch as the porous nature makes it impossible to clean them thoroughly and to remove all traces of solution which they had previously absorbed.

The materials for the developer should be of proper free manufacture. Diamidophenol which has become black is no good for its purpose; when it is good—and that of Lumière is always good—it is a silver grey. A packet of 100 gms. keeps in good condition for six or eight months while being taken from at intervals. Anhydrous sulphite of soda calls for no special remark; it keeps, as does also ammonium bromide, up to the last crystals contained in a supply of moderate quantity.

The bisulphite of soda solution should have a density of 35 degrees Baumé. When on tour in hot countries, when it is inconvenient to carry a solution, the bisulphite may be replaced by potassium metabisulphite, a 5 per cent. solution being used, but the ordinary bisulphite solution is what we think to be preferred.

For the measurements of the small quantities of solution a small graduated measure, holding 30 ccs., is useful; in some cases it is necessary to measure out with fair accuracy 2 ccs. of the bisulphite solution.

Coming now to formulæ for the development of negative plates, that which is now given is prepared for the use of anhydrous sulphite of soda in powder.

#### FORMULA IA.

Diamidophenol .....	1 gm.	15 grs.
Sulphite of soda, anhydrous powder .....	2 gms.	30 grs.
10 per cent. ammonium bromide solution .....	5 ccs.	85 minims.
Sodium bisulphite solution, 45 deg. Baumé .....	5 ccs.	85 minims.
Water.....	150-175 ccs.	5 to 6 oz.



this bath is made up as follows: Into a glass flask, holding ccs. ( $8\frac{3}{4}$  ozs.), are put 10 ccs. ( $1\frac{1}{4}$  ozs.) of water, the gramme diamidophenol is dissolved in it, and then the sulphite, or two together. The water is then added. This is better than using the full quantity of water in which to dissolve the diamidophenol and sulphite; a little water shaken round with two substances dissolves them better than the full quantity. 5 ccs. of the bromide solution are then added from the graduated measure. The quantity given is the maximum, it can be reduced down to 1 cc. or left out altogether, according to the character of the work which is being done. In summer, in the case of exposures on the sea, the full 5 ccs. are often necessary, in winter the bromide may be dispensed with, or a half or two used. It is well to remember that the figure of 5 may be generally adopted, but it is not necessarily invariable. Finally, the 5 ccs. of bisulphite are added; this quantity is invariable.

The formula is used exactly as above once the plates are ready for development, that is to say, it is not necessary to vary it during use. The formula, it may be explained, contains almost the same quantity of water and diamidophenol as of Lumière, but in place of the 6 gms. of sulphite of soda the latter only 2 are used, which reduces the energy and strength of the developer. Diamidophenol will develop with a relatively small proportion of sulphite, 2 gms. being ample; in order to avoid greying of the developer a little sulphite must be used, especially if negatives which have received none too long an exposure are being dealt with.

#### Sulphite and Bromide with Diamidophenol.

Another reason for the reduction in the quantity of sulphite is that in the presence of a larger proportion the bromide has its full restraining action, whereas with a smaller quantity of sulphite the bromide has just as active an effect as it has in ordinary alkaline development. Bromide of ammonia is used in the formula in preference to bromide of potassium, the proportion of bromide being greater. For the rest the quantity of bisulphite, 5 ccs., is adhered to. Its action is twofold. It acts as a restrainer—although not to the extent which one might have suggested—namely, that it can completely arrest development. This it cannot do. A developer containing 5 ccs. of bisulphite, with 2 gms. of anhydrous sulphite, the proportions being as above, was found to develop instantaneous exposures very well; moreover, as the bromide is an instant restrainer, there is no need to use the bisulphite for that purpose. The second part which it plays should not be forgotten; it hardens and strengthens the film of gelatine and prevents frilling, and, moreover, keeps the developer to the proper portions of the film, so that the halation effects which are common with alkaline development are much less pronounced when using the acid formula. Lastly, it acts as a restrainer of the diamidophenol.

Using the acid diamidophenol developer considerably less exposure may be given.\* The key to the successful use of the formula Ia is that too much exposure must not be given. Owing to the relative slowness with which the image appears, even in the high-lights, there is no necessity, as in alkaline development, to remove the plate from the developer as soon as the high-lights are visible at the back of the plate, although the rest of the negative may not be fully completed. It is from this method of procedure that ordinary negatives without detail in the shadows are obtained, but using acid diamidophenol the high-lights possess great transparency, and are never "hard." A good point about the developer is that the high-lights on all the non-exposed parts of the bromide of silver film, once immersed in the solution, have their sensitiveness greatly

reduced. As a result the negative may be left in the solution for much longer than would be necessary for its proper development, a course which could scarcely be followed in the case of alkaline developers. It often happens that a negative is left for ten, twenty, or thirty minutes, owing to the worker being called away, but the plate does not suffer thereby. This applies to formula Ia, whilst in the case of formula II, the negative may be left for several hours. The advantages of this property to busy persons should be obvious. The developer gives rise to no markings, and there is no need to keep it moving during use.

#### FORMULA IB.

Diamidophenol .....	1 gm.	15 grs.
Sodium sulphite, anhydrous, powder ...	3 gms.	45 grs.
10 per cent. ammonium bromide solution	1-2 ccs.	15 to 30 mns
Sodium bisulphite solution .....	5 "	85 minims.
Water .....	150-175 "	5 to 6 oz.

As already stated, the proportions of diamidophenol, water, and bisulphite should not be varied, but modifications may be made in the ammonium bromide and the anhydrous sulphite. In the above formula, which is an excellent one for all instantaneous work where one wishes to obtain a little more vigour, the sulphite may be used as above—namely, reduced by one gramme. In winter, for studio portraits, the bromide can be dispensed with, or only 1 cc. used, whilst keeping the sulphite at 2 to 3 gms. As in formula Ia the anhydrous powder sulphite is used. MM. Lumière have shown that by gradually increasing the proportion of sulphite the reducing power also increases up to a strength of 10 per cent. sulphite; beyond this point the further increase is still greater, and fog is obtained. This fact is used in the II. formula given later.

#### FORMULA IC.

Diamidophenol .....	$\frac{1}{2}$ gm.	8 grs.
10 per cent. potass. bromide.....	5 ccs.	85 minims.
Sodium sulphite, anhydrous, powder ...	1 gm.	15 grs.
Water .....	150 ccs.	5 oz.

To this formula  $\frac{1}{2}$  gm. (8 grs.) of anhydrous sulphite may be added during development, making in all  $1\frac{1}{2}$  gms., but this quantity could be exceeded providing rather slower development is not objected to, although in the ordinary way the time of development is twenty minutes. The last note to be made on formula Ia and its modifications is that an increase in the quantity of anhydrous sulphite increases the strength and vigour of the negative.

For those who can be certain of giving the correct exposure, a formula in which time and instantaneous exposures may be developed together, and from which the negatives will be indistinguishable one from the other, is as follows:—

#### FORMULA ID.

Diamidophenol.....	1 gm.	15 grs.
10 per cent. solution potass. bromide .....	5 ccs.	85 minims.
Sodium bisulphite solution .....	5 "	85 minims.
Sodium sulphite, anhydrous, powder ..	3 gms.	45 grs.
Water .....	175 ccs.	6 oz.

This is a very energetic bath, the negatives appear quickly and should be therefore carefully watched. For the least practised photographers formula Ia is preferable. All the above baths keep for a considerable time, but finally become red, in which state they are of no further use. The baths should be kept in closed bottles, or even in a graduate covered with a glass plate, in this way the solution has been found to keep in good condition for a whole week. 150 to 175 ccs. of bath will develop at least 15 to 18 9 x 12 cm. plates (quarter-plates).

G. BALAGNY.

(To be continued.)

\* Balagny states that the exposure can be reduced to nine-tenths of that given in the case of other developers, such as pyro, hydroquinone, etc.

## INSTANTANEOUS TELEPHOTOGRAPHY.

[The combination of positive and negative, which is most advisable for telephoto work with a hand-camera, occupies Captain Owen Wheeler in the following short article from the excellent "Telephoto Quarterly." Captain Wheeler, who edits and publishes his own useful journal from Strathmore, Princes Road, Weybridge, for the modest sum of 1s. 6d. per annum, post also gives his own experience in the choice of a camera for such work. Our readers must refer to "T.Q." for the reproductions illustrating the facilities of the lens-combinations here advised.—Ens. "B.J."]

BEFORE attempting instantaneous telephotography at any but the lowest magnifications it is necessary to have a clear idea of the relation between magnification and working aperture. Most telephotography of this description comes within what may be termed the normal conditions of exposure, and consequently the rule of multiplying the exposure that would be required if the positive lens only were used by the square of the magnifications holds good. But as it is frequently desirable to give a good deal less than the correct exposure the instantaneous telephotographer may be recommended not to trouble himself much about the square of the magnifications rule, but to pay attention chiefly to the aperture at which he is working. That aperture is the aperture of the positive lens multiplied by the magnifications. If a lens working at  $f/6$  is combined with a tele-negative of any suitable focus, and the separation and camera extension are arranged to give 4 magnifications, the working aperture is  $f/24$ ; if the positive is stopped to  $f/11$  the aperture of the telephoto system becomes  $f/44$ , and so on.

To anyone making this simple calculation the limitations of instantaneous telephotography are quickly obvious. You can get instantaneous photographs at  $f/44$ , but the conditions have to be very favourable indeed, and brilliant results are hardly to be expected. For all practical purposes—although I have myself sometimes gone farther with fair success—I think the limit may be placed at  $f/32$ , while for such weather as is usually available in any but a first-class English summer the effective range of possibilities in shutter work is bounded by  $f/22$ .

There are a few specially constructed tele-objectives which come well within these limits and which for a certain class of camera work may be strongly recommended. Of these the most notable is the new Zeiss tele-lens, which has an equivalent focal length of about 18in., requires a camera extension of only about 6in., and works at  $f/10$ . There are also the Dallmeyer combinations in which a portrait lens working at  $f/3.5$  is used as the positive. In both these cases the positive lens cannot be used separately for ordinary work, and the field covered sharply at full aperture is small. In the Zeiss lens only one focal length is available, and in the Dallmeyer the combination is rather cumbersome and costly. For special purposes both have their uses, but the average worker will probably prefer to know the possibilities of the most useful combinations in which the positive is a high-class anastigmat that can be used separately for the purposes of everyday photography.

### What is the Largest Useful Aperture for the Positive Lens?

Bearing in mind what was said above as to  $f/22$  or thereabouts being the everyday limit of working aperture for quick work, it is clear that a positive with an aperture of less than  $f/7$  is not of much use in instantaneous telephotography, the amount of possible magnification being so restricted. Even when the positive works at  $f/5.6$  the aperture of the telephoto system becomes  $f/22.4$  at four magnifications. One's thoughts, then, fly naturally to the various  $f/4.5$  lenses on the market, possibly even to the notable  $f/3.5$  Tessar. But there is disappointment in store for those who carry these fancies into practice. I have had through my hands some of the very finest  $f/4.5$  lenses made, and have found them most unsatisfactory for telephoto work. Perhaps the reason is that their corrections

are so elaborately good that they are peculiarly sensitive to disturbance by the addition of the tele-negative. Anyhow, I have yet to find the  $f/4.5$  lens that will work well as the positive of a telephoto system without stopping down, and I counsel readers to satisfy themselves by practical experiment on point before procuring such lenses for telephotographic poses.

On the other hand there are  $f/5.6$  lenses which work fairly well as tele-positives at full aperture. They will not cover the plate which in ordinary photography they fill with sharp definition, but a 7in. lens in combination with a negative will give a good 5in. by 4in. picture at 4 magnifications, and that is as much as, perhaps, we ought to expect. Taken all round, I have no hesitation in saying that, at the present stage, the best combination for instantaneous telephotography is one in which the positive works at  $f/5.6$ . This gives nearly 3 magnifications with a working aperture of  $f/16$ , nearly 4 with a working aperture of  $f/22$ , and nearly 5 with a working aperture of  $f/32$ .

### The Best All-round Combination?

When the aperture of the positive lens is settled it is necessary to determine its focal length and that of the tele-negative to be combined with it. This is not such an easy matter as it looks. The circles of illumination produced by telephoto combinations are relatively small, and they vary in the case of different positives. It may save beginners trouble if I say that in my own work I use a 7in. positive combined with a negative, and this at 3 magnifications has a circle of illumination of about 6½in. In practice it may be reckoned on to cover pretty sharply a quarter-plate at 3, and a 5in. by 4in. at 4 magnifications, the apertures being approximately  $f/16$  at  $f/22$ , and the equivalent focal lengths 22 and 28 inches respectively. This I regard as the best all-round telephoto combination for instantaneous work at present available, provided, of course, the right lenses are selected.

### Cameras—Reflex and Twin-lens.

We now come to the question of cameras. The ideal camera for any sort of instantaneous work is, I suppose, a twin-lens reflex, and such a camera would be a valuable acquisition in the serious telephotographer. But to pair telephoto lenses with a camera is an extremely difficult and delicate matter, and though I am told that it can be done, the best opticians consider that result when attained would not be worth the time and trouble which would be involved. The alternative, of course, is to use one of the many single-lens reflexes on the market, bearing in mind that it is one thing to handle those beautiful instruments when fitted with ordinary lenses, and quite another thing to manage them successfully when not only is the vibration caused by the bedding of the mirror—infinite as that is in the case of good patterns—multiplied considerably, but also the balance awkwardly modified by the tele-mount and hood.

I cannot, of course, undertake to discriminate among the numerous types of reflex cameras on the market. As a matter of fact I know of at least half-a-dozen which are all excellently adapted to instantaneous telephoto work, and possessors of "N. and G.," a "Videx," a "Birdland," or any other well-known variety, will certainly not be advised by me to make any change. But there is no harm in my saying that the pattern I use myself



the well-known "Kershaw" type which is embodied in the "Reflex" of Messrs. Marion and Co., and has been adopted by the London and Westminster. The two most important features of this camera are, first, the reflex, which is a very rigid front which is such a satisfactory feature of the "Kershaw" reflexes.

It is a good plan with a reflex to work at, say, three and four magnifications only, and to have the necessary extensions marked on the camera, and the necessary separation indicated on the mount. As pointed out above, if one is working with an  $f/22.4$  at 4 magnifications. If the tele-negative is of 3in.

focus the camera extension in the first instance would be 6in., in the second 12in. Of course, if one desires to work primarily at  $f/16$  and  $f/11$  this can be arranged for by sending a camera and lens mount to a competent firm to be carefully marked. The magnifications would then be very slightly less than 3 and 4 respectively.

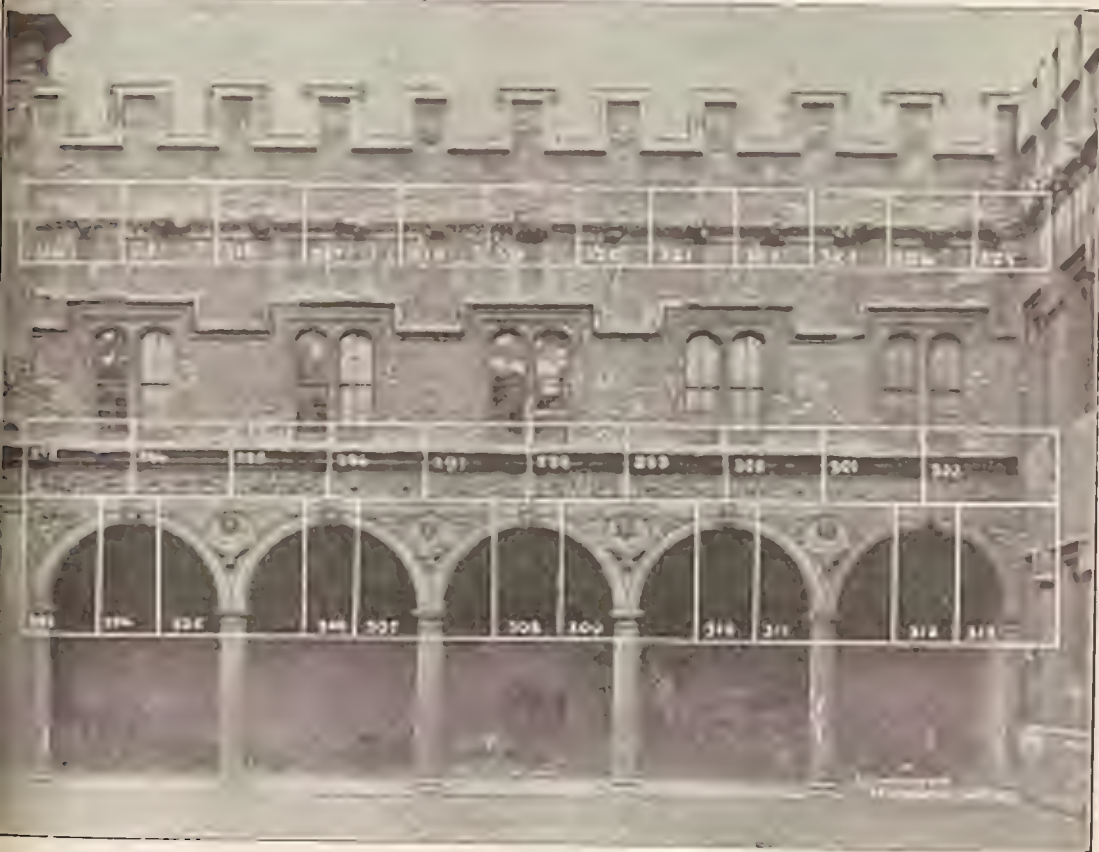
Excellent work can be done with cameras other than reflexes when it is possible to focus beforehand, and a focal-plane shutter is by no means a necessity. But for instantaneous telephotography there is nothing like a good reflex, although it may take some little practice before it can be satisfactorily used in the hands. Pending proficiency and where circumstances allow, it can advantageously be worked on a low tripod.

OWEN WHEELER, Captain Reserve of Officers.

## COMMERCIAL RECORD PHOTOGRAPHY.

All that pertains to the documental record of ancient buildings, crosses, tombs, and other memorials of the past it is mon to think only of the efforts put forth by amateur photographers acting alone or as members of one or other of

commercial aggression or defence it is being regularly and largely used, perhaps more so in these two directions than for the information of the next generation, which is the altruistic aim of the record associations. As a record of the positions of



Part of the photographic survey of St. John's College, Oxford, carried out by Mr. A. E. Walsham. The above shows the general view of a side of a quadrangle. The detail view of Section No. 311 is shown in the second figure.

record associations called into existence by the parent presided over by Sir Benjamin Stone. Yet photographic has a considerable commercial side to it. For purposes of

buildings the over-shadowing of a frontage by another block, the occurrence of nuisance by smoke or steam, the camera has become a recognised instrument of modern commercial life,

and has brought money into the pockets of those who have found in such work as this a way out of "darkest portraiture."

Such work calls for skill and resource out of the ordinary, but the monetary return compares very favourably with that from a great deal of the low price portraiture which is done at the present time; it would be a pity if it did not. As a specific example of the record photography which reflects credit upon those responsible for it, we may cite a case which has recently come under our notice, particularly as the work has been carried out in a way which is, we believe new. Mr. A. E. Walsham, architectural photographer, of 45, Chancery Lane, W.C., and 60, Doughty Street, has recently carried out a detailed survey of St. John's College, Oxford, at the request of the trustees, who desired to preserve a record of the carvings of the facades of the courtyards, as well as of many other architectural features which at some future date may need restoration. This work was planned out by Mr. Walsham according to a scheme illus-



Detail view of Section No. 311 of quadrangle of St. John's College, Oxford. Photograph by A. E. Walsham.

trated by the accompanying reproduced photograph of one side of a courtyard. Every piece of detail thus marked and numbered was separately photographed on a large scale from a position level with the subject. The general view thus serves as an index to the detail photographs, which are given the sectional numbers as shown in the example. It says something for the discretion brought to bear on this work that the negative of the detail portions were made by Mr. Walsham at the rate of some forty or fifty per day. The total results, running to some hundreds of prints, each from a different negative, have been inspected by us with much interest as the product of a well ordered scheme and quite apart from their great technical excellence as fine carbon prints. It may be added for the benefit of those whose interest in photography is purely a commercial one, that Mr. Walsham does not grumble at record photography as a business proposition. If he does not photograph an Oxford

college every month, he has discovered the business to be in the photography of articles of manufacture for catalogue other purposes, and has recently arranged a ground floor studio in the centre of London solely for this work.

#### A NEW COUNTRY STUDIO.

WE have recently been interested in seeing evidence of the interest taken in the more suitable furnishing and decoration of studio. The recent series of articles by Mr. Butt on this subject have, we know, created the desire among many of our profes-



readers to take a step forward in the arrangement of their studios, and the desire in many cases has passed into an accomplished fact. The building of a new studio affords a special opportunity for the exercise of the photographer's own taste in such matters. It was therefore with some interest that we inspected the newly opened establishment of Mr. Keith Dannatt in High Street, Haslemere, Surrey. Haslemere on a perfect midsummer day is as attractive a little town as one could find anywhere in England. But it is its vicinity a population of wealthy and cultured people, mar-



whom have been drawn to the neighbourhood by its literary associations—it was the home of Tennyson—as well as by its high position. Moreover, its train communication with London is sufficiently bad to prevent it becoming the resort of the cheaper City man, all of which is in the favour of the photographer. Mr. Keith Dannatt, whose aim is at portraiture such as will appeal to people of artistic taste. The premises are not large, but the



throughout with a nice regard for an harmonious colour scheme. As shown in the second of the two photographs frequent use of a background of oak panelling, the walls of the studio covered elsewhere with a coarse Arras cloth, on which, at the first visit, was arranged some fifty of Mr. Dannatt's photographs of landscape as well as portrait. Although no disguise of the pose of the studio has been attempted, the furnishing has been tried out so as to create an impression of brightness and comfort to the visitor, and this at no great expenditure of money. Mr. Dannatt's work has been seen at recent exhibitions—he is also a member of the Postal Camera Club—and his entrance into professional photography already shows that he is a student of grace and pose, and successful in getting naturalness in the expressions of his sitters. He did well among people who appreciate a personal interest in the photographs made of them.

## Photo-Mechanical Notes.

### The Copper for Half-tone Blocks.

Patent has been granted to a German engineer, named Hugo H. Horgan, of 90, Berliner Strasse, Rixdorf, Berlin, for the use of a copper film soldered to a support of zinc as the material for engraved metal plates. It is stated in the specification (No. 108) that the copper etching plates manufactured in accordance with this method have the advantage, as compared with plates wholly of copper, that the thin rolled copper sheeting used is considerably denser structure, and it is furthermore cleaner, so that etchings will come out better and sharper.

### Half-Tone Becoming Unpopular?

H. Horgan, in the current "Inland Printer," raises a question which may be well considered by English photo-engravers. He says that one of the surest tests of the favour with which artists regard illustration are held is to be found in the popularity of monthly magazines, whose publishers are constantly on the lookout for the kind of illustration that will best suit the public at the same time be inexpensive and practicable. What is meant by this refers to the whole expense attached to an illustration, from the ordering of it to the binding in the magazine. For instance, a publisher finds he can purchase a photograph of a building for as little as 5s. to portray for \$5, while a pen-and-ink drawing of the same building would cost \$50. Now the leaf of book paper on which the engraving of the pen-and-ink drawing is printed might cost 1s. for the edition of the magazine but \$50, while the leaf of coated paper on which the half-tone would be printed, in the same edition, would cost \$150, making a difference of over \$50 in favour of the pen-and-ink drawing, without counting the saving in the line-cut cost compared with the half-tone, or the little trouble in making the line cut is to the half-tone. Now the question comes whether the publisher, which style of illustration pleases the reader? If the publisher gives the greater satisfaction, is it worth the difference? That the publisher is deciding more and more in favour of the line cut can be determined by comparing the number of line cuts in the monthly magazines. In one of the May issues there were fourteen line cuts to four half-tones. It cannot be said that photo-engravers are responsible for the loss in favour of the line cut, for their product has greatly improved. The trouble has not entirely to the printing, and for this the publisher is responsible. The high price of paper has resulted in the use of a line cut, on which the pressman cannot get the results he desires, so he has ceased to take pains, and the consequence is that the line cut does not please the public, while the line cut that is almost any kind of paper with good results, and with the aid of the pressman, is meeting with favour. Engravers must catch this change and take more pains with the engraving work, but, above all things, get better prices for that class of work on account of the increased care which will be required in it."

A PHOTOGRAPHER, who left a letter stating that his name was Hart, was found dead, on July 10, in a bedroom he had hired for a few nights in Cheltenham Place, Brighton. It is believed he had taken poison. The man came from London.

## Exhibitions.

### THE ALLIED ARTISTS' ASSOCIATION, LTD.

There is quite a commercial ring about the style of this latest combination of artists, which appears to be a sort of limited liability company and trade union in one. It holds its first London Salon in the Albert Hall, where there may be seen between three and four thousand works of art, as well as a special section devoted to Russian arts and crafts, under the direction of Princess Marie Tenicoff. The gallery of the hall constitutes the main picture gallery, but the crush rooms and the fronts of the grand tier of boxes are likewise lined with oil pictures. As may be supposed, the great mass of works makes a visit rather a fatiguing undertaking, and the most pleasant part is the proportionally small amount of sculpture, ranged in the arena. Most of this is of a high order of merit. As to the oil and water colours, they include both bad and good, for it is a primary principle of the association that each member has a right to exhibit five works without a veto from a selecting committee. Such a thing does not exist in the A.A.A. In a few cases, but only a few, one feels that a selecting committee would have found useful occupation. When it is considered that all these works are sent largely by artists unknown to the public, it must be admitted that there are an astonishing number of clever painters in these islands. The well-known names figure largely too, however, and many artists of note have joined the association who do not show works this year.

In regard to the hanging and arrangement of the exhibition, it is impossible to say much in the way of praise. The hanging committee, elected by vote from themselves, have had to do their stupendous task in a few days, and in such extenuating circumstances we must find indulgence for the crowding, the rough and ready methods of display, and other unfortunate drawbacks.

Time alone will show whether a non-selective exhibition will bring to the front any hidden geniuses, and whether the A.A.A. will find it possible to live up to its highly creditable manifesto. Such an exhibition as this appears to us to bury, as effectually as ever, whatever worthy works the inducements of the association may invoke.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for Patents have been received between June 29 to July 4:—

LENSES.—No. 13,902. Improvements in and relating to photographic three-lens objectives. C. P. Goerz A.-G. and Walther Zschokke, 31, Bedford Street, Strand, London.

PLATES.—No. 13,999. Improvements in packages for photographic plates or films and in means for the successive exposure of said plates or films. Optische Anstalt C. P. Goerz A.-G., 31, Bedford Street, Strand, London.

DEVELOPING TANKS.—No. 14,024. Improvements in tanks for developing or treating photographic plates or films. John Owden O'Brien, 6, Bank Street, Manchester.

FLASHLIGHT.—No. 14,030. Improvements in and appertaining to repeating flashlight apparatus, partly applicable to gun-form cameras. Emma Ella Crankshaw, 9, Temple Hey, Liverpool.

DARK SLIDES.—No. 14,127. Photographic dark slide and changing bag combined. Thomas Fenwick Pearson, 94, Church Road, Islington, London.

CINEMATOGRAPH.—No. 14,257. Improvements in disc cinematograph. Ferdinand von Madaler and Alfred Edwin Wallis, 18, Southampton Buildings, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

PIGMENT PRINTING.—No. 20,740. 1907. According to the present invention, instead of the chromium compounds in a photographic solution for pigment printing, ferric salts, cerium salts, and uranium salts are employed, and they are not mixed with the common

albumens, but with alkaline albuminates or acid albumens. These albuminates and albumens are insoluble in pure water, but are soluble without any alteration by means of neutral salts, alkalis, or acids, and which can again be precipitated from these solutions.

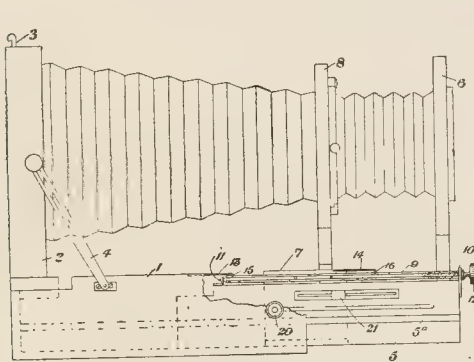
When these derivatives of albumens are exposed to the light after they have been mixed with a ferric salt, which, when exposed to the light, decomposes in developing an insoluble oxide, they become less easily soluble in their ordinary solvents. In this manner emulsions can be produced by means of ferric salts, cerium salts, and uranium salts, the sensitiveness of which is nearly equal to the sensitiveness of chromic salt emulsions.

To produce the colloidal substance, the albuminates are dissolved in water, to which previously a solvent (ammonia, borax, carbonate of soda, etc.) has been added; hereupon the ferric salt is added, and, further, the pigment and emulsion is spread on a glass slab or paper. The sensitiveness of the sensitive paper which has thus been produced can be further increased through the addition of colouring substances, such as, for example, metallic violet, etc.

In this manner the papers are sensitised for the yellow and red rays. After the paper has been exposed, the photograph is developed in a bath, which is adapted to dissolve the albuminous substance (ammonia, carbonate of soda, oxalate of potassium).

These papers offer, compared with the chrome papers, the advantage that, although being much more sensitive than the latter, they keep for a much longer time after being sensitised. Jacques Theodore Gateau, Aix-en-Provence, France.

**FOCUSsing MECHANISM.**—No. 18,430. 1907. This invention relates to a method of so adjusting the relative parts of enlarging cameras as to ensure the image being in correct focus at given degrees of magnification, or for stopping the front of ordinary folding cameras when withdrawn, at such positions as will ensure the correct focus of objects at various distances from the camera, according to a pre-arranged scale. A rod is provided, preferably of octagonal section, pivoted at its ends, one of which is provided with a milled head for bringing the various flats of the rod into the operative position. This rod is fixed on to the baseboard of the camera by means of brackets, in such a position that the lens and negative holder run parallel with it. The holders are provided with suitable spring plates which press into cross cuts on the uppermost flat of the rod. Preferably, seven of the flat surfaces only are cut, one



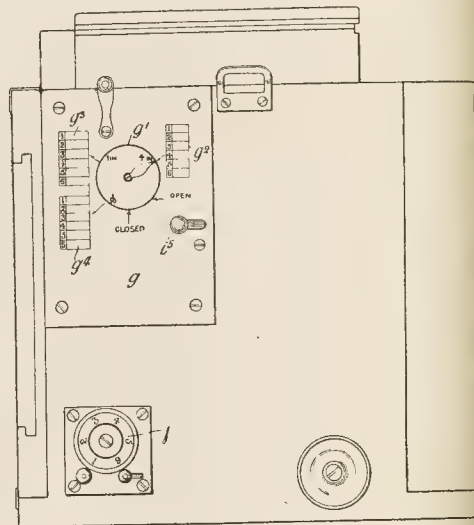
being left plain to allow of the free run of the parts when desirable. The invention may be applied as well to controlling the position of the lens and sensitive paper holder.

In adapting the system to the folding camera the rod is fixed to the baseboard, and the spring plate for engaging in the cuts of the rod would be attached to the lower surface of the front carriage, so that when the front is withdrawn the spring would engage in the particular cut which is uppermost, this having been chosen and adjusted on opening the camera. The cuts are set out according to the focus of the objects at various distances. A rod with any convenient number of flat surfaces might be used if desired. Herbert Holmes and Albert Edwards, Walthamstow; and Houghtons Ltd., High Holborn, London, W.C.

**ROLLER BLIND SHUTTERS.**—No. 18,430. 1907. The invention relates to cameras in which the shutter takes the form of a roller blind,

with a series of apertures of different widths, the time of exposure being determined by the size of the particular aperture and the speed at which the blind is moved. To simplify the operation of such cameras, a direct-reading mechanical indicator, which is operated by the shutter setting mechanism, is provided, and at a glance the exposure speed which will result from any combination of shutter opening and spring tension. Also the shutter has a simplified winding up, and is combined with a releasing mechanism, which controls the movements of the pointer or index finger of the improved exposure-time indicator.

The blind has any required number of graduated openings, provision is made for adjusting the roller spring to any number of different tensions, according to the number of exposure conditions which the shutter is to afford.



To enable the operator to obtain at a glance what exposure will result from the use of a given aperture with a tension of roller spring, there is arranged adjacent to each aperture marks on the central scale, a table (g g' g''), to which pointer is directed when registering with the said aperture and the corresponding shutter-aperture is set for use. Lancaster, Camera House, Broad Street, Birmingham.

**PRINTING FRAMES.**—No. 18,600. 1907. The invention consists in the construction of the backboard of the ordinary existing frames with special hinges, so that it may be opened without its removal. It also carries projecting pins, which fit into vertical slots in the frame, and which prevent any sliding movement. Rollers are mounted eccentrically in the under half of the frame immediately behind the backboard, by means of gudgeons at their ends, the gudgeons being so constructed eccentrically that their axes correspond with the axes of the rollers. The rollers thus revolve with a cam-like motion, and being mounted parallel to the plane of the frame and backboard, exert a pressure which is distributed and can be easily regulated. The terminal rollers are enlarged to form knobs, by which they are released. Richard James Baker, 156, Llandaff Road, Cardiff; and William Jones, 145, Windsor Road, Penarth.

**REVERSING BACKS.**—No. 19,108. 1907. In this invention a wire rod is provided, which lies in a lateral channel along the side of the camera body, the end of the rod being turned down at an angle along the adjoining side of the camera, so as to form a handle. The usual flat metal springs which project over the top edge of the reversing back and engage studs on the backboard, holding it in position, are attached to this rod, instead of being fixed in the camera body. On the rod, and immediately adjacent to the spring, is fixed a circular collar or boss, provided with a flange on its upper side. The springs in their normal positions press against these flat faces, but when the rod is turned the springs are released and the reversing back is released. The spring plates are provided with slopes on the parts opposite the studs on the re-



k, the latter is replaced by simply pressing it towards the era body in the usual manner. Herbert Holmes and William ert Edwards, Walthamstow; and Houghtons Ltd., High born, W.C.

ATOPHGRAPH.—No. 19,713. 1907. The claim is for an indicating aratus for synchronously running cinematographs and talking hines, and its features are as follows:—(1) Two pointers, the tive speeds of which indicate the speeds of the machines, and tric lamps, which also serve the same purpose. (2) Mechanism lighting one lamp if the machines are running synchronously, or or the other lamp, according as one machine is running faster n the other. (3) Contacts carried on the shafts of the pointers controlling the connections of the lamps. (4) Mechanism for trolling the electric lamps. (5) Electrical means for controlling pointers. (6) The combination of the means for operating the ters with the means for controlling the lamps. Jules Green- m, Friedrichstrasse 226, Berlin.

## New Trade Names.

ONT.—No. 300,063. Cinematograph projecting machines and atograph films for use therewith, photographic cameras. The mont Company, Chrono House, 5 and 6, Sherwood Street, adilly Circus, London, W., cinematograph and photographic, trical and mechanical specialists. January 31, 1908.

N (cock in the act of crowing, surrounded by oval, bearing the ds, "cinématographes and films, Pathé Frères, Paris").— 301,610. Cinematographic apparatus and accessories belonging lass 8 relating thereto, including films bearing taken photohs for use with cinematographic apparatus. Compagnie érale de Photographes, Cinématographes, and Appareils de écision, 98, Rue de Richelieu, Paris, France, manufacturers, ch 23, 1908.

## CATALOGUES AND TRADE NOTICES.

OND-HAND APPARATUS.—Those desirous of obtaining high-class atus for a moderate sum should obtain the list of shop-soiled econd-hand goods which Messrs. Newman and Guardia, Ltd., 2, Shaftesbury Avenue, London, W., are offering at consider- educed prices. The items include a number of the well-known nd G." cameras, together with other cameras and lenses of lass manufacture, many useful accessories, and a large selec- f leather cases of all sizes, which are offered at prices much e original cost. As many of these bargains are already ntending purchasers would do well to lose no time in either g for a list or paying a visit to Messrs. Newman and Guardia above address, where the goods may be viewed.

AK DEALERS' LIST.—The Kodak Company send us a list, pre- solely for issue to dealers in the British Isles. It is a volume pages, and fully lists and illustrates a very great variety of utus and materials. In fact, there is scarcely a leading maker eras or sensitive materials who is not represented in its pages. raphic code is conveniently embodied in the list, which can e used by the dealer for obtaining goods easily at short notice. e special accessories will be found described in its pages, and t is certainly a most comprehensive one. It is obtainable free- alers on application to Clerkenwell Road, London, E.C.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

SATURDAY, JULY 18.

Stereoscopic Society. Outing to Lea Backwater.  
Suburban Photographic Society. Excursion to Carshalton and Beddington.  
E. Dixon.  
Middlesex Photographic Society. Outing to Great Gaddesden.

MONDAY, JULY 20.

London Photographic Society. Monthly Competition—(Prints).

WEDNESDAY, JULY 22.

Camera Club. Members' Night. F.C. Tilney.  
Middlesex Photographic Society. "The History and Development of age." T. W. Reader, F.G.S.

## Commercial & Legal Intelligence.

LEGAL NOTICES.—A receiving order in bankruptcy has been made against Edwin Abbott, artist and photographer, of 47, Woodhouse Lane, Leeds.

FRAUDULENT "PHOTOGRAPHER."—In Edinburgh Sheriff Summary Court last week a middle-aged man, named George Wood, admitted having pretended to a number of persons in Musselburgh and other places in Mid-Lothian that he took photographs on postcards and charged twopence each for them, and that if they desired he would take their photographs and send them copies of postcards in the course of ten days or a fortnight on receiving payment of twopence for each copy desired, and thus induced these persons to give him an order for their photographs, and to pay him sums of money, which aggregated 18s. 6d., consisting mostly of amounts from 1s. to 2s. 6d., which he appropriated without supplying or intending to supply the photographs. Accused had two previous convictions for fraud. Sheriff Orphoot remarked that the public must be protected from such systematic and ingenious imposition, and passed sentence of twenty-one days' imprisonment.

A CAPTAIN'S BANKRUPTCY.—A sitting of the Court of Bankruptcy was held last week for the public examination of Graham Archibald Hope, described as formerly of an address in Palace Street, Bucking- ham Gate, a captain in his Majesty's Army. It appeared that the debtor joined the Army in 1893, and retired in September, 1904, with the rank of captain. Since the middle of 1905 he had been occupied in journalistic work, and for a few months last year was also engaged as an actor. From November, 1905, until March of last year he was a partner in a photographic business carried on in New Bond Street, but took no active part in it. The debtor for a few months had also assisted in the business of a company formed to exploit a patented invention relating to a clip for ladies' dresses. He attributed his failure to the trading of that company and of the photographic business having been unsuccessful. The statement of affairs showed total liabilities £693, and no available assets. The examination was closed.

## News and Notes.

THE YORKSHIRE PHOTOGRAPHIC UNION.—The Handbook of the Union for 1908-9 is, as heretofore, designed to be of practical utility to the secretaries of all its affiliated societies, inasmuch as a selection from the list of lectures therein placed at their disposal will doubtless provide them with much interesting material for their winter programme. Also the names of lecturers and their intimate acquaintance with the subject matter of their lectures should prove an easy means of filling the societies' meeting rooms. Should there still be any Yorkshire societies who have not availed themselves of the privileges afforded by affiliation they would do well, we think, to write for particulars to the secretary of the Union, Mr. Ezra Clough, 10, Farcliffe Road, Bradford.

MR. DAVID BLOUNT, of James Bacon and Sons, photographers, Newcastle, was summoned to Leeds in connection with the Royal visit, and at Harewood House had the honour of photographing His Majesty King Edward.

PHOTOGRAPHS WANTED OF BLACKPOOL.—The Blackpool Town Council have decided to organise a competition for photographs for use in the next issue of the official guide. Councillors having inquired about "the travelling camera men who swarmed the town in the season," it was stated that prizes would not be given to this class, but an amendment that the competition be restricted to persons who paid rates in Blackpool was defeated.

"URBANORA" TO THE PALACE THEATRE.—After a continuous, as well as a phenomenally successful, run of 420 consecutive weeks (or rather more than eight years) at the Alhambra Theatre—which surely constitutes a record in stage booking—the unrivalled exhibi- tion of "Urbanora" Animated Pictures will be, on and from Bank

Holiday, Monday, August 3 next, transferred to, and exclusively shown at London's leading variety theatre, the Palace. That the cinematograph now forms the staple item in the ideal vaudeville programme Mr. Alfred Butt has long recognised, and that Mr. Charles Urban possesses a supreme knowledge of cinematography and all that appertains to it has been universally attested by the Press. Henceforth, therefore, the "Urbanora" Animated Pictures, with their practically illimitable range of subjects, will be kept upon the highest rung of the bioscopic ladder, and, being frequently varied and ever topical, will form yet another distinctive feature in the Palace's always diversified and refined programme.

WHITAKER "PHOTO-STAINS."—A correspondent writes:—"I notice in your current correspondence column that a Mr. Spence asks about 'Whitaker' photo-stains, and that you have been unable to trace them. I have used them for some time. I purchase them locally from 'Butcher and Curnow,' Blackheath. The bottles are labelled, 'Whitaker, Chemical Works, Kendal.'"

THE "MONTHLY PHOTO JOURNAL" is a new publication from Japan, devoted, as its name indicates, to photographic art. It is published by R. Konishi, Nichome, Honcho, Tokyo, Japan, entirely in Japanese, and contains some interesting illustrations in half-tone and colotype.

OPTICAL CONVENTION, 1909.—The permanent committee, appointed at the first Optical Convention in 1905, has now taken the preliminary steps for holding the second Optical Convention in London in May, 1909.

An exhibition of instruments will be arranged, which will be scientific in character, and will consist principally of instruments manufactured in this country; it will be designed to display recent progress, and to stimulate future effort. A unique opportunity will thus be afforded of bringing optical and other scientific instruments to the notice of manufacturers, of scientific men, and of the public. It is further proposed to invite from foreign manufacturing firms special exhibits of instruments which are either not made at all in this country, or only made to a comparatively small extent, so that the visitors to the exhibition may see the best of what is being done in foreign countries. An illustrated catalogue of the exhibition will be prepared, which will fully describe the special character and construction of particular instruments. Not only will this increase the value of the exhibition from the scientific point of view, but it will also serve directly the interests of manufacturers and dealers. It is hoped that such a catalogue may be specially serviceable to manufacturers in making their instruments known in colonial and foreign markets, and it may be remarked that the catalogue of the 1905 Convention was very successful in this direction. A guarantee fund has been started to enable the committee to begin work, and a list of the contributors to, and guarantors of, a general fund will be issued shortly. The hon. treasurer, Mr. James Aitchison, 14, Newgate Street, E.C., will be glad to receive further promises for the guarantee fund or contributions towards the expenses of the Convention.

A preliminary list of officers has been made, consisting of the acting president, Dr. R. T. Glazebrook, F.R.S., director of the National Physical Laboratory; hon. treasurer, Mr. J. Aitchison, 14, Newgate Street, E.C.; hon. secretary, Professor W. Cassie, Brantwood, Englefield Green, Surrey. The Executive Committee consists of: Chairman, Dr. R. Mullineux Walmsley, F.R.S.E., Principal of the Northampton Institute; hon. secretary, the hon. secretary of the Convention. Finance Sub-committee: Chairman, the hon. treasurer of the Convention; hon. secretary, the hon. secretary of the Convention. Papers Sub-committee: Chairman, the acting president of the Convention; hon. secretary, Mr. S. D. Chalmers. Exhibition Sub-committee: Chairman, Mr. W. Salt; hon. secretary, Mr. J. H. Sutcliffe. Catalogue Sub-committee: Chairman: Mr. W. Rosenhain; hon. secretary, Mr. A. N. Disney.

With a view to arousing interest in the Convention throughout the country generally, a provincial sub-committee is being formed, with Professor J. H. Poynting, F.R.S., J.P., of the University of Birmingham, as chairman, and as soon as possible a list will be published of those who have consented to act as local secretaries.

AERIAL COLOUR PHOTOGRAPHS.—Professor Miethe, writes the "Daily Mail," has taken some remarkable colour photographs from

a balloon by the three-colour process, which give a wonderful idea of what a large town looks like as it fades away into the distance while an ascent is being made. Colour photographs, taken in one tenth of a second at a height of 500 yards, show how lifeless the bright colours of nature appear when observed from the sky.

WHITewASHING ROOFS.—The output of a cotton mill is appreciably affected by the comfort of the operatives, and in this tropical weather comparative coolness means much. The "Manchester Guardian" says that several cotton manufacturers and spinners have recognised this, and are keeping their mills cool by the simple and inexpensive plan of whitewashing the roofs. It is surprising that this practice is not more generally adopted, not only for cotton mills, but for buildings of all kinds. No doubt the roofs are unpleasant to the eye when under the hot sun, but one does not see much of them unless it be from a considerable distance, in which case the glare loses much of its painfulness. As a rule, the roofs only require whitewashing once a year, at the beginning of the summer. Perhaps it is too much to expect whitened walls, but in large, smoky towns, with tall buildings and narrow streets, whitewashed walls would add greatly to the brightness, cleanliness, and coolness of many a purlieu.

## Correspondence.

\*• Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

\*• We do not undertake responsibility for the opinions expressed by our correspondents.

### SLOW ORTHOCHROMATIC PLATES FOR THE PHOTOGRAPHY OF LIGHTNING FLASHES.

To the Editors.

Gentlemen,—Some two years ago I suggested, through the medium of the "B.J." (July 27, 1906, p. 598), that the Wellington "Ortho-process" plates were excellent for the photography of clouds, whether from a scientific or pictorial point of view. By reason of their being slow they give sufficient contrast when developed with hydroquinone to show the clouds form, and the fact that they are also orthochromatic will serve to give a truer colour rendering, a point that is most essential when clouds are photographed as an aid to scientific research.

Should the photographer, however, require a pictorial cloud effect he might easily obtain the necessary result by using the same plate, but with a pyro-soda developer. I would recommend the following using equal quantities of each of A and B:—

A	Pyrogallie acid .....	½ oz.
	Metabisulphite potash .....	½ oz.
	Water .....	40 oz.
B	Sodium sulphite .....	4 oz.
	Sodium carbonate .....	4 oz.
	Water .....	40 oz.

I now take this opportunity of saying that indeed these plates are excellent for the photography of lightning. In the former article referred to a rapid iso plate as necessary for lightning photography, but experience has made me greatly change this idea. I am enclosing a small selection of photographs of lightning taken on "Ortho Process" plates during the storms of June 4 last and on July 4. I think you will agree that they bear out my statement very well.

I find that in using a fast plate we are apt to get a great deal of fog, through any sheet-lightning that may chance to come during the interval between the forked flashes, whereas in a slow plate this has little or no effect. I was particularly successful during the storms of June 4 last, having exposed some dozen or more plates, and without exception, I obtained pictures of lightning on all of them. I am, dear Sirs, yours faithfully,

J. HOWDEN WILKIE, F.R.P.S.

[The prints sent by our correspondent are evidently from negative very free from fog.—EDS. "B. J."]



# Answers to Correspondents.

*matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C."* Inattention to this ensures delay.

*Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.*

*Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., Wellington Street, Strand, London, W.C.*

*For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 7d. each photograph, to cover cost of registration fee, form, etc. 100 unmounted copies of each photograph must be sent with the application.*

## GRAPHS REGISTERED:—

*Driver, Riddlesdale House, Ardsleigh, near Colchester. Photograph of Ash Farm at Coggeshall, Essex.*

*Keys, Studio, Market Place, Denton, Manchester. Photograph of Denton Hall Club and Committee with Cup.*

*Mr LEVY (Asnières).—You will have seen now the paragraph page 522 of last week's issue.*

*(Blackheath).—Many thanks for your note, which, you see, we are using.*

*W. G. NEY.—It is practically impossible for us to say unless you use the sensitive paper. Surely you can tell whether a paper is P., bromide, or gaslight. It must be one or the other.*

*S.—The modern portrait lens has a small field, over which definition is obtained. A lens of 6 or 7 inches focal length—do not say what focus yours is—will cover a carte de visite, not much more.*

*on P.O.P.—Could you, through your journal, let me know is the cause of the stains on enclosed postcards? A gentleman brought me over a hundred postcards to tone, and I made up a bath for them, of the same as I had used myself before. Over 100 of them have these stains on them. I cannot think it is fault of the bath, as I toned some for myself at the same time, they were all right. Do you think it is anything to do with the cards? They are —'s cards.—STAINS.*

*One of your samples suggests that the mark is due to two cards being together in the toning bath. In the other cases possibly the printer handled the cards too freely, and so produced greasy marks that refused to tone. Beyond this we cannot suggest any remedy for the spots. It is very unlikely that the cards themselves are to blame.*

*ON TONING.—We are anxious to tone our bromide postcard to a certain shade, but after experimenting only arrive at the results of faded samples. We have marked on back of each the formula used. Can you assist us by giving a formula that will produce the desired tone or give us any help in the matter?—W. A. B.*

*I do not know any certain method of producing the tone shown on your specimen by ordinary methods of sulphide toning. Possibly the thiomolybdate toner put on the market by H. Edmund and will fulfil your requirements most nearly. The hypo alum is probably the next best, and if you try this with various strengths of bromide paper you may get very near the right tone. Sample tones you send are by no means as good as they should be. For the Kodak formula you want correctly exposed and quite developed prints, and you should use quite fresh pure sulphide; good tones are hopeless otherwise. With the thiomolybdate a rather weak print is best, as the strong solution is an insufferable. For hypo alum toning you want strong, fully developed prints, and the toning bath must be an old, well-used one to get good tones. It may be improved by the addition of a little silver salt if it is too fresh.*

*S.—1. The lens, as we reported in our issue of June 5, is certainly an excellent one. Most probably it is exactly similar in construction to the former of the two mentioned, the patent in which has expired. Whether it is quite equal in quality depends on*

*workmanship. 2. Both of the two you name are first-rate instruments. 3. There is very little difference. One is practically the same as the other.*

*DEALER.—What your friend says is quite correct. If what you are doing reaches the ears of the Pharmaceutical Society it will be down upon you sharp for its £5 penalty. It is only members of that body who are allowed to sell certain poisons, and bichloride of mercury is one of them. Whether you label the bottle poison or not will make no difference whatever, the Act is still infringed.*

*RAIN OR DISTILLED WATER.—I have often read in text-books of photography, "use rain or distilled water" in making up solutions. My reason for writing to you is that I am about trying my hand with the wet collodion process for lantern slides, and I want to know whether ordinary rain water is as good as distilled water for making the silver bath, as the latter is difficult to get in country places.—GEO. SIMKINS.*

*Rain water is, theoretically, as good as distilled water if it is pure, which is rarely the case when it is caught from the roofs of buildings. Then it is usually contaminated with organic matter. If it is caught in vessels in the quite open country it can generally be relied upon. But if caught in the neighbourhood of large towns—particularly manufacturing places—the probability is that it will be more or less impregnated with impurities of one sort or another. However, we should recommend you to get the cleanest rain water you can, put it in a white glass bottle, and add a few crystals of nitrate of silver to it, and then expose to sunlight for a few days. Then, probably, the water will be discoloured, a precipitate thrown down, and when that is filtered out the water can be as safely used for silver solutions as if it were distilled water.*

*DISTORTION.—Herewith I enclose prints from two negatives of a tall building. My customer complains that the sides of the building do not look right, as they are not parallel, and he will not have the pictures, or pay for them, unless I can produce better ones. The lens is a new one (—'s rapid rectilinear), which I bought, partly, to execute this order with, as he has hitherto been a good customer for portraits. When I bought the lens I was told that it was perfectly rectilinear, and would give absolutely straight lines, but you see by the examples that it does not, as the sides of the building lean inwards towards the top. Shall I not have the right to demand the money I paid for the lens returned? —PROVINCIAL.*

*Your examples show no fault whatever in the lens. The lines are perfectly straight, as all rectilinear lenses yield them. The convergence of the lines in the upper part of the picture is no fault of the lens, but that of its user. The camera was tilted to get the upper part of the building in the picture, and the swing-back, or rising front, was not brought into requisition.*

*LENS FOR GROUP.—I have arranged to take a wedding group next week, the size to be 12 by 10. The only lens I have that will cover that size is a portrait lens 4½ in. in diameter, but it does not cover well to the corners, even when tolerably well stopped down. A friend has offered me the loan of a 12 by 10 R.R., by Dallmeyer. Which of the two would be the best for me to use? Would the R.R. be too slow for the purpose? I am putting this query to you, as I have had but little experience out of the studio.—WALLACE.*

*By all means use the R.R. It will cover the plate better than the portrait combination, and will, out of doors, be quite rapid enough if moderately quick plates be employed.*

*P.O.P. PERMANENCY.—Would coating P.O.P. prints with enamel collodion be of any advantage in regard to adding to their permanency?—J. Rosso.*

*Theoretically it should be, because the collodion protects the prints from the atmosphere, but, in practice, it seems to have little or no effect. The best way of adding to the stability of gelatine prints is to very thoroughly fix them, and then ensure that they are properly washed.*

*HANTS.—Any good lens, whether a rapid rectilinear or a single landscape, of 6 in. focus should cover the quarter-plate right up to the corners. But the latter will require to be stopped down to about f/16 in order to get a sharp and crisp image.*

*R. H. HALE.—As we are continually saying, in answering correspondents, the only way to ascertain if a photograph is copyright is by searching the register at Stationers' Hall. In your case there is the difficulty that you do not know the name of the photographer who*









MEMBERS OF THE TWENTY-THIRD ANNUAL PHOTO

HELD AT

*Henry Greenwood & Co., Publishers,  
24, Wellington Street, Strand, London.*



JULY 17, 1908.



CONVENTION OF THE UNITED KINGDOM.

5 TO 11, 1908.

Negative by LA MAISON ALEXANDRE,  
14, Place Du Musée, Brussels.





# THE BRITISH JOURNAL OF PHOTOGRAPHY.

No. 2516. VOL. LV.

FRIDAY, JULY 24, 1908.

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## SUMMARY.

W. E. Debenham recommends hydrochloric acid as a ready method of reviving tarnished daguerreotypes. (P. 560.)

ent has been taken out in France by the Lumière Bros. for a process of manufacturing a colour screen-plate of geometrical pattern. (P. 57.)

Balagby, in the concluding portion of the article dealing with the use of diamidophenol in acid solution as a developer, gives the method for development of assorted exposures, time and instantaneous for the development of bromide papers and for the production of warm tones on lantern slides. (P. 560.)

complaints are being made in Germany as to the harm done the trade abroad by the Government's insistence on the cards giving the names of those producing them. (P. 558.)

correspondent raises the question of the sending of prints to exhibitions unframed. (P. 574.)

ideas of an American agent for advertising a photographic process. (P. 563.)

first part of an article by Mr. Harold Baker on photogravure the professional photographer deals with the cleaning and graining of the plate. (P. 566.)

description of a method alleged to be suitable for the production of portrait prints in several colours by a toning process is given on p. 567.

the notes by way of caution to those who have offered to them methods relating to photography are the subject of an editorial on p. 558.

W. Dieselhurst contributes a description of measuring the focal-plane shutters. (P. 564.)

exposure indicator, a studio stand, a continuous printing machine, and the telegraphic transmission of pictures are among the news of the week. (P. 569.)

ful advice on a number of practical topics is contained in the article by Mr. A. Lockett, "Some Photographic Fallacies." (P. 565.)

## EX CATHEDRA.

### The Northern Exhibition, 1909.

January 6 to 27 is the period during which the Northern Exhibition is to be seen next year in the City Art Gallery, Manchester. Mr. S. L. Coulthurst, as secretary of the exhibition committee, of which Dr. Lakin is chairman, is evidently laying his plans with the single aim of making the show equal to, if not an advance on, what has been done at Liverpool. A feature is to be made of Autochrome and other methods of colour photography, and it looks as though the Manchester committee was going to be busy through the Christmas holidays. They have certainly done well in appointing but one judge, and have been fortunate in persuading Mr. J. C. S. Mummery to undertake the office. All would seem to presage a great show in Manchester, for particulars whereof the prospectus and entry form, obtainable from Mr. Coulthurst, Broad Oak Road, Worsley, Manchester, should be consulted.

\* \* \*

### A New Lumière Screen-Plate Process.

The firm of A. Lumière et ses Fils has taken out a patent in France for a process of manufacture of a screen-filter plate which is quite different from that employed for the Autochrome plate. The published specification, No. 386,147, explains it to be a method of forming a filter-screen of definite geometrical pattern by imprinting lines upon a sheet of gelatine-coated glass. Two-thirds of the surface is first coated with a series of lines in greasy ink. These lines serve as a temporary resist; the uncovered parts of the plate (one-third of the surface) are treated with a dye solution, which penetrates the gelatine, and, after drying, the whole plate is coated with a varnish which is without action on the greasy ink and is insoluble in solvents of the latter. The ink is then removed with a solvent and a series of varnished coloured lines left on the plate. One half of the total surface is then covered with a series of lines in greasy ink, a second application of dye made, a varnish applied, and the ink resist removed as before, after which the remaining third of the plate is completely filled by a bath of the third dye. The process is done without registration, and would appear to have been worked out by the Lumières as an alternative and cheaper method of preparing a screen-plate. To what point the process has been completed on a manufacturing scale we have no information at all, nor is there any reason whatever to suppose that plates made by the new process are coming on to the market in the near future. We shall refer to this and other new features in screen-plate processes in the "Colour Photography" Supplement of August 7.

### German Picture Postcards.

It is a well-known fact that German picture postcard manufacturers have for a long time been making strenuous efforts to secure the picture postcard market of the world. Their activities extend in all directions, and they have in all important centres and tourist resorts throughout the world energetic representatives, who are so skilled in pushing these wares that the market shows a remarkable and steady yearly increase. In fact, for some unaccountable reason, they seem to have a monopoly of many districts, which the native manufacturers, who might benefit most from the industry, apparently consider it not worth their while to cultivate. Yet, however successful he may be abroad, the German picture postcard manufacturer has his difficulties to overcome at home. Though the authorities recognise the importance of the industry, and point with some pride to the prominent place it occupies in the export list, they do not scruple to come down upon them now and then with a somewhat heavy hand. Of late the police officials have begun to harass the manufacturers, and it is quite the order of the day to learn that they have confiscated large consignments of postcards prepared for export. The reason they give for this is not because the postcards contain anything that might be calculated to corrupt the politics of the country, or that the pictures are immoral, but merely that they do not conform to the law and give on each picture postcard the name and address of the printer and publisher. The manufacturers hold that it is not necessary to observe this law when the postcards are intended for export. Further, they say that to insist on the enforcing of the law would greatly handicap the trade, and possibly end by ruining it, as, according to the manufacturers of picture postcards, there is abroad a pronounced prejudice against buying postcards which are known to be made in Germany. Representations have been made through the Chamber of Commerce to the Home Minister and other responsible authorities with a view to putting an end to this annoying police interference, and several newspapers have taken sides with the manufacturers in bringing pressure to bear in these quarters to let picture postcards pass out of the country without bearing upon them the names and addresses of those responsible for their production.

\* \* \*

### Cheap Railway Fares for Photographers.

Recently the idea has been revived that photographers should be able to obtain concessions from the railway companies in the form of cheap tickets similar to those issued to fishermen. This is a very old idea, and up to the present it has not been received with any encouragement by the companies. The reply always is that photographers travelling in parties of twenty or so can already obtain concessions in the way of reduced fares, just like any ordinary excursion party, but the idea that single photographers should have special rates meets with nothing but a decided negative. For our own part we are rather inclined to sympathise with the companies in this matter. Photographers are numerous and rapidly increasing in numbers. Soon, those who do not possess a camera will be in the minority, and then the majority of passengers will be able to claim reduced fares by virtue of carrying their cameras. The precedent of fishermen's tickets is a bad one. It is only a very old privilege that still survives. It is comparatively harmless, seeing that fishermen are so few, but so far as we can see it affords no reason for any claim on the part of photographers to a similar privilege. The agitation for this seems to us to be hopeless and unreasonable. On the other hand, it might be possible to obtain a reduction in the number of persons required to make a privileged "excursion party." Many societies have trouble in securing the twenty usually

necessary, while they can easily find twelve or fifteen. the same time, however, we do not quite see why photographic excursion or "club outing" parties should be specially distinguished from other excursion parties receive special privileges, and we doubt very much if will ever make the companies quite see why they should be so singled out for favour.

\* \* \*

### Large Direct Portraits.

One of the ideas which our American professional friends have worked satisfactorily is the production of a large portrait, in addition to the cabinet negative for the filling of the customer's order. Most usual 10 by 8 plate is exposed, and the carefully retouched finished picture is shown with the other proofs, and in the majority of cases finds its way to the sitter's home. Only half the larger pictures so produced are purchased; the venture is a paying one, and the pictures declined in most instances available as specimens. Of course, a little discrimination is needed as to the kind of sitters whom to expose the large size plate. It has sometimes been suggested that this speculative work is in the nature of the free sitting, but this contention can hardly be good when a sitter has spontaneously come to the studio. It might be thought that one of the smaller negatives could be enlarged to, say, 10 by 8, but if this is done a proof should not be shown, as it may happen that the larger picture is much admired, the customer on seeing the small print exactly the same may decide against spending the extra amount on what is really only a duplicate. Besides, it is very doubtful if a plainotype or camera enlargement can be readily made which will have "quality" as a direct print; and, in fact, the work of making such a fine enlargement would probably involve a greater amount of work than the exposure of the plate for the sitter. If the small negative is retouched the retouched negative is very grainy when enlarged, and if the enlargement is made from the untouched original the amount of retouching required is equal to that needed on a direct negative.

### THE PHOTOGRAPHIC PROCESS-MONGER

The process-monger, if we can judge from letters we recently received, is still with us, and is, in some instances, doing a somewhat profitable trade. Some in this line of business are mere charlatans with plenty of plausible and a considerable amount of assurance, which they play to the best effect on those of limited experience in different photographic processes. It is no unusual thing for us to have letters saying that the writer has paid a sum of two, five, or perhaps more, guineas for a "secret process," which he afterwards finds is not new, and, moreover, has been published in this and other journals. In fact, instead of something new, it is really an old method dish up afresh.

The vending of so-called secret processes, or methods of working, is no new idea. It dates back to the daguer type days, when workers were anxious to gain what information they could to improve their knowledge. In the early days for trifling improvements they often paid good prices, it does not follow that all secret processes that have come into time to be vended are not genuine or novel. I call to mind the method of Sarony of making enlargements and also that of Edwards for the same purpose, which were exploited in the early seventies. The former of these consisted in the making an enlarged transparency direct from the negative, working that up, and from it making another negative either the same size or still further enlarged. At that time this procedure was really a novelty, although at the present time it is a very general system of work.



latter consisted in making a transparency by contact printing, by the albumen process, and, from that, making an enlarged negative. In this case the chief secret was in getting an unfixed transparency, as it was then assumed to be a softer and better result was thus obtained. Both the albumen and the contact processes yielded excellent results, and were really profitable at the time.

Then, again, there was the method of the late Mr. Herbert Faulkner for making backgrounds, which, now known as the powder process, was at first vended as a secret process. There were other methods about that time which were sold as secret or semi-secret, or were the subject of patents and licences, more or less exclusive. I may mention the Van der Weyde method of finishing photographic images by the incorporation with powder colour of a gritty substance (such as pumice powder or the like), which abraded the surface of the picture—a very general method of working nowadays, but a novelty in its time. The anti-Turner process of finishing was somewhat similar, and about the middle seventies the Lambert patented processes were brought forward, and for a time had very good run, substantial fees being paid for licence to work them.

Of the above processes were bona fide, and would do what was claimed for them, but many of those who paid money for the right to work them were disappointed. However, was not because the processes were at fault, but because the buyers had not the skill to produce results equal to the introducers of them, who were all skilled photographers, the last named (Lambert) in particular. The results done by the exploiters just mentioned were really fine, but the mere paying of a sum of money for the privilege of working the methods did not, of course, confer the skill necessary to produce similar pictures. We remember being present at several demonstrations by Lambert in the middle seventies, and the way in which he converted an apparently worthless collodion negative into a really good printing one was surprising. This he did by quite a few touches, on the mineral paper on the back with a stump lightly charged with plumbago, the work taking only three or four minutes. Here the final equation was the chief factor.

A vendor of an alleged secret process naturally does seek his customers invariably in photographic circles, and the obvious reason that the ordinary well-informed photographer is not a likely person to be taken in. But advertisements in the lay press are constantly being used, and for the sale of a formula for making P.O.P. Per-who reply to such an advertisement, which usually offers a high return for the expenditure of little money, are not that the proposition relates to the making of a photographic printing paper by a secret formula owned by the advertiser. The inquirer is further told that the paper is manufactured at home on a small scale, that it can be made readily direct to the consumer, and that this business, even on a moderate scale, will command a large profit for the undertaking it. When the purchaser has paid his £20, or £40 for this valuable formula, and has learnt to make the paper, he then wakes up to find that in thus launching his enterprise he has to compete with all the makers of recognised brands of printing-out paper, and cannot distinguish himself of the usual channels of distribution. Therefore, he is probably not long in discovering that the formula is practically the same as that contained in the modern text-books. This fraud, of the constant repetition of which we have frequent evidence, unfortunately does not bring its exponent within the clutches of the law.

A different form of fraud, which has been much practised in the past, although we have not heard of it of late, is in the advertising, again in the lay press, of home

employment by which ladies can obtain a good livelihood by genteel means. When inquiries are made of the advertiser, it is discovered that the work consists in the colouring of photographs (by the crystoleum process) for photographers, who, it is alleged, will pay high prices for it. The advertiser takes money from his inquirers for instruction in the process and for the sale of materials, and leaves them to discover that, so far as the professional photographer is concerned, the crystoleum process is as dead as Queen Anne. The whole thing is a cruel deception, which is not to say, of course, that the crystoleum process as a recreative exercise for amateur purposes is not a perfectly legitimate subject for advertisement for the sale of materials. The fraud lies in representing it as a remunerative employment.

The process world of late has perhaps afforded more examples of the sale of alleged valuable secret processes than has the domain of photographic technique. It cannot be said that the information sold is valueless, but those who are intimate with process matters will confirm us when we describe recent processes, which have been sold to photo-engravers, as simply the oldest methods resuscitated. These antique methods have been offered by men of a certain magnetic personality and a skill in manipulation which enabled them to obtain comparatively large sums for processes which were perfectly well known twenty years ago and were discarded on account of the difficulty of working them. There is a recent instance in which one process-monger in a single summer obtained £750 as the result of selling a process to eight different firms, every one of which at the present time has abandoned the method as commercially useless.

The above considerations will have shown that in purchasing a secret process the buyer should assure himself first that the process as described by the vendor will do what is claimed for it without the exercise of extraordinary personal skill, and secondly that the description actually contains information which could not be obtained in periodical or other publications. Quite naturally, the vendor of a process will not communicate the details to an intending buyer except under some form of agreement, which usually amounts to a firm promise to purchase, but in cases where the amount to be paid for a process is a considerable sum there is the obvious alternative of confiding the method to a third independent party, who, while possessing sufficient knowledge both of the craft and its literature, to say whether the process is both practical and novel, may at the same time be depended upon to respect the confidence placed in him. Naturally such persons, several of whom might be named in the photographic world, would not undertake duties of this character for the trifling sum for which some processes are hawked about, and therefore their services are likely to be requisitioned only in the event of a sale involving some considerable expenditure.

It would surprise, perhaps, many photographers to learn the incredible credulity of some persons as to the value of a formula or working method. The fact that an alleged inventor can bring forward chemical symbols and photographic prescriptions would appear to endow him in the eyes of the would-be purchaser with the wisdom of Solomon and the knowledge of "all the authorities."

It never seems to occur to these people that writing formulæ is as easy as shelling peas. "I can call spirits from the vasty deep," said Glendower. "But will they come when you do call?" And equally the self-styled photographic inventor can write new chemicals into the formula for an emulsion or sensitiser without particular regard to the fact that they in no way influence the properties of these mixtures. As we have said above, the two essential points to be investigated in such cases are:

first whether the formula is practicable, and, assuming that it is, whether it actually contains any constituent other than those occurring in standard published directions. We have had on several occasions the opportunity of applying this method to claims for secret processes.

The result has usually been that the "inventor" has preferred to withdraw from the negotiations, and we point to more than one instance in which the idea formula sold to another party has proved to be a bogus.

## CLEANING DAGUERREOTYPES.

In an article on Copying in the "Journal" for July 3, reference is made to the iridescent film often found obscuring Daguerreotypes, and to the method of cleaning and restoring them by the use of a solution of cyanide of potassium.

As there are still many Daguerreotypes existing which, although they cannot truly be said to have faded, have become covered by the objectionable iridescence mentioned, it occurs to me that it may be of service to describe a method which I have never seen published, but have used as occasion required from the time when Daguerreotypes were still made commercially, until the present. Although when I saw the cyanide method published, I tried it with success, I did not consider it desirable to abandon in its favour the process which I had hitherto used. As there are various details to be observed in cleaning Daguerreotypes, besides the selection of the agent to be employed, I propose to describe the process in full.

The things necessary to have in readiness are, a pair of pliers, a bottle of pure hydrochloric acid, a tap of gently running water or a jug filled with water, a bottle of clean, distilled water, wherewith to finish the washing, and a spirit lamp or Bunsen flame for drying off.

Daguerreotypes commonly have the edges and corners slightly turned down, in order to avoid injury to the polishing buffs. With the pliers one corner may be very slightly turned up, and this corner should be firmly held by the pliers during the operation of cleaning. Holding the Daguerreotype as horizontally as may be over a sink or basin, enough hydrochloric acid is poured on to cover the plate. The iridescence disappears almost instantly, and the plate is then washed, first with ordinary, and finally with distilled water. In the course of washing the plate

may be taken in the hand while the ends of the plate are rinsed to get rid of any acid held between them and the plate. The plate should be dried in such a way that the moisture appears from one side or corner to the opposite in one without halt or stoppage. To secure this, hold the plate the flame with the corner held by the pliers slightly than the opposite corner. As soon as one corner begins to hold the plate nearly upright, still keeping the pliers side and if the plate is of the right heat the drying will continue without stopping, in an even wave from top to bottom the drying becomes so slow that there seems a danger of (which might give rise to a line), make it hot from the downwards, or assist the drying by blowing, or do both dry all over. The corner first bent up may now be straightened out again, and the Daguerreotype should finally be sealed from the air by fastening gum paper all round the edges protecting glass and mat, and on to the back of the plate.

The object of the distilled water is to prevent the deposit of the plate, of traces of the lime and other salts contained in ordinary water, but the distilled water should be examined being held up to the light, and if there are any floating particles they should be removed by filtration.

The hydrochloric acid should be the pure kind obtained from a chemist, and not the commercial yellow kind, which contains traces of nitric acid.

Daguerreotypes were enhanced in beauty by toning with gold, and though I do not say that for the short time the cyanide was used, is kept on the plate, it will sensibly remove the gold, it seems to me more probable that it should do so does the pure hydrochloric acid.

W. E. DEBEN

## DEVELOPMENT WITH DIAMIDOPHENOL IN ACID SOLUTION.

### II.

[The use of diamidophenol in conjunction with sodium bisulphite has found an enthusiastic champion in M. Balagny, whose published papers on the subject are scattered through the French photographic journals for the past few years. A medal was recently awarded M. Balagny for his method of using diamidophenol for obtaining warm tones on gelatino-chloride plates, but for negatives of both time and instantaneous exposures, bromide papers, as well as lantern slides, the properties of the diamidophenol formula are described by him in terms which are perhaps at times somewhat too glowing, but which, nevertheless, are worthy of attention, particularly by users of Autochrome plates, in view of the experiments by M. Charles Simmen on the use of the same developer for the development of Autochromes in a red light. The following formulae, therefore, which are abridged from M. Balagny's recent "Monographie du Diamidophenol en Liqueur Acide", published by MM. Gauthier Villars, may be here translated as an abstract of the chief technical advice which the author has to give.—Eds. "B.J."]

In the second series of formulæ now to be given the anhydrous sulphite of soda and bisulphite should mix together in a solution of bisulphite prepared beforehand, not, as in I. series, employed separately in compounding the formula. The following solution, therefore, is thus to be made:

#### Solution S.

125 ccs. ( $4\frac{1}{4}$  ozs.) of water are placed in a graduated flask, and 20 gms. (310 grs.) sulphite of soda added and shaken until dissolved. 75 ccs. ( $2\frac{1}{2}$  ozs.) of bisulphite of soda solution are then added, and the whole, after shaking, transferred to a 250 ccs.

bottle ( $8\frac{3}{4}$  ozs.), pouring in any sulphite which is not completely dissolved. The solution will be clear on the following day. This formula, it will be seen, gives one gramme of sulphite of soda to 3.75 ccs. of bisulphite per 10 ccs. of liquid. It is also to be noted that as soon as the mixture of sulphite and bisulphite has been made, all odour of sulphurous acid disappears. A liquid prepared in this way will keep for more than a year, the only defect that can occur being a deposition of a little sulphite on the glass, although this is of rare occurrence, the solution being of 10 per cent. strength. As regards the cause of the disappearance



the sulphurous odour, it may be that a new compound is formed on mixing the two substances. A saturated solution of sodium sulphite contains, at 15 deg. C., 25 parts in 100 parts of water, and its reaction is sharply alkaline. It is found that of commercial sodium bisulphite solution (Poulenc) is sufficient for neutralising 15 ccs. of the saturated solution of sodium sulphite. On adding 1 to 5 ccs. the mixture becomes sharply acid.

In preparing the above S. solution, a saturated solution of sodium sulphite has its alkalinity destroyed by 6 ccs. of bisulphite solution. The other 69 ccs. are, however, free to act as an acid solution. It may be assumed that the sodium sulphite is not decomposed, since there is no evolution of sulphur dioxide; in this case its action would be simply veiled by a small quantity of bisulphite (NaHSO<sub>3</sub>). These two salts would exert on the salts of silver each its separate action, the acid salt preventing the injurious effects which are met with in alkaline develop-

#### FORMULA IIA.

Diamidophenol .....	1 gm.	15 grs.
10 per cent. ammonium bromide solution .....	5-10 ccs.	85-170 mms.
Solution S. ....	7 "	120 minims,
		to begin with.
Bisulphite of soda solution .....	3 "	50 minims
Water .....	150-175 "	5 to 6 oz.

It will be seen that this formula is on all fours with Ia, the only difference being the addition of water, diamidophenol, and ammonium bromide. The only difference is in the sulphite of soda, 7 ccs. of solution S. representing a little less than 1 gm. of sulphite. As for the bisulphite, although these 7 ccs. in about 3 ccs. of bisulphite, this latter is insufficient, and the 3 ccs. is therefore added, which makes the total of bisulphite about 2 ccs. more than in the formula Ia. This latter formula (IIa) is designed for the development of well exposed plates, and the bath is therefore rendered rather more acid and therefore less rapid in action. Yet the bisulphite should be further increased; there is no need to fear markings, if the plates have to be left in the developer a long time in the ordinary dish. In using the formula a plate in a perfectly clean dish is treated with the solution IIa as above, and the plate placed at hand containing 10 to 20 ccs. (½ to ½ oz.) of S. solution. The negative, having been treated with the developer for about half a minute, is covered with a card and allowed to proceed without being again examined for 3 or 4 minutes. Usually the image will be visible at the end of this time.

It should show in a case of great over-exposure, and where over-exposures are prescribed for exposures which, perhaps, have been over-treated. If at the end of 2 to 5 minutes there is no appearance of the image, 2 ccs. (½ dram) of S. solution may be added, and further 3 to 5 minutes given before adding a further 2 ccs., successive additions being made with the object of finding the point at which development commences. This having been found, the subsequent development will be as in ordinary work, and the image will gradually appear, and the final result is an excellent negative with full detail.

This formula No. II., although particularly useful for time exposures, can be employed for all kinds of negatives by increasing within certain limits, the quantity of bisulphite solution. In order to obtain an idea as to the power of the developer in respect, a series of plates were given a normal exposure of 2 seconds at f/6, whilst a few others were given 1-50th of a second on the same subject at the same aperture. The following developer was used:—

#### FORMULA IIB.

Diamidophenol .....	1 gm.	15 grs.
Solution S. ....	10 ccs.	170 minims.
Bisulphite solution (to make 5 ccs. with the quantity already in the developer in the 10 ccs. of solution S.; that is)	3 ccs.	50 minims.
Water .....	175 "	6 oz.

Exposures being dealt with 10 ccs. of the solution S. are

taken at the start, a quantity which would be too great in the case of time exposures. The following results were obtained:—

(1.) No bromide. The time exposures developed fairly quickly, but with grey edges. The instantaneous exposures behaved the same in this bath.

(2.) No bromide, and 5 ccs. extra bisulphite. Time and instantaneous exposures behaved as in (1).

(3.) No bromide, and a further 5 ccs. of bisulphite, 15 ccs. in all. The time exposures came up well, the instantaneous were slow in appearing.

(4.) An addition of 5 ccs. 10 per cent. ammonium bromide solution. Instantaneous exposures go no further, but the time exposures continued developing.

(5.) 10 ccs. of solution S. are added, which brings the bath to a strength of 2 gms. sulphite, 5 ccs. 10 per cent. ammonium bromide, and 15 ccs. bisulphite, which is obviously too strong. In this solution both time and instantaneous exposures developed well. Thus, for an average exposure, at least 10 ccs. of solution S., equal to, say, 1 gm. of sulphite, are necessary. With 20 ccs. of the same solution excellent development of both time and instantaneous exposures can be done together. The necessary bromide, 5 or 10 ccs., should not be exceeded, and the bisulphite should not exceed 5 ccs., especially if one has to work alone without being able to rock the dish. This example will make clear the changes which can be rung upon formula II.

A small proportion of the sulphite-bisulphite mixture gives a very thin and soft negative, whilst 10 to 20 ccs. gives increasing degrees of vigour.

#### FORMULA IIC.

With the exception of instantaneous exposures the following formula will give all that is required:—

Diamidophenol .....	1-½ gm.	15 to 8 grs.
Solution S. (added in 2 ccs. lots to not more than 15 ccs. in all, usually).....	10 ccs.	175 minims.
Ammonium bromide 10 per cent. solution .....	10 "	175 "
Water .....	175 "	6 oz.

As regards the greater quantity of diamidophenol in the above formula, the object of this recommendation is that the use of 1 gm. will relieve the worker from the necessity of keeping the developer in movement. In the case of using the ½ gm., the dish should be gently rocked, and the negatives will then be of a peculiar softness. Deficiency of diamidophenol may give rise to markings, particularly with certain plates. If the 10 ccs. of solution S. are not sufficient to bring up the image in a convenient time additions should be made 2 ccs. at a time.

In the case of portraits taken in a room where the lighting is very often harsh, the quantity of bromide in the formula may be reduced, and a bath used as follows:—

#### FORMULA IID.

Diamidophenol .....	½ gm.	8 grs.
Solution S. ....	10 ccs.	175 minims.
Ammonium bromide, 10 per cent. solution .....	20-40 drops.	20-40 drops
Water .....	175 ccs.	6 oz.

The amount of diamidophenol may be varied from ½ to 1 gm., and more or less ammonium bromide solution used according to the vigour or softness desired. Various changes may be rung upon formula II., which correspond, however, with those of formula I., but differ from the latter in being more amenable to alteration. A point which must not be lost sight of is that the quantity of sulphite determines the greater or less speed with which the image appears. On the other hand, the quantity of bromide, relative to the bisulphite, has a greater or less restraining action on the development. For example, a developer containing 20 ccs. solution S. will work almost with as much vigour as formula I. containing 2 gms. anhydrous sulphite, but in this case the negative will be a little harder.

As has been said before, in all cases of acid diamidophenol development a much shorter exposure can be given. Where

hydroquinone or pyrogallie acid would require a 10 seconds exposure, 2 seconds with diamidophenol will usually be sufficient.

### A Two-dish Method of Developing Time and Instantaneous Exposures.

The following formulæ are employed:—

#### DEVELOPER FOR TIME EXPOSURES.

Diamidophenol .....	1 gm.	15 grs.
10 per cent. ammonium bromide solution .....	5 ccs.	85 minims.
Sodium bisulphite solution.....	3 "	50 "
Solution S.....	10 "	175 "
Water .....	150-175 "	5 to 6 oz.

#### DEVELOPER FOR INSTANTANEOUS EXPOSURES.

Diamidophenol .....	1 gm.	15 grs.
10 per cent. ammonium bromide solution .....	2 ccs.	$\frac{1}{2}$ dram.
Sodium bisulphite solution.....	5 "	85 minims.
Sodium sulphite, anhydrous, powder .....	2 gms.	30 grs.
Water .....	150-175 ccs.	5 to 6 oz.

As negatives are taken from their boxes they are placed in the first of these two baths. If the image appears in 3 or 4 minutes the negative will have been well exposed, and it is allowed to remain in the solution until its removal to the fixer. If, however, nothing appears at the end of 5 minutes the negative has evidently had an instantaneous exposure, and is placed in the second bath. It will thus be seen that development is commenced with a slow-acting bath containing the solution S. to the extent of 10 ccs., equal to 1 gm. of sulphite.

### Diamidophenol for Bromide Papers.

The principles above explained can be applied to developers for bromide and gaslight papers; in fact, for all surfaces on which there is an emulsion of silver bromide. The general rules observed in bromide printing and enlarging, such as the use of slow papers where great vigour is needed and rapid papers, where softness is wanted, are, of course, to be observed when using diamidophenol, as with other developers. A suitable formula is as follows:—

Diamidophenol .....	1 gm.	15 grs.
Sodium sulphate, anhydrous, powder ...	2 gms.	30 grs.
10 per cent. solution ammonium bromide .....	5 ccs.	85 minims.
Sodium bisulphite solution .....	10 "	170 "
Water .....	150 "	5 oz.

In bromide work the same precautions as to the avoidance of dishes which have previously been used for alkaline developers is particularly essential. Development takes place slowly, the high-lights appearing first, then the half-tones, but there is not the slightest fog unless excessive exposure has been given. This is the only cause of failure. Moreover, the developer gives no stains, and the colour of the prints is an excellent black. The only way in which the worker can go wrong is in obtaining a greenish colour on the prints, due to too much exposure. On the other hand, insufficient exposure may give rise to a yellowish colour. One hint which may be given in regard to prints which are slow in reaching the desired vigour is to lay them in the developing bath face down; they are turned over to judge of the progress being made.

### Warm Tones on Lantern Slides.

Gelatino-chloride lantern plates, developed with restrained and weak solutions, are, as lantern workers know, the best means

of obtaining warm tones. A method using diamidophenol has worked out as follows: For an average negative 3 cms. of cesium ribbon burnt at 20 cms. distance from the printing is usually sufficient, and this length of ribbon may be altered, altering the distance from the frame for greater or less exposure. For average good negatives this range of distance is not greater than 5 to 10 cms. for dense, and 30 to 35 for negatives. Ordinary yellow light by an oil lamp or candle may be used instead of any yellow or orange lamp, although, of the incandescent gaslight and similar white artificial light is not permissible, but for these a screen of ordinary white paper may be employed.

The ordinary solution S., already given, is made up in sufficient quantity. The developer consists of:—

Diamidophenol .....	$\frac{1}{2}$ gm.
Solution S .....	8-10 ccs. 135-175 "
10 per cent. ammonium bromide solution .....	10 "
Sodium bisulphite solution.....	5 "
Water .....	175 "

This solution is well mixed, and employed with the precaution that a dish free from previous use of alkaline developer be used. The development at the commencement gives an image of red colour, which changes gradually during development in the direction of sepia. Thus, if one so exposes the colour is too red at the commencement, the right density is reached before the red has been sufficiently removed from the deposit. On the other hand, if the transparency is too black to start with, there is no chance of it reaching a sepia tone at the end of development as regards density is reached. It may be found that while it is possible to force development from red to get the black or greenish-black, one can never work in the opposite direction and obtain red when working from a deposit.

The sepia tones once lost can never be regained again, and are therefore necessary to time exposure correctly, and to work in time. The use of ammonium bromide instead of potassium bromide is of great advantage in avoiding greenish-black colour. These latter arise from a too active bath, whilst the best results are obtained by a long exposure and the use of a fairly active weak bath. Too short exposure will give the greenish-black tone, and it is therefore necessary to adjust the exposure to the character of the developer. In all cases the slides obtained are of very great transparency; the high-lights are absolutely glass, resembling those of an albumen slide. There is no need to back the plate, as is frequently done when alkaline developers are used.

A suitable fixing bath consists of:—

Hypo.....	250 gms.	5 ozs.
Sodium bisulphite solution.....	20 "	3 drs.
Water .....	1,000 "	20 oz.

A little bisulphite solution may be placed in plain water and the mixture used in the case of slides which for any reason have been put aside for any time before being washed. The film is thus sufficiently hardened to obviate the chance of any further softening or undue softening. The formulæ given above have been found very suitable for both the Ilford and Edwards' gelatino-chloride lantern plates.

G. BALAG.

MESSRS. NEWMAN AND GUARDIA have made special arrangements to bring their latest productions amongst the yachting fraternity, during practically all August, and commencing from the date of the Olympic Races, July 27. They have secured a display of the incomparable "N. and G." hand cameras, pocket cameras, and reflex cameras, at the following establishments:—Mr. W. Martin, 112, High Street, Southampton; Mr. Tenison Smith, top of Union Street, Ryde, I.O.W.; Mr. A. W. Debenham, 72, High Street, Cowes, I.O.W. They had a similar display last year at Cowes, which was a great success.

ILLINGWORTH'S SUMMER RIVER PARTY.—The staff of Messrs. I. Illingworth and Co. spent a most enjoyable day on July 11, the occasion of their annual outing. Enthusiastic in play as in work, they made an early start for Richmond, where a steam launch was ready to convey them to Egham. The afternoon was spent at Egham Meads, where numerous sports, some of an extremely character, were indulged in, and, judging from photographs taken the spot and submitted for our inspection, heartily appreciated. An impromptu concert on board enlivened the return journey, the launch reaching Richmond just in time to catch the last train for home.



# HOW TO ADVERTISE A PHOTOGRAPHIC STUDIO.

talk delivered before the Photographers' Association of California at their last convention by Samuel P. Johnston, President Johnston-Dienstag Company, advertising agents, of San Francisco, and reported in our San Francisco contemporary, "Camera Craft."]

direct command, in advertising, is recognised as a power-factor in getting results. Were you to use the direct and in your advertising, it would appear something like

LET YOUR PICTURE TAKEN AT MAHONEY'S.  
or  
HAVE MAHONEY MAKE YOUR PHOTOGRAPH."

suggest the thought of the photograph, and at the time tell the place to have it made. Then there is the suggestion, which is very strong, as applied to advertising, the advisability or desirability of having a photograph to send to loved ones at a distance; or to the features of children or dear ones, that thoughts may continue as one knew them. Children change in size as well as in stature, and it is well to have records at frequent intervals, to the end that their varying cast of countenance or plays of feature may be preserved. How the photographer utilise these facts—reduce them to assets for his business? They are raw materials, as papers, plates, and chemicals—they must needs be handled with skill if you would develop profit out of them. How may they be done to the best advantage?

concentrate your advertising efforts within a close radius of your place of business, cause to be made a list of all the names of the residents therein. If you go about it in the right way, you can learn the names of the members of the family, as well as the address. A clothier in San Francisco, years ago, offered to give something for nothing to every boy and girl who came into the store. They made a card of names, addresses, ages, and sex. These were then grouped according to sex, and also chronologically. Each hereafter they wrote a certain number of letters to as many parents, joggling their memories to the effect that Johnnie or Annie was to have a birthday next Wednesday, and suggesting the purchase of a coat or suit on the Saturday following. It worked like a charm—the expense was slight. Why do the same thing, and it seems to me a thing very profitable to your business.

These cards should have a printed form, and a record should be kept on each by which it may be shown whether a picture has been taken, and the date. Those showing that photographs have been taken should be retired but not destroyed. In a couple of years revive them and write again, suggesting that it is time to have another photograph taken. If you have only the names of heads of families, try a series of postcards on them, one a week for ten weeks. Use the photographs of fine-looking people of different ages. Have the finest possible half-tones made of them. Use the best quality of cardboard; print half-tones over two or three times, using a different tint each time, giving the effect of a photograph. Print the matter in suitable type, and say something—yes, say something worth while. It may require a deal of thinking to find out what to say, but the result will pay. The next week, use a different photograph and different coloured ink—and say something worth while. If you cannot think of anything better, use the direct command, and say:

GET A PHOTOGRAPH  
taken at  
MAHONEY'S.

It would be best to have all these cards prepared in advance, so that the follow-up effect may be maintained.

In a community where there is a newspaper reaching the folks you want for customers, you can develop business through its columns, if you use the right kind of copy and type for display. It is a ticklish thing to get a half-tone printed in a newspaper good enough to advertise a photographer. Better use plain type and depend upon the words and display rather than on a picture.

Those are the things to use to get folks into your place of business. After that is accomplished, the work is only begun. Then your personality counts—your character as a man will attract or repel—will hold or lose customers. Good treatment goes a long way and counts for success or failure almost as much as good work. Your name on the card should be plain and legible. Some photographers are either ashamed of their names, or desire to keep them secret—at least, it would seem so from the style of printing the name on the card.

I am familiar with the amount of money business men may spend for advertising in proportion to the sales in several lines, but not so with photographers. Five hundred dollars would not go very far in a large city, while in a small city that amount would cause a stir.

To advertise anything with success there must be a definite subject—you must not generalise. A. T. Stewart, the famous New York merchant, said: "First get something to advertise, and then make a fuss about it." So with photographers. Confine your advertising to some one thing—something novel or unique, or rare or exceptional, to be found only at the advertiser's. I am a firm believer in contests, as they have proved valuable time and again for almost every line of business. Why not have the photographer offer a prize for the best-looking baby entered in a contest at his gallery, the judges to be some prominent artists of the community? Also prizes for the second and third best. Have cash prizes, and photographs also. Say, fifty dollars to the first, two dozen photographs to the second, and one dozen to the third. All sittings to be made free. Thus will he get a lot of negatives from which the parents will later order pictures, even if baby was not a prize-winner. The same scheme might be worked with beautiful women, but it surely would not be so successful as with children. One photographer might have children of different ages entered, say, from four months to a year in Class A; one year to two years, Class B; two to three years, Class C, and so on. The photographer could get up other contests. For example, he could offer a prize for the best theatrical picture posed by some young lady. That is, the young ladies must appear in costume and be photographed, and the one having the best photograph in the eyes of the judges, would be entitled to first prize.

In all of these cases, make a card record of age and sex of the subject, if possible, as, of course, it would be in the case of children, get the birthday, and then make different sets of cards from the original records. Make one set to be arranged chronologically, and the other to be arranged alphabetically. One of the best means of advertising is a display in a prominent place in front of the place of business, or elsewhere.

Very likely the end would justify the means if you got up very neat little booklets, and left blank pages on which you typed in actual photographs, and sent copies to a selected list. These should then be written to and followed up with letters. Newspaper advertisements used frequently, say, three times a week, should be available in many cases. In these

advertisements all the varied factors of advertising may be used, as: the direct command, the suggestion, argument in favour of good work, or of low prices, as the case may be.

These are, of course, but general suggestions. Individual circumstances must determine the method. The personal letter is a great power in advertising, when it is a personal letter,

and not a circular. Tell the story of your business in a plain way, just as you talk, and keep on telling it from week to week, from month to month. The only medium which approaches the pulling power of the personal letter in advertisement is a personal call. In many instances your personal letter will get an audience when your personal call would not.

S. P. JOHNSTON.

## MEASURING THE SPEED OF PHOTOGRAPHIC SHUTTERS.

ENOUGH has been said about the inaccuracy of the speeds with which shutters supplied to the professional and amateur alike are marked by the makers of these instruments. It is also evident that the speed of shutters alters and varies considerably with time and use, especially in shutters which depend for their accurate movement on a spring. Others, again, vary with the hygroscopic state of the air, on account of the blind or other moving parts taking up water, and they are therefore unreliable. All this shows the necessity for measuring and verifying the speed of photographic shutters in use from time to time. The speed of photographic shutters such as the Thornton-Pickard, in front and behind the lens, or the variety of shutters working between the lens combination, is easily measured by the several devices on the market, or by the timed rotation of a bicycle or perambulator wheel. The difficulty, however, begins with the (most efficient) focal-plane shutters, for testing which instruments elaborate and costly devices have been constructed. The following is a method of testing focal-plane shutters, which can easily be performed by the timed rotation of a wheel, or by

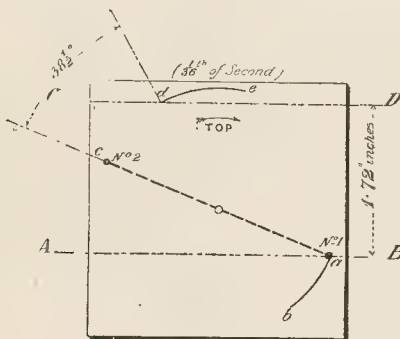


Fig. 1.

slightly altering the rotary devices, sold for the purpose of measuring shutter speeds. In 1903 I wrote a letter to "The British Journal of Photography," in which I advocated the use of a rotating wheel on which two silvered glass balls, or other luminous points, are fixed at or near the circumference of the wheel, diametrically opposite each other. When, however, making actual tests with such a device, it became evident that even the mean of the two movements of the luminous points, with and against the movement of the slit of the focal-plane shutter, gives erroneous results on account of distortion.

By distortion I understand the displacement on the photographic plate of moving points, due to the time it takes for the slit of the focal-plane shutter moving over the whole or part of the plate, not the displacement of a point due to the movement of that point during the time it is actually exposed only. To make this clear I give a diagram (Fig. 1) of an actual test. This diagram represents a print from the plate used during the test. The luminous points are diametrical points on the cir-

cumference of a wheel, or, as in the case of the actual silvered balls on the ends of a straight lath, revolving in the direction of the arrow, and since the image was reversed in camera, the focal-plane shutter which moved in the camera top to bottom actually exposed the image from bottom to top. The slit of the shutter must, therefore, have exposed one of the luminous points, No. 1 first at "a," and during the movement the whole width of the slit point No. 1 has travelled from "a" to "b," but at the moment point No. 1 was exposed by the slit first at "a" the other luminous point No. 2 have been diagonally opposite "a," that is, at "p." The shutter, however, owing to its exposing the bottom of the picture first at the top of the picture, distorted the picture, and the slit exposed point No. 2 at "d." No. 2 point has, therefore, travelled from "C" to "d" during the time the first edge of the (going over the plate or picture) has moved between the parallel lines A B to C D, the arc "c" "d" being quite independent of the movement of the slit of the shutter against or with the movement of point No. 2. Arc "c" "d" is, therefore, a measurement of the distortion, due to the speed of the shutter.

In the test as in Fig. 1 the lath, with its glass balls at each end, moved at the rate of 245 revolutions per minute = 1-1

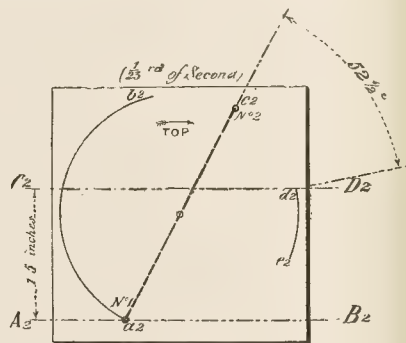


Fig. 2.

of a second per degree of arc. The width of the slit was 1.1 from this we get  $t = \frac{.001238}{d}$  arc, where "t" is the time exposure in seconds, "d" the distance in inches between parallel lines, A B and C D was 1.72in. - the arc "c" in degrees =  $38\frac{1}{2}$ .

$$t = \frac{.001238 \times 34.5}{1.78} = 1-36\text{th second.}$$

In this test the luminous point No. 2 was exposed very nearly at the culminating point, and moving, therefore, nearly at angles to the movement of the shutter. The arc "d" should, therefore, be nearly a mean of the speed of the shutter. This arc is 50 degrees, or 1-30th of a second.



other test is represented by Fig. 2. In this the distance A B to C D = 1.5in.

$$t = \frac{.001238 \times 62.5}{1.5} = 1.23\text{rd second.}$$

t as per diagram Fig. 1 was taken with a tension of the regulating the speed No. 5, and test as per diagram Fig. 2 a tension of the spring No. 1, hence the difference.

A test of tension No. 10 (the highest tension possible) gave 1.47th of a second, which is nearly double the exposure as given by the makers of the shutter. The width of the slit was always 1.82in.

Since making these tests I have had a new shutter from one of the practical makers, and this shutter gives 1.48th of a second, and the speed is marked as 1.80. It is a pity that manufacturers of shutters should give such erroneous figures.

W. DIESELHURST.

## SOME PHOTOGRAPHIC FALLACIES.

we find a popular weekly, noted for its fiction, gravely misleading its readers, through the correspondence corner of its graphic page, that if a small house is to be rendered as and imposing as possible in a photograph, it should be with a wide-angle lens, we can afford to smile tolerantly. is quite a respectably old fallacy, which many otherwise informed photographers have quoted, or believed in their consciousness, until they have had the actual work to do, have found out the facts for themselves.

is questions seem to furnish opportunity for probably the number of popular mistakes. There is no doubt that the ge worker knows less about his lenses, their properties, the optical laws which govern their action, than he does the other aspects of his craft. This is a pity, for the im- mance of such knowledge can hardly be overstated, and its ment is not at all difficult in these days of cheap practical als.

ch hazy inexactness of statement has been poured forth rning that crowning triumph of the modern optician, the stigmat lens. Frequent inquiries come to hand from per- d individuals who wish to obtain the best lens that money ay, but are doubtful, from what they have heard and read, er, after all, a good rapid rectilinear would not be a wiser ase. If this should meet the eyes of any such, let them be rted with the assured fact that whatever the rectilinear o a first-class anastigmat will do also, and do it better; dition to which, there are many reserve qualities and ad- ges possessed by the anastigmat to which the rectilinear t lay claim. The absurdity of supposing that thousands atical workers would obstinately persist in paying three or imes the price of a rectilinear for a lens that is not so good y needs demonstration.

at long-suffering personage, the lens manufacturer, has yet er grievance in the widespread confusion as to what con- ges effective aperture. Frequently the complaint is made indignant purchaser that his expensive new lens cannot its stated rapidity, because when the diameter of the st stop is multiplied by its reputed  $f$  value, the result is equal to the focal length. That this need not be the case een explained with monotonous frequency, but still the y lives on.

would almost seem as if an apology were needed for re- ing the fact that shutters of identical speeds, as tested, f different makes, do not necessarily give the same expo-

Yet we meet with workers who are puzzled why, with ent hand-cameras in their possession, although these are shed with lenses of the same aperture and shutters of the tested speeds, the negatives taken with one camera are y always fully exposed, while those taken with the other tten under-exposed. The subject of shutter efficiency, as ed by its construction and method of working, and dish- ed entirely from speed, is obviously one with which are as yet unfamiliar.

phenomenon of halation has been responsible for many ge misconceptions. For instance, many photographers

firmly believe that a backed plate will obviate the effect of strong reflections or pronounced lighting in the subject. Quite recently an otherwise thoroughly adept worker was seen making an exposure upon some highly polished silver ware, without any attempt at dulling the surfaces. When it was suggested that the negatives would be sure to show disagreeable reflections, he replied, as though that settled the matter, that he was using backed plates. An explanation, with a hint how to proceed, promptly and gratefully accepted, soon set matters right. The backing, of course, only prevents the reflection of light that has passed through the film to the back of the plate; it cannot remedy strong lights or reflections that occur in the subject itself, which naturally are thrown by the lens, in all their garishness, directly upon the film.

A short time ago the writer had the privilege of seeing a studio in which the light was pleasingly softened by means of pale blue muslin curtains. From an artistic and decorative point of view the effect was charming; but when its originator proudly explained that the intention was to obtain a more actinic light, a friendly argument was inevitable. Fortunately, the operator had some surviving recollections of his early struggles with Euclid, and was open to conviction that a part is never greater than the whole.

Before leaving the studio and its accessories, comment may be made regarding the number of operators who continue under the impression that when a light background is used less exposure will be required than with a dark one, the sitter or subject remaining the same in both cases. On the face of it a plausible belief, this is none the less a grave practical blunder, as a few experiments with the same sitter, but different back- grounds, under similar conditions, will abundantly prove. The light background, it will be found, requires actually a longer exposure.

There is a very general belief that it does not matter whether plates or prints are treated one at a time or all at once in any bath, provided only that the solution is sufficient in quantity and of a given strength. That this is not always so is easily proved by considering, for example, the action of a gold toning bath. If an attempt is made to tone a quantity of P.O.P. prints one at a time, in a dish containing sufficient solution for the whole number, it is found that the first few will tone too quickly, and will soon exhaust the gold, so that the remainder cannot be toned to correspond. Even in development, if enough developer is taken for a dozen plates, and these are developed singly in the same dish, the result will not be so good, especi- ally with the last few negatives, as if they were all developed together, owing to the gradually increasing oxidation of the solution. A practical worker would not, of course, perpetrate either of the aforesaid mistakes; they were merely quoted to provide food for thought, since the principle is one that is often unconsciously violated in other directions.

Another long-enduring example of bad reasoning is to be found in the common practice of painting the developing room some dark or sombre colour. A little consideration ought to show that more light cannot be reflected than is actually there,

and that, so long as the lamp or window is "safe," and stray white light excluded, comfort and ease of working will be promoted by white-washing the walls or painting them in some light colour.

*Humanum est errare!* That being so, it is pleasant to have

to acknowledge, what is certainly true, that photographer body are conspicuous for a generous willingness to place difficulty they have at the disposal of any confrère who difficulty, or seems likely to be. And, as a rule, such advice accepted in the spirit in which it is given. A. LOCK

## PHOTOGRAVURE FOR THE PROFESSIONAL PHOTOGRAPHER

### I.

PHOTOGRAVURE is by far the most beautiful of reproduction processes, and is specially suitable for portraiture, and may be used to advantage when very large numbers are not required. It is, moreover, a process that may be worked by the ordinary photographer without any expensive apparatus, as, with the exception of the dusting-box and printing press, nearly all the necessary appliances will be found in an ordinary photographic establishment. But it must not be supposed that it is an easy process, as difficulties crop up at every stage, and it needs great care and patience if success is to be attained.

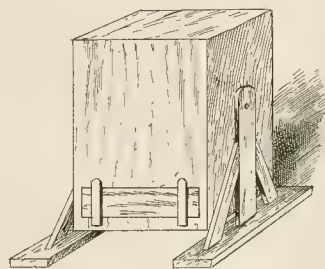
The first stage in the process is to secure a perfect and reversed transparency on glass from the negative it is desired to reproduce. If the photogravure plate is to be the same size as the original negative, the transparency is best made by the carbon process, in special transparency tissue, in the usual manner when enlarged negatives are to be made. But if the plate is to be larger or smaller than the original, the transparency may be made by enlargement or reduction in the camera, always bearing in mind that the transparency must be reversed, so that the back of the negative should be placed towards the lens.

If the carbon process is used the glass support must be a little larger than the negative, and must be very carefully cleaned and coated with warm gelatine containing a small quantity of chrome alum or sufficient potassium bichromate to give it a sherry colour. This solution is poured over the plate two or three times, running the surplus off at a different corner, so that the whole of the glass shall be covered. It may then be reared up to dry in a clean rack or standing on a strip of blotting-paper. When dry it is ready for use, but if bichromate is used the plate should be exposed to light. The object is to secure a thin film of gelatine which is partly or wholly insoluble, so that the carbon image will cling to the glass. A small piece of gummed paper should be attached to the uncoated side of the glass to distinguish it, although it is possible to tell which is the coated side by breathing upon it. The film is quite effectual even if of extreme thinness. A number of plates may be coated and stored for future use. The exposed transparency tissue is printed and developed in the usual way, using every care to produce a perfect result, as any defects will be reproduced in the engraved plate.

The copper plate must now be prepared, and the best, most highly polished plates must be used. They can be obtained from the houses that make a specialty of process materials. At first small sizes should be tried at the experimental stages, as failures are inevitable. The plate should be large enough to give a fair margin all round—larger at the bottom of the plate. The first thing is to clean it thoroughly, as it must be free from any suspicion of grease. A ball of whiting is broken up and put into a bottle of water and well shaken until all lumps are broken up. It is allowed to stand for some minutes until the coarser particles have settled, and the water in which the finer particles are floating is poured off into another bottle, which should be labelled "washed whiting," and sufficient ammonia added to make a 3 per cent. solution. A "rubber" will be necessary, and this can be made by taking a long strip of ordinary flannel, about 6in. wide, and rolling it tightly into a firm, stiff roll 6in. long, and tied tightly round and round with string; each end now forms a capital polishing surface.

The copper plate is examined for scratches and any defective one put aside for repolishing. A selected plate is then cleaned with a solution of "American potash" on a piece of cotton wool and rinsed under the tap until the water runs over quite freely, showing no trace of greasiness. The potash is a very powerful alkali, and it must be handled with care, as it will take the skin off the fingers. Potassium carbonate, which will be found now in all photographic

workrooms, will answer the purpose. The copper plate is now dry and with a clean duster, and laid on a sheet of clean paper to keep it clean during polishing. A pool of the washed whiting is poured on the plate and the polishing rubber applied, rubbing vigorously from end to end of the plate. After a time the end of the rubber should be used for a final polish. The plate is then wiped with a clean dry cloth and some zinc white, in powder, is dusted on and rubbed over with clean cotton wool. Finally the white is dusted off, and the plate is ready for the next process—"dusting" or graining. For this a dusting-box is necessary; the local carpenter can make one if a sketch is supplied. It should be lined throughout with thin sheet zinc so that the powdered men shall not cling to the top and sides of the box, and so shall not clog together with damp. A small dusting-box is of use. It should not be less than 2ft. 6in. or 3ft. high by about 12in. square for plates 12in. by 10in. It must be swung on two pivots so that it may revolve freely, and it must be provided with a door to fix it firmly while the plate is being "dusted." Near the bottom of the box there should be a door about 4in. in height and as wide as the box. The recess for the door or lid must



flanges covered with thick rubber sheeting, against which must be pressed by strong springs from a whole-plate printing frame, while the lid itself should have a projecting strip all its edges, lined with rubber, to press against the outside of the box to form a dust-proof joint. It is better not to have hinges on the door; it is more convenient to be able to take it right out of the box. A support for the plate must be provided to raise it about an inch or two of bitumen dust at the bottom of the box. A piece of wood, with a projecting handle and legs to stand on, will answer; the top of the board should be covered with some padding or stuffing about an inch or more thick, over which is stretched some smooth material, such as thin leather. The purpose of the pad is to prevent disturbance of the dust on the plate by vibration of the floor from passing traffic; such vibration would throw the dust into curves and lines. The copper plate should be placed on a piece of plate glass 2in. larger all round than the copper plate, so that the shower of dust is disturbed by the edges of the plate would give uneven grain round the outside. Not less than the finest powdered bitumen is poured into the box. It is obtained from the same firms as the copper plates. Even with the best fitting door the powder will escape a little; it has a penetrating and not very pleasant smell, reminding one of a house in which a large number of cats are kept. Having put in the powder, the plate is fixed in its place and the box swung on its pivots so that the bitumen may fall from one end of the box to the other, filling the box with a cloud of dust. The box must not be turned quite round; the bitumen will swing round and round at one end, and then will be raised, but the box should be turned upside down and then stopped, and the bitumen will be heard to fall



tom; another half-turn and it will fall again, and so on for a few minutes. Then the box is turned right way up and the bolt or catch is loosened to hold it firm, and the top and sides are struck smartly with a cane to shake down any clots of bitumen clinging thereto. After waiting 30 seconds the door is taken out, and the copper plate with the piece of plate glass, resting on the padded board with legs, is very tenderly and gently put into the middle of the box, and the door is just lightly lodged in its place, not fastened, for fear a clot of bitumen should fall upon it. In about ten minutes or more most of the dust will be settled and the plate should be taken out. It will be thinly covered with fine brown dust, and must be handled very carefully, so that the evenness of the coating is not disturbed. When baiting a hook we are told to put the worm on as though we were baiting him, but in dealing with a plate during dusting it should be handled as if it were a dynamite bomb ready to explode by a slight touch. One dusting is seldom sufficient, and a second and even a third may be necessary, especially if a very fine grain is required. The grain must vary according to the subject. A strong subject with large masses of dark shadow needs a strong grain, whereas a subject with delicate tones are to be reproduced, such as a lady in a white dress, needs a fine grain. When a fine grain is required, three dustings or even four may be necessary, as the dusting-box must remain for a longer time at rest before the plate is inserted. So that if a minute is allowed before the plate is put all the larger particles of bitumen will have fallen, and only the finest dust remains to fall upon the plate. It may be well to explain at this stage the necessity for the "grain." The photogravure plate, when ready for the printer, may be compared to a mezzotint plate; as a matter of fact, it is printed in exactly the same way. A mezzotint is made by roughening a copper plate with a tool shaped like the rocker of a cradle; the curved side is covered with fine teeth, and the tool is rocked all over the plate, causing a multitude of fine holes with burrs; and if it were covered with ink

and printed at this stage the impression would be a fine velvety dark tint. In this state the engraver takes it in hand and scrapes away the rough surface, according to the lightness of the tone he wishes to produce. Bright lights are scraped until a smooth copper surface is left, and the brightest spots of light are burnished with a steel burnisher. Such a plate is printed by filling the fine holes produced by the rocker with ink, which is of about the consistency of butter. The plate is warmed to make the ink flow slightly. It is rubbed vigorously into all the depressions in the plate and the surplus is wiped off, at first, with cloths, and a final polishing is given with the palm of the hand. The margins are then wiped with a rag which has been rubbed on a ball of whiting, to remove all traces of ink and leave margins without any tint. The plate is then ready for printing. It is laid on the bed of a press, a sheet of damp paper is laid upon it, several thicknesses of cloth known as "blankets" are laid upon the plate, and it is drawn through the press. The "blankets" give an elastic pressure upon the paper, and force it into the depressions in the plate, picking up the ink they contain.

A photogravure plate is just like a mezzotint in printing, but there are no fine holes and burrs to hold the ink, and the shallow depressions, representing the shadows, would be wiped almost free from ink when removing it from the high-lights, so that by covering the plate with fine particles which resist the etching fluid we secure in the shadows innumerable spikes or points which retain the ink. It will be easily understood that where there are broad masses of deep shadow these points must be larger than in subjects of a more delicate character, for the etching solution eats away the copper, not only downwards, but sideways as well, and in a deep shadow the mordant would eat its way beneath the dots of bitumen if they were too small. It would be a great gain if a discriminating grain could be used which should be coarse in the shadows and fine in the high-lights.

HAROLD BAKER.

## BRUSH-TONED PORTRAITS IN DIFFERENT COLOURS.

[Several portraits having been sent us of late with the request for information as to their method of production, we have replied that the specimens were evidently the results of local chemical toning. Although the results were by no means pleasing from an artistic standpoint, they are evidently in demand among certain classes of sitters, and therefore the following notes from the "Bulletin of Photography," Philadelphia, professing to describe the practice of a similar method may be quoted.—Eds. "B.J."]

As far back as 1864 we find mention of multiple tones by modification of the gold bath alone; the flesh tints possessed a degree of naturalness and the hair and clothing were approximately represented as in the original subject. Not long ago Dr. Raubert, of Germany, revived interest in the process by exhibition of beautiful artistic work. We will draw on his experience and describe in detail his method. The result in P.O.P. is to be strongly printed, thoroughly washed as in the usual manner, then placed while still wet face up in a shallow porcelaine dish or upon a sheet of plate-glass previously cleaned most scrupulously. It is now ready for the multiple toning operation. For this purpose prepare three different toning solutions, a gold, a uranium and a uranium bath.

With the gold bath we can have, according to the duration of the action of the toning, brown, sepia, violet, purple, bluish black and black.

With the second blacks and greys, and with the third red and flesh tones. The toning is effected locally by means of brushes, which should be soft, preferably sable, and without any metallic mountings. They should be of various sizes.

To make the gold bath, that is for browns, violets, purples, sepias, take

Water .....	4 ounces.
Borax .....	15 grains.

Just before using add 1 drachm of gold solution constituted as follows:—

Gold chloride .....	2 grains.
Water .....	1 ounce.

The constitution of the platinum bath is:—

Water .....	16 ounces.
Potass. platino chloride.....	15 grains.
Phosphoric acid .....	1 drachm.

Constitution of the uranium bath:—

(A) Water .....	4 ounces.
Uranium nitrate .....	15 grains.
(B) Water .....	4 ounces.
Ferricyanide potassium .....	15 grains.

Mix just before using.

If we have a portrait to operate upon, begin by toning the background with the gold bath, taking care not to encroach upon the lines of the face or hair. After the proper tone is reached, and you have quite a selection to choose from, from brown to blue—wash the print as you do an ordinary toned print, that is to stop further action of the toning solution.

Next comes the hair; if this is to be auburn, allow the bath to ripen a little, that is, use one which has been previously used and a few days old. For deep brown hair use stronger gold bath, that is, add a little more gold, but be careful to neutralise the bath if the excess of gold destroys the neutrality. Add a little more of solution or borax. Black hair is obtained by toning first with the gold and following with the platinum. When the proper degree in the toning is reached wash under the tap.

Now fix the print before you try for the toning of the flesh or before you use the uranium bath. The drapery, of course, may be toned with any of the baths, but if red tones are wanted you must defer the toning until the fixing is accomplished. After fixing you still employ the gold bath if necessary to strengthen up certain parts, but not the platinum. The pupils of the eyes may thus be intensified.

Use the uranium bath last after the fixation. Do not let it remain on the parts too long else the spot will be toned too deeply.

Wash finally to print for half an hour and the work is complete.

Blue, yellow and green tones may also be secured by use of other chemicals, but the results are by no means as rich and satisfactory as those had by the method given above, which are admirable for portraiture.

## DEVELOPING AND PRINTING FOR AMATEURS.

In these days of keen competition the professional photographer, no matter how select his business, cannot afford to neglect or despise any work that brings a little "grist to the mill," so long as such work is within his compass and does not infringe upon the rights of other businesses or professions.

There is no doubt that in the past, as well as in numerous instances in the present, the branch of work which heads this article has been neglected by those to whom rightly it belongs, or, if not neglected, it has been taken up half-heartedly or in anything but an enthusiastic spirit.

The reason of this is pretty obvious. Professionals, in the first instance, strongly resented the claims and work of the "amateur," and if he brought his exposures to be developed or his negatives to be printed he was received with anything but an open-armed spirit, and he was given to understand that such work was not required or such a high price was charged that his future visits were few and far between.

It is not surprising, therefore, that all over the country the photographic dealer has taken up this work, and the amateur but rarely visits the photographer, except in cases when he requires some very special work, such as retouching, spotting, etc.

Anyone taking up this work for the first time must not hope or expect to get high prices. The days when 3s. for developing one dozen quarter-plates was obtained has gone, and although similar prices are still quoted in a few lists they are the exception rather than the rule.

A fair price, and one which pays, as I shall presently demonstrate, is for films, one penny per exposure any size, and for plates 1s. 6d. per dozen for quarter-plates, and 2s. per dozen for half-plates.

The price for printing is rather higher, and generally 2s. a dozen for quarter-plates, and 3s. for half-plate prints can be obtained.

At the above prices I can quite understand that many photographers will hold up their hands in pious horror, but money can still be made even under such conditions. Films, for instance, can be very quickly developed and fixed, for, as they are passed through the developing solution in the length, the under-exposures or over-exposures being cut out for separate treatment, a very considerable number can be finished in an hour. Plates, except when but two or three are required, can be developed by the "stand" process, a 1 in 1000 solution of rodinal being found all that is necessary, with a time limit of three hours. A quick developer is required for films, and the metol quinol formula satisfies in this respect the most exacting. A good one is as follows:—

No. 1. Metol .....	2 drams.
Hydroquinone .....	8 drams.
Sulphite of soda .....	6 ounces.
Water .....	10 ounces.
No. 2. Sodium hydrate .....	300 grains.
Water .....	10 ounces.

For use, take half an ounce of each solution, and add two ounces of water, making three ounces in all. This is an exceedingly active developer. Detail is all out in about fifteen seconds, and development is complete in two minutes, and as most of the ordinary amateurs' negatives are under-exposed, a "quick" solution such as this is a great boon.

A word of caution is, however, very necessary. It will be wise to pass the strip of film through water several times before placing in the above, or markings may appear, due to unequal development. It is quite possible to develop and fix twelve six-exposure films by the above method in an hour, and this work, if charged for at one penny per exposure, is not unprofitable, and can be undertaken in one of those spare half hours which even the busiest sometimes require to occupy.

There is one virtue very necessary in working for amateurs, and that is promptness. He or she is generally very anxious to see the result of their labours, and it is a good plan to develop all films and plates the same day as received. Printing, of course, will take longer, but even this should not be allowed to wait too long before undertaking.

As regards this, the quicker method is to use gaslight papers, and the amateur, as a rule, prefers to the ordinary printing-out varieties. Two speeds should be stocked—the one, slow and vigorous, for thin negatives; the other fast and soft, for hard and contrasty ones. The use of an acid fixing bath reduces the risk of stains to a minimum.

Catering for amateurs in this way often brings more professional work in its train, for it is still a fact, borne out by general experience, that when he or she requires a portrait or anything special visit is paid to the man who, by his training and experience, is most capable of producing it.

Finally, it is not suggested that a fortune will be made by any of the above methods, but that an income, small perhaps, but for certain, is assured, and such none can afford to neglect under present circumstances.

ERNEST C. CRISP

## Photo-Mechanical Notes.

## The Asphalt Process of Half-Tone Lithography.

Writing in the current issue of "Photographische Korrespondenz" Professor August Albert refers to the special practice requiring the employment of a sensitive asphalt solution for direct prints on grained lithographic stone, the usual mistake of most operators being in giving too heavy a coating. If the work be done in a room in which the air is warm and dry much greater difficulty is encountered, for the reason that the film dries very quickly, and, particularly in the case of large sizes, is not evenly distributed over the surface. This too rapid drying can be prevented by a considerable addition of oil, Peruvian balsam, and similar substances, but the strength double that of the usual formula—3 per cent. to 100 parts—should not be exceeded, as otherwise the developed image will not have the sharp outline which it otherwise would, and the print will be dirty and veiled. After numerous experiments with different preparations, the following process has been found to be faultless and uniform films after a little practice, even on the largest sizes of work. The asphalt solution is as follows:—

Purified asphalt .....	24 gms.
Lavender oil .....	18 gms.
Benzole .....	100 ccs.
Turpentine (pure French) .....	25 ccs.

After complete solution of the asphalt, which generally requires vigorous shaking, a kind of varnish is produced, which is without filtering, a portion corresponding to the size of the stone to be prepared being poured on to a clean colour slab, distributed with a smooth composition or leather roller and immediately transferred to the stone, after the manner of transferring the colour in tone-printing of large sizes. As experiments have shown, the sensitivity of the film does not suffer in the slightest; for later a pure medium strength lithographic varnish or Venetian turpentine has been used in place of the lavender oil, as the application of oil film is thus rendered easier. After the usual lithographic retouching the stones are given a "still etching," as in litho chalk drawing, and are then allowed to dry. This etching is quite sufficient for obtaining a preliminary print. The stones are then washed with water and inked up with black ink on top of the asphalt image that is, without washing out with turpentine—and again etc. A number of preliminary prints—about ten to twenty—are taken off, with the ink required on top of the black ink, until the image comes off clean. For storing, the remainder of the coloured ink is taken off on paper and a few prints made with transfer ink in order to be able to replace the ink already used by a transfer ink without having to wash out the stones with turpentine.

The annual outing of the staff of Messrs. W. Butcher and employees at Camera House and the works at Copenhagen and Blackheath took place on Saturday, July 18. The party, numbering about 180, spent a very enjoyable day, the rendezvous being the Dumb Bell Hotel, Taplow. In a speech at luncheon, Mr. Butcher referred to his brother, who had on previous occasions taken great interest in these outings, and a hearty message of farewell was sent him in China, where he is now travelling. A very pleasant afternoon spent on the river, tea was taken there and the sports in connection with the Camera House and Club were held.

\* For colour printing the stone should be washed out on the top of the ordinary asphaltum washing out solution.



## Patent News.

*process patents—applications and specifications—are treated in the Mechanical Notes.*

The following applications for patents were received between 6 and July 11:—

**APPARATUS.**—No. 14,415. Improvements in apparatus for reproducing the motions of a moving body at a distance and indicating instantaneous position. Arthur Hungerford Pollen and Harold Herwood, 188, Fleet Street, London.

**ROLLS.**—No. 14,489. Improvements relating to photographic roll reels and fittings therefor. Magnus Niell, 88, High Holborn, London.

**DEVICES.**—No. 14,490. Improvements relating to roll-film loading devices for photography. Magnus Niell, 88, High Holborn, London.

**COLOUR PHOTOGRAPHY.**—No. 14,586. Improvements in or relating to colour photography. Charles Frederick Emil Fenske, Chancery Lane Station Chambers, London.

**TRIMMER.**—No. 14,653. Print or mask trimmer. Frank Baker, 5, Ednam Terrace, Old Lodge Lane, Purley, Surrey.

**LENSES.**—No. 14,673. Improvement in photographic lenses. Conrad Beck and Horace Courthorpe Beck, 68, Cornhill, London.

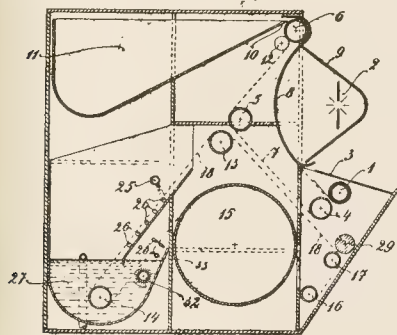
**MIXTURE.**—No. 14,692. New and improved mixture for flash-lights and the like and method of producing the same. Carl Hage, 111, Hatton Garden, London.

**APPARATUS.**—No. 14,757. Daylight developing apparatus for photographic plates, films, and the like. Edmund Hodgson Smart, Southampton Buildings, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

Specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

**SENSITIVE PRINTING MACHINE.**—No. 2,076. 1908. The sensitive paper is first coiled upon a roller, 1, is drawn by means of a table band delivery in front of the source of light, 2, and is thereby exposed. The introduction of the original to be copied takes place simultaneously from the supply table, 3. The guiding of both parts is effected by means of a loose band, 7, passing round rollers 4, 5, and 6, which stretches opposite the source of light around a curved transparent plate, 8, and draws between



the sensitive paper and also the original to be copied placed upon the same. The passage of the negative of the sensitive paper at the rear of the plate 8 is effected only by the friction with the band, 7. As the plate is smooth at the back, it is found in practice that this friction alone effects a completely regular transmission of the paper. For the more uniform and intense distribution of the light a mirror, 9, is provided. The paper, thus placed with regard to the original, has

passed the illuminating plate, the original is taken off from the sensitive paper by means of a scraper, 10, and received in a container, 11. The taking-off of the original is aided by a sharp bend of the transporting strap round the roller, 6. For the tightening of the forwarding band, 7, and for the passage thereof past the plate, 8, there is further provided a special counter-roller, 12, which rests firmly upon the roller, 6, and thereby ensures an unconditionally certain motion of the band. The exposed paper passes between the rolls 6 and 12, away on the forwarding band in a sloping direction downwards to the developing mechanism.

Over the rolls 13, 14, the drying cylinder, the rolls 16 and 17, there pass at both sides travelling bands, 18, for the purpose of conveying the paper strip. This is secured or clamped fast between two flat pieces, 19, 20, lying one upon another, and the ends of these pieces are held together by a shoe, 21, passed over them. These shoes are provided with hooks, 22, which can engage in carrier pins, 23, arranged on the strap, 18. Upon the motion of the strap, 18, there will consequently follow a motion of the sensitized strip, 24, as shown in the figure.

The illuminated and still dry paper is then wetted by means of a tube, 25, and a support is provided for the wet paper, because while in this condition there is considerable risk of the paper being torn, and in any case it would hang down considerably. To prevent the adhesion of the wet paper to this support the latter is provided with a series of thin rollers, 26, over which the paper is fed. The strip passes then further into a washing basin, 27, over the rollers, 14, placed in it. After passing a squeezing device, 28, the strip passes to the drying cylinder, 15, which is heated internally. Passing around this cylinder, the paper moves on over the rolls 16 and 17 to the winding roller, 29.

Before the machine can commence working a portion of the paper wound on the roller, 1, has to be led completely through the whole apparatus. The course of the paper is from the roll, 1, behind the transparent plate, 8, round the roller, 6, between this latter and the counter roller, 12, down over the rollers, 5 and 13, on to the travelling bands, 18, where the paper end is secured between the pieces, 19 and 20, over the rollers, 26, round the roller, 14, through the squeezing device, 28, over the drying cylinder 15, round the rollers, 16 and 17, on to the roller, 29, where the clamped end of the paper fits into a suitable slot in the same. Thus it will be seen that the sensitive strip itself forms the connection between the various parts of the whole apparatus. Jakob Röttgen and Julius Frey, Klettenberg, Cologne.

**EXPOSURE INDICATORS.**—No. 19,902. 1907. This invention has reference to apparatus (for the purpose of preventing double exposure of photographic plates) in which the shutter is locked to the dark slide, when it is "closed" after exposure of a plate. The object of the present invention is to provide a device of this kind which is simpler in construction, has fewer working parts, and is quite as positive in action as those heretofore proposed.

In the annexed drawings Figs. 1, 2, and 3 are respectively, side elevation, end elevation, and plan of a shutter locking device.

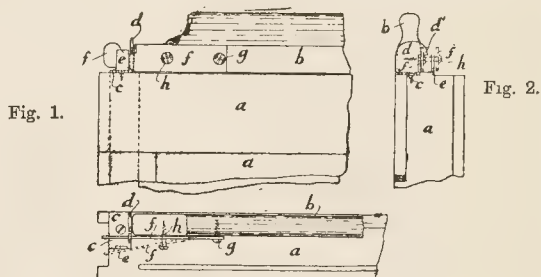


Fig. 1.

Fig. 2.

*a* is a dark slide of the usual pattern, and *b* is its shutter. Screwed to slide *a* is a small piece of sheet metal *c*, having an upstanding flange *d* undercut at *d*<sup>1</sup>, and an upstanding flange *e* disposed at right angles to *d*; *f* is a spring plate firmly screwed to the shutter at *g*, but movable on screw *h*, the head of which constitutes a stop to limit its outward travel.

When the slide is loaded in the dark-room, the user, in closing

it, moves the spring plate *f* by the finger, so that its free end is outside the flange *e*. (See Figs. 2 and 3.) The shutter *b*, on being drawn to expose the plate, the spring *f* (being freed from flange *e*) moves to its normal position, close to the shutter. Then, when the shutter is pressed inwards again, after exposure of plate, the spring first moves into contact with the edge of flange *d*, is pressed outwards a little by the contour of same, passes down between the flanges *d* and *e*, and springs into the recess *d*<sup>1</sup> of flange *d*. The shutter is now closed, and cannot be opened until the spring *f* is purposely moved by the finger clear of the flange *d*. Samuel Lowe, 26, Market Square, Shirebrook, Mansfield.

**STUDIO STANDS.**—No. 20,057. 1907. The base of the stand may be constructed in the usual manner, that is to say, it may consist of an upper and lower circular table, to which three legs are attached. The holes in the tables are triangularly shaped to receive the sliding pillar, which is of a triangular section. Between the tables is suspended a vertical swinging arm, carrying a roller at its free end. The arm, which is preferably hinged to one of the tables, exerts (by means of a spring) a pressure against one face of the triangular pillar sufficient to keep the other two faces in close contact with the corresponding faces of the holes in the tables, the roller preventing any undue binding and allowing the pillar to rise and fall smoothly.

A means is sometimes provided for adjusting the spring controlling the swinging arm according to requirements, and the ordinary worm wheel and rack gearing is employed to regulate the height of the camera. But if the stand is required only for carrying a light camera, the gearing and spring arm is dispensed with, and an eccentric gripping device substituted, consisting of a substantial spring metal arm, hinged to the upper surface of the lower table near its outer edge. The arm projects inwards towards the triangular pillar, against which its free end rests at an obtuse angle, and in such a manner that the weight of the pillar and the camera causes the arm to bind, by an eccentric thrust on the pillar, which drives the latter towards the bearing surfaces of the holes in the tables, as formerly described.

When it is desired to lower the pillar, the spring arm is raised by the hand or otherwise, whilst the pillar is allowed to slide downward, and is immediately gripped when the arm is released, the latter offering no resistance to the upwards movement of the pillar.

In both methods a metal strip is fixed on the triangular pillar to take the stress of wear. Thomas Percival Woolfe, 34, Upper Street, Islington, London.

**PORTABLE FLASH PORTRAIT LAMP.**—No. 19,333. 1907. The invention consists of a chamber of fireproof fabric within which a charge of magnesium powder is burnt. The chamber is made collapsible. Joseph Leclerc, 69, Boulevard de la Rochelle, Bar-le-Duc, France.

**TELEGRAPHIC TRANSMISSION OF PICTURES.**—No. 27,570. 1907. The method described in the present invention consists in the use of a pencil of cathode rays acting upon a fluorescent screen. These rays, as is well known, are capable of being easily controlled by an electrical or magnetic field in such a way that they follow the alterations or fluctuations without any delay or sluggishness.

In order to produce the complete picture, successively, point for point, the point on the screen (upon which the pencil of cathode rays acts) is first displaced to correspond to the displacement of that point in the plane of the picture or field of view to be portrayed from which the rays acting for the time being in the transmitter proceed. Such displacement is caused by the action upon the pencil of cathode rays of a suitably varying magnetic or electric field; and the intensity of the action of this pencil of cathode rays upon the fluorescent screen is altered according to the degree of brightness at the time being of the point of the plane of the picture or field of view to be portrayed.

This double influence can be effected in the following way for example:—At the transmitting station the rays or pencils of rays proceeding from the various points of the plane of the picture or field of view are thrown on to a photo-electric receiver by means of an optical system which receives two movements, each independent of the other, in two co-ordinate directions. These movements can be effected by rotary movements of mirrors or by oscillatory movements of mirrors or lenses, or by a combination of rotary and oscillatory movements of similar parts, or by any

suitable movements of an optical system, in any case, the arrangement being such as to successively direct the pencils of light rays proceeding from the various points of the plane of the picture field of the view being portrayed on to a photo-electric receiver whereby the movements of the optical system simultaneously cause the formation or alteration of electrical, continuous, alternating polyphase currents or of electromotive forces which at the receiver station set up or influence two corresponding components of magnetic or electric field which in their turn move or vibrate pencils of cathode rays. These components must be such that the resulting movements of the pencil of cathode rays, and consequently therefore the movements of the luminous point produced there upon the fluorescent screen also, correspond to the movements or displacements of that point in the plane of the picture or field of view which is to be portrayed at the time, which displacements arise during one or other of the independent movements of the optical system.

The electrical currents or electromotive forces before mentioned may be produced at the transmitting station by inductors which execute the same movements as the movements of the optical system or they may be acted upon by rheostats, the resistances of which are automatically varied according to the movements of this system.

The variation of the brightness of the luminous point produced upon the screen by the pencil of cathode rays to correspond to brightness of the point on the plane of the picture or field of view which is to be portrayed, may be effected by subjecting the pencil of cathode rays, before it comes within the influence of before-mentioned magnetic or electric field, to the deflecting action of another electric or magnetic field, the intensity of which depends upon the current, or the electro-motive force, generated or varied by the photo-electric element which is influenced by the pencil rays issuing from that point of the plane of the picture or field of view which is to be portrayed, at the time. Under the action of this deflecting field the pencil of cathode rays is partially reflected back by an impervious screen and its intensity is consequently more or less reduced. Boris Rosing, Technological Institute, Petersburg.

**CINEMATOGRAPH MECHANISM.**—No. 5,336. 1908. The invention consists of a cinematograph apparatus provided with a removable film box, which can be inserted into the casing containing motor and film moving mechanism. The film guiding mechanism is arranged outside the film box, and the latter is constructed with two apertures for the passage of the film to and from the guiding mechanism, shutters being provided to close these apertures when the film is traversing the same. Alberto Lleó and Pablo Audou, 35, Paseo de Gracia; and Claudio Baradat, 89, Paseo de Gracia, Barcelona, Spain.

The following complete specification, etc., is open to public inspection before acceptance under the Patents Act, 1901:—

**PLATES.**—No. 13,999. Packages for photographic plates or films in means for the successive exposure of said plates or films. Optische Anstalt C. P. Goerz, A.-G.

## New Trade Names.

**WARPRESS.**—No. 302,941. Photographic chemicals and dry plates included in Class 1. George Nelson, Dale and Co., Ltd., Elms Mills, Wharf Street, Warwick, manufacturers of gelatine. 11, 1908.

**BRILLAC.**—No. 303,769. Chemical substances used in manufacturing photography, or philosophical research and anti-corrosives. Produits Chimiques de Croissy, Ltd., 29, Rue de Rome, Paris, France, manufacturers. June 6, 1908.

THE "RAJAR" CAMERA, offered monthly by Messrs. Rajar (Limited, Moberley, Cheshire, for the best print on "Rajar" P.C. has been awarded to Mr. J. W. Leake, 2A, Dulverton Road, Leicester the print having been judged the best during June. The paper on which the print was made was purchased from Mr. A. Newton, 1 Street, Leicester.



## Analecta.

Extracts from our English weekly and monthly contemporaries.

### Ortol-Soda Developer.

Mr. C. H. Hewitt (writing in "The Amateur Photographer and Photographic News" for July 21) gives the following directions for use of ortol-soda developer:—

ORTOL-SODA.		
(A) Ortol—Potass. metabisulphite .....	35	grs.
Cold water .....	10	ozs.
Ortol .....	60	grs.
(B) Soda—Sodium carbonate .....	1½	ozs.
Sodium sulphite .....	1½	ozs.
Water .....	10	ozs.
(C) Bromide—Potass. bromide .....	½	oz.
Water, up to .....	5	ozs.

These solutions the developer for use is compounded as follows:

	Flat subject or Full exposure or Vigorous negative.	Normal subject or Normal exposure or Normal negative.	Contrasty subject or Short exposure or Soft negative.
(A) Ortol ...	1 oz.	1 oz.	1 oz.
(B) Soda.....	1 oz.	1 oz.	1 oz.
(C) Bromide ..	6 minims	3 minims	none
Water...	none	1 oz.	4 oz.

For those who desire to work factorially, it may be well to say the appearance is somewhat more rapid than with pyro-soda, under normal conditions, that is, taking a developer mixed according to the centre column, will be about twenty seconds, the time of development for a contact bromide negative being about one and a half minutes. These figures have been obtained with considerable frequency in developing recent exposures, and agree with factor of 10, which is that given by Watkins.

### About Changing-Bags.

Changing-bags (says a writer in "Photography and Focus" for 21) may be divided into two kinds—those which are provided eye-holes, so that the photographer can see what he is about, those which are not. The latter are very much simpler to make, in actual use are quite as handy as the former, as the "seeing" is a best a poor affair, and should really not be necessary. The writer used both, but the simpler form is what he prefers on all grounds, as that described below.

The first proceeding was to make three separate bags, like pillow cases, just sufficiently different in size to enable them to slip one over the other. The outer bag when laid flat on the table I find measures 29in. by 17in. One end of each bag is closed and the other open. Near the closed end of each bag, on one side of it, is sewed a sleeve of the same material 9in. long, and just large enough to pass easily over the hand. When the three bags have been made they are placed one inside the other, and are stitched together at the mouth of the bag and at the end of the sleeve, and nowhere else. This is important, as we must have no pin or needle holes through any two of the bags in the same place. The sleeve is made with an elastic to close round the wrist, and the mouth of the bag is doubled over and provided with cords, by which it can be fastened in the same way.

INTERNATIONAL EXHIBITION OF PHOTOGRAPHY will be held during the summer of the present year at Kiev, under the auspices of the Imperial Russian Technical Society, which has its headquarters in that city. The exhibits will include examples of pictorial colour photography and lantern slides, scientific, and technical photography, the last section being devoted to photographic processes and trade exhibits. Full particulars and entry may be obtained from the secretary, Mr. S. T. Horovitz, Technical Society, Kreshchatik, 10, Kiev.

## New Books.

"The Photographer's Handbook." By Charles Harrison and John C. Douglas. London: John Lane. 3s. net.

This volume is one of the "country" handbooks which Mr. Lane has issued from his press at the Bodley Head, and those who know the previous numbers of the series will readily agree with us that, in the matters of type setting and printing, there is no elementary manual of photography which approaches it. As regards the text, we cannot say that the authors exhibit any exceptional qualifications for their task. They express themselves clearly, and we cannot accuse them of misleading the reader on any points. But what they say has been said in scores of handbooks before, and has frequently been made the subject of more comprehensive treatment in a smaller space than it obtains here. On the other hand, we would do the authors (or one of them) an injustice if we omitted to mention the reproductions of the very excellent selection of photographs which illustrate the volume. The subjects include such extremes as seashore figure studies, harbour scenes, sheep grazing, fishing boats in a gale, portrait studies, sunset effect at sea, sea gulls, still life, the open sea, and a nude study, every one of which, without exaggeration, is an excellent example of first-rate technique, and must needs be an impetus and an example to the reader of the book. The half-tone reproductions are done in the best style, and "The Photographer's Handbook" is thus the only elementary manual of photography which is also nice enough in appearance to form a gift-book.

Kolloidchemie und Photographie. By Dr. Lüpcke-Cramer. Dresden: Th. Steinkopf. Mk. 5.80.

There is sometimes a danger in scientific matters of explanations being mere forms of words. To call a mysterious reaction "colloidal" may be comforting, but it is not necessarily illuminating, and it may be that the word "colloid" will disappear when the phenomena termed colloidal are better understood, or, like "latent heat," will remain as a memento of imperfect understanding. In this connection it may be well to insist that Graham's fundamental distinction between crystalloid and colloid matter can no longer be considered as sound. Rather should we say that these terms stand for general states of all matter according to the conditions. Meantime, one welcomes every thoughtful contribution to this most vexed branch of chemistry, and to photographic chemists Dr. Lüpcke-Cramer's work should prove of great value and interest. It is divided into two parts, an introduction to colloid chemistry, which does not pretend to be exhaustive, and an epitome of the author's own applications to photographic problems. A short description is given of the chief properties of hydrosols or colloid solutions, with extracts from Graham's original memoir. Following this are sections dealing with Van Bemmelen's researches on the nature of gels, and Böttcher's on the structure of colloid bodies. The second part contains Lüpcke-Cramer's own special applications of colloidal chemistry to photographic problems, the preparation of colloidal silver, and of the colloidal silver halides. The basic matter for photography is described, although this is dealt with more fully in the work next noticed. There then follows the part played by adsorption in photographic processes—viz., in the formation of the latent image, of the developed image, in the retention of salts by gelatine and the finished image, and in the tanning of gelatine and other organic colloids. It may be said of all the problems that the author has dealt with them in a most suggestive fashion, if not always conclusively. One could wish, however, for a more systematic and orderly exposé of results and methods; in writing of colloids it is not necessary that the style be colloidal too. The author brings weighty evidence to support the view that the photo-halides are nothing but "adsorption" compounds of colloid silver with silver halide, and that the latent image is also of this nature. It is questionable if it is correct to term the substance of the developed image, as also of the amorphous silver halide, a "gel." The solid coagula obtained by throwing down a "sol" or colloid solution probably differ very much from true gels, such as that of gelatine. But Cramer's experiments throw much light on the complex nature of the photographic image after development, after primary fixation, etc. Very interesting is the section dealing with the tanning of gelatine by heavy metallic salts, which is attributed

to the formation of colloid complexes or adsorption compounds between hydrolysed hydroxide and the gelatine. The work should be studied by every photographic chemist who desires to see what "the chemistry of the future" has to do with his special province; it is clearly printed with some good microphotographs, and printing errors are few. There is a name index, but none to the subject matter.

Kolloides Silber und die Photohaloide. By Carey Lea und Lüp-  
Cramer. Dresden: Th. Steinkopf. Mk. 4.80.

This is a German reprint, compiled and annotated by Dr. Lüp-  
Cramer, of Carey Lea's investigations on colloidal or soluble silver and the coloured silver haloids—silver haloids darkened by light or photo-haloids, as Lea first termed them. These must always be of fundamental importance in photographic chemistry, and, scattered as the American investigator's writings were, photo-chemists owe considerable thanks to Dr. Cramer for collecting and editing them. It is to be noted that Cramer dissents from the "subsalt" theory of Carey Lea as unnecessary, and that Lea's use of "allotropic" practically coincides with the modern use of "colloid." The book contains a biographical notice of Carey Lea, and some notes, then follow Lea's own work on the combinations of the silver salts, and the production of the "photo haloids" by chemical means. That the detailed description of the reactions is by no means superfluous, every worker in colloid chemistry will acknowledge. The book extends to 147 pages, and is uniform in production with that noticed in the foregoing.

"How to Make Oil Prints by the Rawlins Process." By Robert  
Demachy. London: James A. Sinclair and Co. 6d.

This book, of course, describes M. Demachy's own method of working the oil process, but his advice is obviously sound, and will appear to be so even to those not acquainted with his work, if there be any such benighted persons. He lays great stress on the importance of a good negative and of correct exposure, and his method of determining exposure with an Artigue actinometer is very simple and well worth adoption. Throughout he is very particular and precise in the preparation of the print, and he does not believe in relying on the pigmentation to correct faults in exposure. He says: "It is all very well to talk about control and local inking, but control and local inking can only be used with an obedient film, and the film is obedient only when its surface offers the maximum quality of love and distaste for greasy ink," which condition requires a special degree of exposure. The beginner is specially warned *not* to use his muscles when pigmenting, and it is pointed out that the pigmenting action is not an athletic pastime, but requires a delicate touch that is only mastered by practice. M. Demachy's advice is supplemented by a few practical notes by Mr. James Sinclair, and the booklet is just what the oil-printer should have at his hand, since it gives the advice of a master-worker without unnecessary words.

"The Eye: Its Elementary Anatomy, Physiology, and Optical Con-  
stants." By Lionel Laurance. London: The Orthos Press.  
3s. 6d.

This is an excellently arranged and very useful little text-book on the eye, and it contains many items of information that are not to be found in many other more ambitious works. It should be of great use to all students of optics and the eye, but it contains nothing of any importance to photographers. Binocular and stereoscopic vision are only very briefly touched upon, and these are about the only subjects concerning vision that the photographer is generally interested in. There are, however, some interesting specimens of photomicrographs by Prof. Dimmer of Graz and Dr. Lindsay Johnson.

"THE SCIENTIFIC MONTHLY."—The first number of a new periodical dealing with physical science from a popular standpoint makes its appearance under this title, and is published by the proprietor, Mr. Arthur N. Kemp, 26, Shaftesbury Avenue, W. The issue deals with astronomy, chemistry, microscopy, and wireless telegraphy. It also contains reviews of new apparatus. We cannot say we care much for the "scrappy" paragraphs used to fill up odd corners. An example is: "The photographic plate fogs under development more rapidly when under-exposed. The shorter the exposure to light, the more rapidly will fogging occur."

## New Materials, &c.

Brushes and Pigments for Oil Printing. Sold by James A. Sinclair and Co., 54, Haymarket, London, W.

Mr. James A. Sinclair's firm sends us specimens of brushes and pigments, all of which are of excellent quality. The brushes are the "deer's-foot" form and are issued in a series of sizes. The prices are much the same as those usually paid. No. 10 brush costing 4s., and a No. 5 1s. 9d. Those who study M. Puyo's articles on his practice of the oil process which we published so long ago as August 30 of last year, will not have forgotten the importance there laid upon the usefulness of the brush of deer's-foot or hind's-foot pattern, the rounded surface allowing both large and small areas being treated. M. Puyo, in a later issue of the "B. J." (September 20, 1907), illustrated the form of brush employed by him. Our first supplies were obtained from the same Paris house as M. Puyo's, and though we cannot precisely whether the brushes sold by Mr. Sinclair are of identical origin, it is open for us to state their exact correspondence to those used by the leading French workers. It is, perhaps, too much to say that the articles in the "B. J." of August-September last year constituted the first detailed instruction by French workers to appear in English, and have no doubt contributed to the great advances made here in oil during the past two months.

The pigments supplied by Mr. Sinclair are in nine different colours and are sold in pots at 1s. each. Messrs. Sinclair also supply French inks, "Encre Machine," and "Encre Taille Douce," used by Demachy, Puyo, and others, and our trial of these has gone a long way to convince us that nothing much better can be desired for work in black tones. The black is a purple black, not the objectionable green black that we so often see, and the two inks together give as much variety in the way of softness as can be wanted. "Encre Machine" is a hard tacky ink, apparently soft on the palette, but working very hard on the print. The other is a soft ink, and by mixing the two, or by using the soft ink over the hard, a great variety of effects can be obtained. It is necessary to use both inks, as the one alone is too hard for many prints, just as the other alone is too soft. Our tests show that these French inks are certainly worth trial by every oil printer.

Oil-Printing Papers and Solutions. Made by John J. Griffin and Sons, Kingsway, London, W.C.

Messrs. Griffin have just produced several novelties for oil printing in the shape of special papers and solutions. Their "Pigmoil" paper is a new one, invented by Mr. G. E. H. Rawlins especially for the oil process. It is supplied in two grades, rough and smooth, and can be obtained either in cut sheets or rolls. Up to 10 plates it is packed in twelves, and the whole-plate packet costs 10s. From 10 x 8 upwards packets contain six sheets, a 10 x 8 packet costing 1s. 5d. and a 12 x 10 packet 2s. 2d. The rolls are of any width, and can be obtained in lengths of 6 or 12 ft. at the respective prices of 4s. and 7s. 6d. It is claimed that the paper is far more suited to pigmenting than the older varieties, as it picks up pigment in the shadows and repels it far more vigorously in the high-lights. This is certainly borne out by our trials, for very fine and very brilliant prints even when we started with a very charged brush. A special "Pigmoil" sensitising solution is supplied at 1s. 3d. for an 8-oz. bottle, which makes 16 oz. of solution. According to the printed instructions, this solution is made up from the following formula:—

Potassium bichromate .....	80 gr.
Potassium citrate .....	1 oz.
Citric acid .....	40 gr.
Water .....	10 oz.

The solution sold ready for use is, we understand, twice the strength of this formula, and therefore requires dilution. These "Pigmoil" materials work excellently in our hands, and the only unsatisfactory feature about them is the name. "Pigmoil"! What a word!

For bromoil Messrs. Griffin have now introduced a special



side paper, and also a special one-solution bleaching solution from a formula worked out by Mr. F. J. Mortimer. The paper seems to be an excellent one for the purpose, and the bleacher works well with it. With other bromide papers, however, we were so successful with the bleacher as with the usual ozobromide mixture, though a one-solution formula is certainly convenient. The bromide paper is the same price as ordinary bromide paper, while the one-solution costs 1s. 3d. for a 4-oz. bottle. We prepared our test plates with Messrs. Griffin's amidol "Cartol," which gave a developer that yielded results just suited to bromide work.

"Seltona" Self-toning Boardoids and Postcards. Made by the Leto Photo-Materials Co., Ltd., 3, Rangoon Street, London, E.C.

"Seltona," the very pleasing matt variety of this self-toning paper, has now been issued also as the thicker "boardoid" postcard already familiar to users of other Leto printing papers. It has been too long before the public to require any further praise as a self-toning paper; the agreeable warm brown tone in the ordinary fixing bath is excellent, and the darker red and purple tones obtained by aid of a salt bath are also characteristic of its quality. For the making of prints for reproduction, insertion in slip-in mounts, or for use without any mount at all, the stouter "boardoid" is a most convenient variety. Its quality is further enhanced by the "plate-marking" outfit supplied by the Leto Co., now in an improved form, which includes a Leto mount or folder in which the plate-marked print is inserted. The Leto outfit includes all the necessary materials for this purpose and costs 1s., 1s. 6d., and 2s. 6d. in quarter, 5 x 4, and half-sizes respectively.

"Scaloid" Developer. Made by Johnson and Sons, 23, Cross Street, Finsbury, London, E.C.

Messrs. Johnson, whose "Scaloid" compressed photographic chemicals we have regularly used with every satisfaction, naturally have our interest in introducing a single-solution concentrated developer suitable for all classes of work, and we took an early opportunity of making trial of it. For negative work Azol is added in the proportion of 15 to 30 minims per ounce, the weaker for under-exposures and the stronger for over-exposures. The directions correspond to strengths of from 1 in 32 to 1 in 24, giving solutions which we found useful and effective in practice. The cleanliness of working of the developer is a conspicuous quality; we can imagine nothing better as regards freedom from fogging sensitivities. Azol causes the image to appear quickly, and density builds up steadily, although, as shown by the developing factor, it is not hurriedly. Of the twelve plates, however, which formed the first test of Azol, we secured all necessary vigour, within ten minutes, by pushing development somewhat beyond the entirely correct point. Azol certainly possesses great developing powers, and the solution can be used for a number of plates in succession. The colour of the negatives is a good black without a trace of stain or veil.

Using the developer for lantern slides, bromide and gaslight plates, we followed the instructions and added a little potassium bichromate solution, with which addition the developer works excellently with all three classes of material. The colour of the transparencies and the prints resembles that obtained with amidol more than any other, and the developer no doubt contains an derivative in its composition. At any rate, the concentrated solution supplies an ideal developing solution for all classes of work. All the "latitude" one wants is obtainable simply by the use of bromide and water, whilst the keeping qualities of the solution appear to be indefinite. Azol is supplied in 3-oz. bottles at 1s., and in 8-oz. bottles at 2s. 6d.

THE CAMERA HOUSE JOURNAL," in its current issue, contains a review of Messrs. Butcher's latest introductions, amongst which are mentioned the miniature "Selfix" camera, the Maitland compass gauge, and a pocket ruby lamp, which will doubtless appeal to tourists and holiday makers in general.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

SATURDAY, JULY 25.

Southend-on-Sea Photographic Society. Outing to Horndon-on-the-Hill.  
Rugby Photographic Society. Excursion to Warwick. C. L. Oechsner.  
Handsworth Photographic Society. Excursion to Berkswell.  
South Suburban Photographic Society. Excursion to Chislehurst. S. W. Tindley.  
South London Photographic Society. Excursion to Hogsmill River.

MONDAY, JULY 27.

Southampton Camera Club. "Art in Photography." C. Daw.

TUESDAY, JULY 28.

Birmingham Photographic Society. Evening Ramble to Marston Green.

WEDNESDAY, JULY 29.

North Middlesex Photographic Society. Technical Meeting.  
Leeds Camera Club. Excursion to Roundhay Park.  
Bainham Camera Club. "Romantic in Landscape." F. C. Tilney.

### ROYAL PHOTOGRAPHIC SOCIETY.

MEETING held Tuesday, July 14. The honorary Fellowship was awarded to Mr. John Spiller, F.I.C., F.C.S., for his valuable services to the Society as president, vice-president, hon. treasurer, hon. secretary, and member of council during many years, and also for his scientific work. Votes of thanks were also passed to the Rev. F. C. Lambert and Mr. Lindsay Johnson for presents of books for the Society's library.

SHEFFIELD PHOTOGRAPHIC SOCIETY.—The question of the formation of a collection of prints of old views of Sheffield was mentioned by Mr. J. W. Wright at the annual meeting, held at the Builders' Exchange, Cross Burgess Street, last week. Several members of the Society, he knew, had negatives of old parts of Sheffield, and he thought it would be very interesting if prints could be got from those negatives and made into an album either for preservation in the Society or to be given to one of the libraries in the city or to the Art Gallery. The annual report showed that the Society was in a prosperous condition. The number of members at the commencement of the year was 172; resignations, deaths, and lapsed memberships numbered 23; new members elected during the year numbered 55; leaving the present membership 184. There had been 18 meetings held during the year, which had been well attended. In addition to these meetings, a number of practical demonstrations had been given at the Society's work room. The establishing of the work room had been a great success. The fifth Annual Exhibition, held in April, was as successful as the previous exhibitions, the number of exhibits being in excess of those at any previous event. Two classes of exhibits called for special mention—colour photography and the loan collections. Very great interest was shown in the "oil" prints by Mr. C. F. Inston, of Liverpool, and the Council were pleased to know that a number of members had taken up the process. The accounts closed with an adverse balance of £17 13s. 1d., as against an adverse balance of £11 8s. 3d. at the beginning of the year. The officers for the ensuing year were elected as follows:—President, Mr. James W. Wright; vice-presidents, Mr. J. W. Charlesworth, Mr. G. Tomlinson, Mr. J. R. Wigfull; treasurer, Mr. T. G. Hibbert; reporter, Mr. T. W. Jury; lanternist, Mr. W. H. Stubbs; elected members, Mr. J. A. George, Mr. H. Hill, Dr. W. H. Helm, Mr. G. E. E. Noble, Mr. H. S. Nutt, Dr. H. G. Paterson, Mr. G. A. Seed, Mr. T. U. Simonson, Mr. Jonathan Taylor, Mr. F. A. Tinker; Exhibition Committee, Miss F. Ashton, Mrs. J. W. Charlesworth, Mr. J. W. Gallimore, Miss A. E. Jago, Miss E. H. Tillotson, Mr. A. Turner, Mr. G. Walton; delegates to the Yorkshire Photographic Union, Mr. J. W. Charlesworth, Mr. J. W. Wright, Mr. J. R. Wigfull; delegates to the Affiliation Committee of the R.P.S., Mr. G. Tomlinson, Mr. J. W. Wright; hon. secretary, Mr. Henry Merrill, 22, Harboard Road, Woodseats.

EDINBURGH PHOTOGRAPHIC SOCIETY.—The Survey Section of this Society held their annual ramble in Old Edinburgh on Saturday,

July 18, under the leadership of Mr. John Geddie, a well-known authority on old Edinburgh. On this occasion they were joined by members of the newly formed "Old Edinburgh Club." The ramble took the form of a walk round the line of the old walls of Edinburgh. Mr. Geddie gave most interesting lectures at various points on the route. A visit was also paid to Heriot's Hospital. The oak panelling and old paintings on the walls of the council chamber, which has been in use since the building of the "hospital" in 1659, the massive carved stone mantelpieces in the kitchen, and the carved oak pulpit in the chapel, were all much admired, as also was the amount of quaint carving round the quadrangle and on the front of the building. This is one of the finest old buildings in Edinburgh.

## Commercial & Legal Intelligence.

**EASTMAN KODAK COMPANY OF NEW JERSEY.**—In addition to the usual quarterly dividends of 1½ per cent. (being at the rate of 6 per cent. per annum) upon the outstanding Preferred stock, and of 2½ per cent. (being at the rate of 10 per cent. per annum) upon the outstanding Common stock, the directors of the Eastman Kodak Company of New Jersey have declared an extra dividend of 2½ per cent. upon the Common stock, all payable on October 1 to stockholders of record on August 31.

## News and Notes.

**THE OLD-ESTABLISHED BUSINESS** of Mr. Philip H. Fincham, at Myton Road, West Dulwich, has recently been purchased by Mr. Charles F. Dickinson, who, for nearly twenty-five years, occupied the position of Mr. Fincham's chief operator and manager.

**ILFORD PHOTOGRAPHIC SOCIETY.**—Mr. Donald S. Parsons having resigned the secretaryship of the above society, the post is now filled by Mr. T. M. Weaver, of 69, Elgin Road, Seven Kings, Ilford, to whom all communications should be addressed.

**THE LONDON COUNTY COUNCIL** has accepted the tenders of the following firms for the supply of lanterns, lantern accessories, etc., for school use:—R. R. Beard, Butcher and Sons, Ltd., A. Clarkson and Co., John J. Griffin and Sons, Ltd., W. C. Hughes and Co. (London), A. Kershaw, and Reynolds and Branson, Ltd. (Leeds).

**ENGLISH PHOTOGRAPHER'S ARREST.**—In the neighbourhood of Belluno, in the Province of Venezia, a man whose name is given as Richard Rottson, of Liverpool, was found with a camera in his hand in the enceinte of the important fort of Monterico, close to Pieve del Cadore. He was, says the correspondent of the *Telegraph*, arrested and taken to Pieve del Cadore. On examination, none of his plates, which were immediately developed, were found to contain any pictures of importance relating to the fortress. However, Rottson was denounced to the Public Prosecutor, and the Ministries of the Interior and of War were notified of the fact. Rottson states that he was in the vicinity of the fort merely by accident, and that he only wanted to take pictures of the landscape, which in the Cadore district is very beautiful.

**THE PROFESSIONAL PHOTOGRAPHERS** of Winnipeg, Manitoba, Canada, have organised a society under the name of the Manitoba Professional Photographers' Association. The following officers were elected:—President, W. W. Robson; first vice-president, H. H. Bryant; second vice-president, A. B. Spence; secretary, A. L. Lees; treasurer, C. R. Lundy. These, together with A. E. Gentzel and J. W. Gibson, form the executive committee.

**WINDOW TRANSPARENCIES.**—Dr J. Bartlett, in a recent article in the "Bulletin of Photography," recommends the revival of the making of enlarged transparencies for window decoration. Such decorative forms of a photograph are rarely attempted by the hurried

amateur of the present day, who probably has never seen the magnificent results obtainable in transparencies, such as those made by Henry Stevens. Dr. Bartlett suggests the production of a transparency which is opalescent, this result being obtained by adopting the following process after thoroughly removing the hypo of the finished bath. The positive is placed in a bath constituted as follows:—

Iodide of iron .....	1 dram.
Water .....	16 ounces.
Iodine (alcoholic tinct.) .....	6-8 drops.

This gives an opalescent effect, and the image is of a beautiful rose tint. Such transparencies hardly need a ground glass to them off. Hardening in formaldehyde and a coat of varnish is sufficient.

THE "NEW YORK TIMES," Sunday edition, of June 28, reproduced one of the largest and most remarkable flashlight photographs made. It is a view of the interior of the Colosseum at Chicago, the recent Republican Convention in session. So distinct in details was the large photograph taken by the "Times" representatives, and so clear is the reproduction, that over 500 faces in the galleries, and the officers on the platform. It is worth serving as a useful memento of an historical event. The photograph was taken by flashlight, and six men worked twenty-four hours in the preparations. Forty-five bags of powder, suspended from rafters of the hall on heavy cables, were exploded simultaneously at the moment of the exposure of the plate.

## Correspondence.

- \* Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.
- \* We do not undertake responsibility for the opinions expressed by our correspondents.

### UNFRAMED PRINTS FOR EXHIBITIONS.

To the Editors.

Gentlemen,—I beg to lay the following proposition before the secretaries of provincial photographic exhibitions. Perhaps they (or their committees) will consider this letter as addressed to themselves in which case it may be of interest to hear their views on the matter. "That any competitor at photographic exhibitions may be permitted to send in prints mounted only."

The reasons against compulsory framing are:—

(a) Damage to frames and glass, especially passe-partout travelling.

(b) Cost of framing and glazing.

(c) Cost of carriage to and from exhibition.

The arguments for (optional) mounting only are:—

(a) Facility in packing and posting.

(b) Saving in cost, both of carriage and framing.

(c) Concusive, therefore, of larger entries and more fees.

(d) The occupying of less wall space.

I am, gentlemen, faithfully yours,

Arkleby, St. Ives, Cornwall.

SYDNEY H. CA

[We fear our correspondent overlooks the vital obstacle to his position, namely, that most photographic bodies holding exhibitions are not so well off as to be able to afford to frame the photographs selected for exhibition. A large proportion of exhibitions are organised for profit, though not infrequently the result is the reverse. Very frequently, too, the time between selection and opening does not permit of any large number of exhibits being framed. It is custom now to frame the pictures sent by foreign exhibitors, and appears to us to be as much as can usefully be done. Apparently our correspondent thinks that prints both framed and unframed might be used together in an exhibition, a proposition which surely not necessary to discuss. Some other points suggested perhaps be best left for our readers' comments.—EDS. "B.J."]



## Answers to Correspondents.

Matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.

Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered in the names and addresses of the writers are given.

Communications relating to Advertisements and general business matters should be addressed to MESSRS. HENRY GREENWOOD & CO., Wellington Street, Strand, London, W.C.

For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street Strand, W.C., make the registration of copyright photographs at a charge of 2d. each photograph, to cover cost of registration fee, form, etc. Unmounted copies of each photograph must be sent with the

### PHOTOGRAPHS REGISTERED:—

14, High Street, Glossop, Derbyshire. Two Photographs of "General" at Talbot House, Glossop.

Thompson & Co., Rose Inn Street, Kilkenny, Ireland. Photograph of Mr. J. All Ireland Hurling Champions.

"Mead Cliff," Meadfoot Lane, Torquay. Photograph of Mr. F. J. J. Driving from Saddle Rock, Torquay.

Hard, 121, Oldham Road, Ashton-under-Lyne. Three Photographs of Whitehead of the Lancashire County Cricket Team.

27, Church Street, Preston, Lancs. Photograph of New St eet, Preston.

Shmore, 11, Brand Street, Hitchin, Herts. Photograph of "General" and Sir John Gort at Letchworth.

FOR INVENTION.—Will you advise me how to protect an invention for a short period, so I can offer it for sale, and what cost, etc.?—A. E. READ.

cost will be £1. Apply to the Comptroller, Patent Office, Compton Buildings, London, E.C., for the printed form of application.

STUDIO.—I saw mentioned in your JOURNAL some special treatment or putty for keeping out the wet and used on studio. Was the name "Carson," and can you furnish me with address? I am sorry I did not keep the cutting for future use. Can you the trouble of replying.—CARELESS.

Carson and Sons, Grove Works, Battersea, S.W.

GLASS.—Impossible for us to say. Try on one or two scraps of glass.

—Mawson and Swan, Mosley Street, Newcastle-on-Tyne. Give a list of the most useful and permanent colours in the market, page 837.

—May I ask a question as under? Last April I was employed by a travelling photographer as operator, retoucher, etc., and came over from Ireland to this place. After being with him for several weeks, a letter was placed in my hands by himself stating that I did not require my services any longer, giving no cause as reason in dismissing me. In the first instance he engaged me on telling it was a permanency, and hoping I should accept of it. When he told me it was not a fair dismissal (as when he paid me nothing, nothing was said), he thereupon told me if I was dismissed by his dismissal I had better give him mine, which I did not. Although it is two months since I had to go, should be glad if you will tell me if I could, upon suing him, win the day, as I have no money to do so and would rather take my chances than lose everything.—J. B. D.

—If you were paid a weekly salary you are entitled to a week's salary (not more), or a week's salary in lieu of the notice. It is not of no use your suing for more than that. The fact is your employer said the engagement was for a permanency nothing; an agreement to that effect should have been in the contract to be of any value.

B. SOLUTION.—Will C.C. toned with the above, as in page 492 ("B. J.," 26th ult.), be as permanent as if gold and platinum?—OLD KROW.

—The opinion is that the prints should be fully as permanent.

POSTCARDS.—Can you tell me if there is anything on the market with which I could do the titling of postcards (which must be sensitive)? I remember seeing some years ago a small holder

into which the type was screwed to make a person's name; it is something of this sort I want. If you can give me an address of where I am likely to obtain this I shall be much obliged. 2. Also do ferrotype plates require any coating before placing postcards on same, and would they require any special polishing after using a few times?—POSTCARDS.

1. Appliances for the purpose are sold by Richford and Co., 8 and 9, Snow Hill, E.C.; O. Sichel and Co., 52, Bunhill Row, London, E.C.; and W. Butcher and Sons, Camera House, St. Bride Street, E.C. Another method, which we have frequently given in this column, is that on page 807 of the "Almanac." 2. Usually no treatment is necessary. If any, a little solution of spermaceti wax 20 gr. in benzole 1 oz., may be rubbed on the plates with a piece of flannel, and the glass afterwards polished with silk rag or chamois leather.

LUMINOUS PAINT.—Would you kindly inform me where I can procure Balmain's water-process luminous paint?—EXPERIMENTUS.

John J. Griffin and Sons, Ltd., Kingsway, London, W.

THIN NEGATIVES.—I use a single-solution developer, made up with metol 2 drms., hydroquinone 3 drms., metabisulphite 1 oz., carbonate of soda 6 oz., water 80 oz. Unfortunately my assistant put in 6 oz. of soda sulphite instead of 6 oz. carbonate of soda, and a batch of plates were placed in developer before this was known. After being in developer for five minutes (usual time for being developed in), they were taken out and found to be very thin, and more like positives, although detail was clearly shown. They would not develop up further, and are quite useless for printing. Is it possible to "blacken" the negatives in any way? I cannot get another sitting.—PERPLEXED.

The best thing you can do is to intensify with the uranium formula as given on page 802 of the "Almanac." We would have answered this query in last week's "Journal" had it been addressed to the Editors. Queries which arrive on Wednesday morning, not marked "Editorial," reach us too late for reply in the Friday's issue owing to the large number of small advertisements received by the same post.

H. H.—There is no reliable list published.

RETOUCHING (H. L. B.).—Your retouching is very fair, the restraint shown in working the study of old lady being its best feature, although some of the deeper lines on lower half of face are unduly removed. The work on print marked No. 2 is very good and natural, the likeness is preserved and the grain not overdone. No. 1 shows a wrongly directed touch, especially on the cheeks—the effect is vertical. The lady in group is rather ragged edged, and No. 3 shows the retouching too plainly. Conceal your technique more with softer blending and fewer lifts of the lead.

METABISULPHITE.—In the letter by Mr. B. J. Edwards in the "B.J." for February 15, 1907, page 129, on making up pyro and soda, he says: "For the pyro solution the metabisulphite of soda in crystals (not powder)," etc., etc. Will you tell me what is the difference between the crystals and powder? I have tried to get the former in this town without success, and am told there is no difference, and one chemist told me he had never heard of crystals.—OLD KROW.

The crystalline form is a mark of purity, and, further, powder which has been in stock for any length of time has most probably deteriorated owing to its finer state of division. We advise you to get the crystal metabisulphite of potash (which is just as suitable as that of soda) from Messrs. Mawson and Swan, Newcastle-on-Tyne.

OVERNETH'S LIGHTKUPFERDRUCK.—Can you greatly oblige me by telling me how I could find out working formulae, etc., of Overnether's process of etching copper, in which the positive film of a transparency is stripped, converted to a chloride, put into contact with a copper plate, and the action hastened by electricity?—E. C. W.

The method, which was called "kupferlichtdruck," consisted in making a negative in chloride emulsion direct on the copper. At the time of Overnether's death in 1887 it was a secret. Etching copper by electricity was patented by Sir Joseph Wilson Swan, but we believe the process was never actually carried out. On the face of it this Overnether process seems to be a process for making photogravure, and on the information given we cannot see that there is any advantage over the common Talbot-Klic method.

**RETOUCHING** (reply to "A. S.")—You must send us better prints if you wish us to criticise your work; these are absolutely useless for the purpose. Make them on glossy P.O.P. to good, level strength to show the detail of the retouching. Tone and fix the lot, writing on the back of each print the time taken to retouch. You should submit studies of a child, a young man or woman, and an aged face of either sex, showing wrinkles and character marks for preference.

**T. J. GOBBETT**.—If you will say what dyes you are using at present we will try and answer your query next week.

**H. E. SIMPSON**.—There is no publication which contains more information on the subject. We may refer you to the "Colour Photography" Supplements which appear with the first issue in each month of the "B.J."

**EMPLOYERS' LIABILITY ACT**.—I employ several canvassers (house-to-house), on commission only. Should anything occur in the shape of an accident while at work am I liable under the Workmen's Compensation Act, or are they simply agents, working on their own behalf, not receiving any salary?—**INSURANCE**.

This is a query we cannot answer definitely. The Employers' Liability Act contains many knotty points, and, so far as we are aware, the question you put has not as yet been raised in any Court of Law. Until it is, the question is an open one.

**YELLOWED PRINTS**.—I shall feel indebted to you if you can tell me the cause of so many of my prints going yellow, or after a time—a short time—showing yellow patches, like the samples sent herewith. At first I thought it was because they were not washed sufficiently, but now I feel sure that is not the reason, for I now wash them thoroughly in a dozen, or more more, changes of water, and then leave them in dribbling water all night. Still they seem to turn out as before. Quite recently I have had a lot returned by customers and I have had to replace them.—**COUNTY PHOTO**.

We may tell you at once that the long soaking that you have recently been giving the prints has really added to the evil rather than otherwise: The actual cause of the trouble is that the prints are not completely fixed—that is, the silver salts have not been converted by the hyposulphite of soda into the soluble state, so that they can be removed by water. That is evidenced by examining the prints by transmitted light. The remedy is to allow a longer time in the fixing bath, and have a stronger solution than you say you employ.

**SILVER SAVING**.—We have read in one of the old volumes of the JOURNAL that a considerable quantity of silver is contained in the used developing solution, and that workers should be careful to save it. Since reading this we have been careful to save all our old developing solution and it has now accumulated to a large quantity. We shall be obliged if you will tell us the simplest way to recover the silver from it?—**BAD TIMES**.

We are sorry to tell you that you have had all your trouble for nothing. What you read applied to the developer used for plates in the wet collodion process. That was always rich in silver after use; indeed, if it was allowed to stand for a short time, metallic silver was deposited in it without any further treatment. The alkaline developer, from gelatine plates, contains no silver, and is therefore worthless. Gelatine plates contain no free nitrates of silver, whereas collodion ones contain a good amount of it, which is reduced to the metallic state in the development.

**SITTERS' RIGHTS**.—A couple of years ago we took the portrait of a lady customer, at that time not a person of note. Since then she has gained some notoriety, and her portrait, the one taken by us, appeared in an illustrated paper a fortnight ago, but without our name under it. We wrote to the publishers of the paper, asking them to remit the usual fee for the reproduction. The reply we got was to the effect that the lady supplied them with the portrait and that they would not pay us anything. What can we do to recover a fee, and how much should we demand, seeing that our permission was not asked?—**WILTS**.

You can, of course, do nothing, as you are in no way entitled to any fees. The lady paid you for taking her portrait, and she has the right of doing what she likes with it.

**VELOX**.—The bright sparkling points in the print sent are due to air bells imprisoned between the print and the ferrotype plate on squeegeeing. Possibly there was only one air bubble when the print was laid on the plate, but that was broken up into innumerable

small ones in the squeegeeing. More care in the future will avoid this in the future.

**Y. Z.**—If the agreement is not stamped it is of no value, a late employee can start business just where he likes and cannot prevent him.

**H. J. BIRD**.—The general design of the studio is good, and well be improved upon; but it is a little too short for professional work—groups and full lengths. We should not its being four or five feet longer, if that is possible. Systems of blinds are good, but the horizontal system, in case, is the preferable. The material and colour enclosing your letter are good for both sets.

**S. AND COMPANY**.—The copyright is unquestionably yours; you did not register it you can recover no damages for its infringement. All you can do now is to register the copyright, prevent the further sale of the piracies. You can receive for what was done prior to the registration. But if there are, as you say, having a large sale, the publishers may wish to come to terms with you for the continuation of it.

**A. C. H.**—Better write to the makers of the paper, send examples of your troubles. They will be better able to cause of them than we are from your mere description, and the way, is very vague.

**ATAK**.—The patent about which you inquire, we find, is beyond the provisional stage, consequently the details of the process have not been published. Formerly the provisions of the patent were not completed, and the provisions published, now they are not, they remain as the inventor's.

**J. E. WARD**.—From the description, we know the apparatus is Johnson's pantoscopic camera, for taking panoramic on flat plates. It is evidently out of repair, and cannot be repaired.

**OPERATOR**.—There is no fixed rule as regards holidays in studios. Some give a fortnight, some few more, and some, indeed, none at all. Very generally no holiday is given to those who have not been in the employ for at least a year. You have only been in your present berth six months, and you are surprised that you are not to have a holiday, and that you have one in your last place of course makes no difference to your present employer.

**G. H. CREASY**.—Hunt's Book, "Researches on Light," has been in print for many years. It is possible that you might secure by means of an advertisement in our columns. The book is now, and we expect you, if you get it, will have to pay for it beyond its published price. Try Mr. Tregaskis, High Holborn.

**J. O. JONES**.—The Petzval portrait lens is by no means a bad lens for copying purposes, and we are not at all surprised at your enclosing, considering the focal length of the instrument. The best lens for copying purposes is one of the modern anastigmat and next those, a R.R., or the old form of triplet, which means a bad copying lens.

**NOVICE**.—It is not safe to use the fixing bath for more than a batch of prints, and certainly it should not be used for days in succession. Hypo is cheap enough now, so that you need not enter into consideration if the stability of the prints at the moment.

**\* \* NOTICE TO ADVERTISERS**.—Blocks and copy are received for the approval of the Publishers, and advertisements are accepted absolutely without condition, expressed or implied, as to what is the text portion of the paper.

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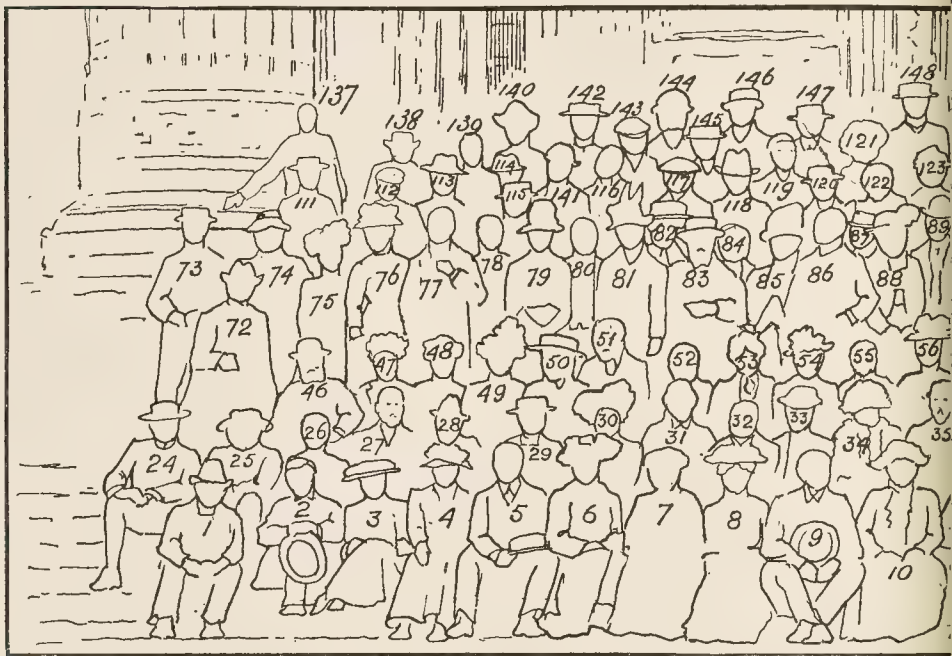
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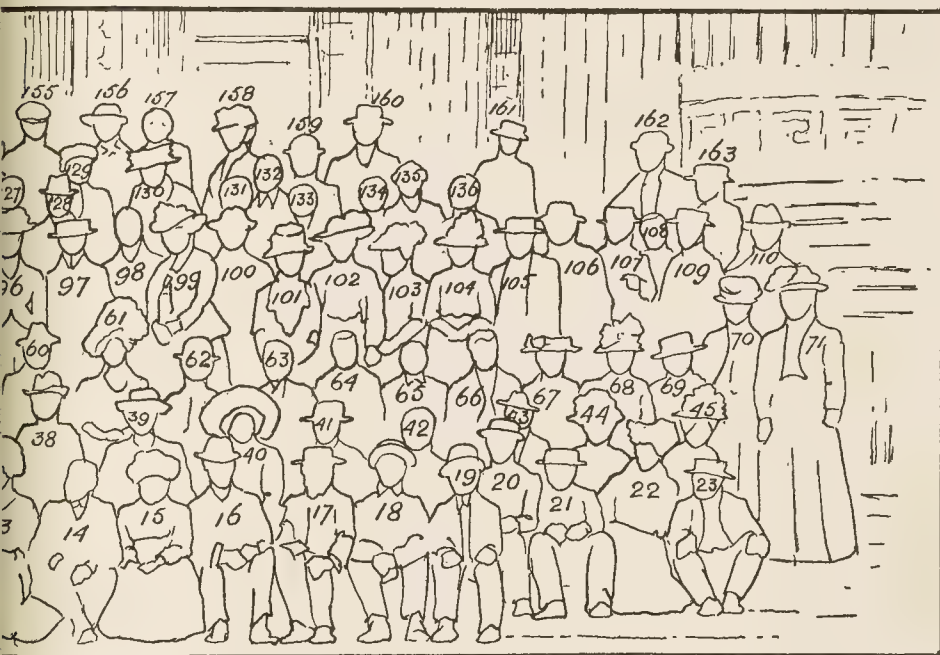
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2517. VOL. LV.

FRIDAY, JULY 31, 1908.

PRICE TWOPENCE.

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## SUMMARY.

essor Namias has recommended a bath of nitric acid after a negative in the mercury and ammonia intensification pro- the added treatment prevents the yellow veil which appears sure of such intensified negatives to light. (P. 580.)

further practical points on the making of diagram lantern e given on page 578. It is pointed out that without obtain- alation, advantage can be taken of the spreading action in the film to obtain lines of greater thickness.

oncluding portion of Mr. Harold Baker's article on photo- will be found on page 583.

ent paper before an American Convention discusses the evil the coupon system in professional photography. (P. 580.)

note a recent appreciation of the child portraiture of Mr. from "The Quiver." (P. 581.)

s for colour screen-plates, colouring photographs, three- rojection, and a tripod head were published last week.

s of a photo-lithographic process recently patented by a rker appears on page 587.

orsley Hinton Memorial Fund now stands at a total of £520. (P. 586.)

pers and list of successful candidates in the recent cine- h operators' examination have been published. (P. 587.)

ra and benzole. Recommendations as to the proper use of ra have been made by an American chemist, and this would save much confusion in photographic formulae.

## EX CATHEDRA.

### Employers' Liability.

The disquieting features of the present Act for the compensation of employees were further confirmed last week by the judgment in the Court of Appeal, which upheld the previous decision of a County Court judge that a washerwoman who comes in to work on certain days is a "workman" within the meaning of the Act. The Court affirmed that such employment was "periodical" as distinguished from "casual," and that therefore in the particular instance the "employer" was liable for the injury sustained by his washerwoman by pricking her thumb with a pin whilst washing the cellar steps on one of the alternate Tuesdays on which she was in the habit of attending. Although framed in the interests of the employees we are afraid that the Act must largely affect this very class prejudicially. It must tend to induce employers to dispense whenever possible with services which expose them to liabilities such as the foregoing. They will be less ready to call in outside assistance for their staffs. The outsiders thus lose their employment, and the regular servants have to perform duties of which formerly they were relieved.

\* \* \*

### Photographic Fallacies.

In a recent article in our columns on "Photographic Fallacies," Mr. A. Lockett referred to the well-known one that the  $f$  number of a stop represents the number obtained by dividing the diameter of the stop into the focal length, and he remarked that this idea still lives and thrives, though the fallacy has been pointed out with monotonous frequency. In the same week that his article appeared we read the following in a contemporary:—"The  $f$  number (near enough for all practical purposes) may be ascertained by dividing the distance which the ground glass is from the stop when the lens, or half lens as the case may be, is focussed for infinity, by the diameter of the stop itself." This lucid paragraph not only lends authority to the fallacy quoted by Mr. Lockett, but introduces another, viz., that in a half lens—which we may safely assume to mean the half of a doublet—the focal length is measured from the stop. The information is, therefore, incorrect for either a doublet or half a doublet, the error in the latter case being a very considerable one. The difficulty of correcting photographic fallacies is by no means lessened when journals devoted to photography assist in perpetuating them, and even help to introduce new ones.

\* \* \*

### Technique.

We see in the "Photographic Journal" that in the discussion that took place on Mr. Horace Mummery's paper on "The Artistic Impulse," much was said about "technique." Some speakers seem to think

that we have too much of it, and others that we consider it too little, but none defined it. Their allusions to it were all delightfully vague, but repeated readings of the discussion leave us with the impression that all had different ideas as to what technique is, or what it should be. The President suggested that the word has a different meaning in photography from that which it has in painting; but it appears to us that photographers would be best advised to leave the word alone, and not worry about its meaning. In painting it is clear enough, but in photography it is even doubtful if the word is applicable—excepting, perhaps, in the case of oil printing—and its frequent use only suggests a meaningless catchword or shibboleth. At present it is used by photographers in much the same vague, non-comprehending fashion as the word "breadth," and the result is that no one can understand either. Wise people are deaf when art talk degenerates into catchwords, therefore the talkers waste their time.

\* \* \*

**Photograph v. Sketch.** An interesting example of the relative value of photographs and of sketches is to be found in Piazzi Smyth's book, "Teneriffe, an Astronomer's Experiment," published in 1858. The author was the first to produce a book illustrated with stereoscopic photographs, and he was greatly impressed with the value of photography for record purposes. One of his illustrations is of the Great Dragon tree of Orotava. This tree is described as being about 60ft. high, and its appearance, as seen in the photograph, is hardly that of a tree at all. Indeed, the author calls it "merely a vegetable: an asparagus stalk with a remarkable power of vitality, and an equally eminent slowness of growth," its growth being so slow that it had the credit of being the oldest tree in the world. There is, however, an illustration of this tree, by Prof. McGillivray, of Aberdeen, in which it is represented as a "huge elm tree, with a superabundance of small leafed foliage, a height of 150 ft., as measured by the man going up the ladder, and the position solitary, in a nearly level country." The absurdity of the illustration induced Prof. Piazzi Smyth to trace its history. McGillivray had copied Humboldt, so that authority's drawing was looked up and found to represent a sycamore about 95ft. high. Humboldt, however, had copied from a drawing by a M. Marchais, and he again from a sketch by a M. Ozone. Piazzi Smyth therefore applied to the hydrographical department of France, and was supplied with a certified copy of the original sketch preserved among Ozone's papers. This showed a tree of the right height, and, though it had too much foliage, still it was possible to look upon it as a rough hurried sketch from nature. This first sketch was not good, but successive copyists had in time produced nothing but a caricature of the idiosyncrasies of the first artist, who had only drawn what he thought he saw, including a non-existent ladder. Precisely similar errors have been perpetuated in many of our text-books, especially the natural history books, which give illustrations of beasts and birds that never yet existed. Since Piazzi Smyth's time photography has done a good deal to correct these errors, but there is still much more to do.

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#### Early Photographs of the Solar Spectrum.

Another interesting passage in Prof. Piazzi Smyth's book relates his experiences in photographing the solar spectrum. He was not provided with the modern "spectrograph" or any instrument approaching it, but simply built a hut or "optical room" with stones, planks, and canvas, and put a slit in the wall. His heliostat was a man with a mirror outside the slit, and he himself worked inside the room, at first making draw-

ings only of the Fraunhofer lines. This was so tedious continued day after day, and repeated several times day, that he tried to photograph the lines, but found no amount of exposure with his collodion plates to bring on anything but a faint coloration in the region. After many failures he tried the effect of a quartz train lent by Prof. Stokes, and "instantly photographic action was most intense." He tried exposures of one minute, of ten seconds, five seconds one second, and still the plates were solarised. He contrived a device to give an exposure of a tenth second, and produced fine results. As he says, "we were mapped down with more certainty in that short than in days by eye and pencil." If not the first photographs of the Fraunhofer lines these must have been early ones, and it would be interesting to know if plates are still in existence.

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#### Casein Carbon Printing.

In our "Patent News" column July 17 we published the specification of a patent for a new process of pigment printing which is claimed to be an improvement on the present carbon methods, in which the chromo salts are employed. Casein takes the place of gelatin, and in place of the bichromates of potash or ammonium ferric ammonio citrate, sulphate of cerium, or a uranyl salt, is used. It may be mentioned that there is no novelty in such an application of casein, neither is that of the ferric ammonio citrate, which is the sensitisising agent in most of the iron processes. There is, however, a novelty in the use of the cerium, or uranium, salt in conjunction with casein. If this process comes into use it will not be on account of its cheapness, for it will be more costly, as sulphate of cerium costs about the number of shillings per pound as the chromate salt, while uranium is very much dearer. Further development, whilst in the ordinary carbon process only is required. It is, however, claimed that paper prepared according to this patent is more sensitive, and keeps longer, after sensitising, than does that sensitised with bichromate. In case any of our readers may like to try the process, we give the formulæ as given in the specification:—5 grams of anhydrous casein are dissolved in 75 grams of water containing 2 cc.s of ammonium citrate. 2½ grams of ferric ammonio citrate are added, and the mixture is admixed, and the substance is spread on paper; the ammonio citrate of the compound described above may be replaced by 2 grams of sulphate of cerium and 5 decigrams of tartaric acid, which are dissolved in ammonia water.

#### ON MAKING DIAGRAM LANTERN SLIDE

A WEEK or so ago we referred to the badness of the diagram slide shown at scientific lectures, and suggested one or two of the precautions that are most necessary in making the negative. It is, however, impossible to produce a good negative from a bad diagram, and it is very easy to produce a bad slide from a good negative. Therefore, other matters besides the negative that require consideration.

The diagram naturally comes first, and this should be drawn boldly on good white paper or card with pen and black ink. Its scale should be twice or three times the size of the final slide image, and the lines should be thick, while the lettering must be large and bold. Fine lines, or small thin lettering, add to the difficulty of preparing a good slide, and they are apt to be invisible on the screen. Bold drawing is therefore



and it is a safe rule to draw the lines so that they are a little too thick, and to write the lettering and descriptions so that they look just a little too large. In the final result they will then appear just about right. A great deal of trouble is the ink, which is apt to be glossy, and to reflect a good deal of white light. Laziness induces people to use one or other of the specially prepared drawing inks on the market, but the best way to avoid trouble is to use nothing but pure Indian ink rubbed fresh with water in a proper china palette. This has more glaze than the ready-mixed inks, and if the drawing is made on good quality drawing paper, and when quite dry is washed well under a tap, the little glaze that exists quite disappears. For line diagrams, however, Bristol is the best drawing material, and this will not stand washing. Generally, washing is unnecessary if a good ink is used, and if the five minutes required for rubbing up the ink is objected to, the next best substitute is, perhaps, Indian's ordinary ink, not the waterproof variety. The best arrangement for copying is undoubtedly a vertical one, with the drawing lying flat down on the floor held down by weights or a slab of plate glass, and the camera arranged vertically above it. We work in front of a window, and the exposure is calculated by a Wynne's meter held facing the light half-way between the window and the drawing. One quarter the exposure indicated for copying in use on a normal subject is then just about right for reducing on the scale suggested. There is no difficulty in fitting up a suitable vertical arrangement to any camera accustomed to make-shift methods of working, but if a vertical light is used, a horizontal arrangement is to be preferred. In this case the whole of the apparatus may be placed on a table, and even illumination can be secured either by lamps on either side of the camera, and equidistant from the copy, or by using one lamp and giving half the exposure with the lamp on one side of the camera and the other half with the lamp in a corresponding position on the other side. Exposure must, of course, be determined by trial, as it will depend entirely on the kind of paper used.

Before stated, backed process plates should be used, and they should be developed for from three to four minutes in a hydroquinone and caustic soda developer containing two grains of bromide in every ounce. After the negatives must be cleared in a strong Farmer's reducer, say a mixture of equal parts of 10 per cent. hypo and 10 per cent. ferricyanide solutions. The safest method is to dip the negative into the reducer and then immerse it under a strong stream of water from the tap, continuing the process until the lines look quite clean and free from fog or veil when examined with a magnifier. A more powerful method is to dip a pad of wool in the reducer and wipe the lines with it, and then the plate under the tap after each application. If the lines are badly veiled this is the most effective method, but must be applied with care, otherwise the "whites" will be reduced also.

After washing, the negative should be carefully examined under a strong light, and if the "whites" appear quite clean it can be dried. If not opaque, intensification is required, but it is not necessary to use such powerful intensifiers as the lead intensifier usually recommended if the lines have been given are carefully followed. The potassium intensifier or mercury and ammonia are quite sufficient. After intensification and washing, the negative should be again applied to clear the slight veil which almost certainly come back over the lines, and a final wash the plate can be set up to dry.

Before printing, the dried negatives should always be laid by laying them face down on a sheet of quite white paper when the lines should show up quite clearly. If

they do not, then further reduction is required. The density of the whites should also be again tested, and it is worth while to intensify any negative that has even a suspicion of thinness, for by ensuring that all the negatives are perfect, the slide-making is reduced to an automatic proceeding. Spotting is always required, and it is very easily effected with photopake.

Next comes printing, and here again only backed lantern plates should be used. With Imperial plates the average exposure is from 10 to 15 seconds at a distance of 6 ft. from an incandescent burner inside an opal globe. Such a burner, with a byepass, is of the greatest convenience in work such as this. Development is conducted with the same developer as that used for the negatives, and will take from two to three minutes. It should be stopped the moment a slight veil appears over the slide. After fixing, the veil is cleared by a momentary dip in a very weak Farmer's reducer, say 10 per cent. hypo solution just tinted yellow with ferricyanide. The final result should then show sharp black lines on a clear glass ground, and any slide that is not quite perfect in this respect is best replaced by a new one.

Imperfections are best detected by laying the dry slide film down on white paper. If the result is a perfectly black sharp image on a white ground the slide can be passed as perfect without a test in the lantern. It need hardly be said that the slides should be varnished. Celluloid varnish is the best to use, and two minutes on a whirler will render the varnish quite hard. Of course, the slide should be heated to ensure that it is dry before varnishing. If any dust falls on the varnish it can easily be removed with a brush dipped in the varnish, and a second coat of varnish will then remove all signs of brush marks. The rest of the work needs no special comment, excepting that masking is greatly facilitated if a wide black border line is put on each diagram. It is then easy to mask up to this line with strips of paper, and good masking adds much to the appearance of the slide.

Uniformity of result is vitiated by using the developer for too many plates. A good rule is to use 1 oz. to each quarter-plate when making the negatives. That is to say, 2 oz. of developer can be used for two plates in succession. In making the positives the developer will go farther, as the time can be controlled by inspection. Two ounces can be used for four slides in succession with perfect safety, but it is unsafe to go beyond five or six slides.

It is worthy of note that the thickness of the lines on the slide depend a good deal on the exposure. Over-exposure gives an halated line, but before halation appears the line grows rapidly in thickness while remaining quite sharp. A very thick line negative will therefore stand a short exposure in printing, while a fine line negative will give the best result with a longer exposure—say, half as long again. In the conditions we described, 15 seconds will be about right for a thin line and 10 for a thick one. This effect of exposure on the thickness of the line is somewhat curious, and very interesting results can be obtained by making a series of graduated exposures.

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AN ALBUM OF BUSCH PHOTOGRAPHS.—The Emil Busch Optical Co., 35, Charles Street, Hatton Garden, E.C., have issued a small album containing photographs taken with "Busch" lenses. The pictures are of sufficient merit to interest the many callers who frequent the dealer's premises for the purchase of their photographic supplies, and it is the company's desire and intention that the album, to which are attached their catalogues of lenses, cameras, and accessories, should have a permanent place on the counter, for the perusal of the dealer and his customers. Dealers are requested to write Messrs. Busch for the album.

## ON THE USE OF NITRIC ACID AS A CLEARING BATH IN INTENSIFICATION WITH MERCURY.

[In this article, which Professor R. Namias contributes to "La Photographie des Couleurs," the use of a 1 per cent. bath of nitric acid for ten minutes is advanced as a means of avoiding the general slight veil produced in mercury intensification. The bath is used before the application of the ammonia or soda sulphite solution.]

It is often noticed that negatives intensified with bichloride of mercury become stained after a time and covered with a general fog or veil which greatly obstructs printing. I have found the same defect to be present, although to a less degree, in negatives treated with bichloride of mercury and darkened with sulphite instead of ammonia. The same drawbacks have been experienced by many amateurs, from whom requests for assistance in the matter have frequently come. I have always attributed part of this failure with the intensifier to the imperfect washing out of the excess of bichloride, which substance in the ammonia bath is converted into the white, insoluble mercuric chloramide. But this cannot be the cause when sulphite is used as the blackening agent, and in fact I have noticed in the course of experiments with the mercury compounds that sulphite of soda acts as a solvent of the majority of mercuric compounds (even of the insoluble compounds) but not of the mercurous compounds. I have, therefore, undertaken a series of experiments in order to discover the cause of this difficulty in the process, and to prescribe a remedy. For this purpose a number of gelatino-bromide plates were first fixed in hyposulphite of soda and washed for twenty-four hours in running water. They were then treated in the following separate ways:—

1. Immersion in mercuric chloride solution containing 2 per cent. common salt, followed by careful washing and subsequent darkening in a bath of ammonia.
2. Treatment as in 1, but adding to the mercury solution not only 2 per cent. of salt, but 1 per cent. hydrochloric acid.
3. Treatment as in 2, but giving the plate, after immersion in the mercury bath, ten minutes in a 1 per cent. solution of nitric acid, afterwards washing carefully before immersion in the ammonia bath.
- 4, 5, and 6. The plate was treated as in 1, 2, and 3 respectively, but a solution of 5 per cent. soda sulphite was used in place of ammonia.

The plates thus obtained were examined by transmitted light, and half of each then covered with a piece of black card and

exposed to light for twelve consecutive hours, for three of bright sunshine fell on them; whilst for the rest of the time they were in bright diffused light.

At the end of this exposure they were again examined by transmitted light, when the following conclusions were reached:

1. Plates treated with bichloride of mercury in neutral solution, and carefully washed for a long time, do not lose of their transparency at the time, but on exposure to light become covered with a general yellow veil which increases the exposure to light. This veil appreciably clouds the image, and, moreover, is not uniform, but varies enough in density in different parts of the plate to produce a print of uneven vigour.

2. Plates treated with a neutral or acid solution of bichloride of mercury and placed, after washing, in a solution of soda sulphite, immediately become clouded with a slight general veil, which becomes a little more appreciable when the negative is exposed to light. But even in this case the coloration is always uniform over the plate.

3. Treatment with nitric acid in 1 per cent. solution, for sufficient time prior to the bath of ammonia or sulphite, invariably resulted in the avoidance of the veil, which form at the time nor on subsequent exposure to light, the negative, say, to any appreciable extent.

The action of the nitric acid is probably based on the removal of the traces of mercury salt which washing alone does not remove from the gelatine film. Apparently this small quantity of mercury is not affected by ammonia, but it is nevertheless sensitive to the action of light. In the case of sulphite these traces of mercury salt are immediately reduced, and thus cause the immediate veil produced by this bath.

The use of the nitric acid solution should completely prevent the formation of an impermanent image in mercury intensification, and should be of particular service to professional photographers who have occasion to do much printing from an intensified negative.

R. NAMIAS.

## AN AMERICAN VIEW OF THE COUPON SYSTEM.

[Papers read before the conventions in America take, as we have often pointed out, a pronounced business tone. The American professional is easily induced to gather with his fellows, enjoy himself, and talk business in the frankest manner. In several recent papers on business topics, the following, read before the Association of the Pacific North-West, deals with a dangerous element in the present-day photographic business, and prescribes the remedy which has been often prescribed in vain.—Eds. "B.J."]

I know that many men say that in business all have an equal right to adopt any price for their products, and any system of inducing trade they may choose, and it sounds as though that were true, and it is true if there is no regard for the elevation of our chosen art, or if you only desire to get all the ready cash out of the public possible, in the least possible time, and then quit the business. I refer to the coupon system of inducing trade. I am informed that there are two classes of coupon vendors: one who tries to redeem his promises to the public, and really gives them all he advertises to give, and another class who make no pretensions of keeping faith with the public by giving what they claim to give, but simply aim to get the customer into their place of business, and then apply the graft methods to the limit. Regarding the latter class, I have no

language suitable to express my contempt for their method of doing business. I cannot call him a photographer, rather, a faker. The former class mentioned are honest, I think, very thoughtless as to the fact that they, by putting their hands deep into the pockets of all photographers who adopt a standard price for their work and endeavor to make good by doing better work from day to day. I can plainly why I say this. Suppose, for illustration, Mr. Smith established himself in business in a certain town, and has a fair price for his photographs—a price that is generally conceded by the craft at large as being a fair living price. He works along quietly and honestly, giving his best efforts and endeavoring to improve his work, and enjoys the confidence of the public. As time goes on the public becomes educated to the price



photographs, until they consider it a standard of value. It may be other photographers in the same town who do not get so much for their products as Smith does, but perhaps they do not quite as good work, and their pictures are not so much. Mr. Smith gets the best trade, as we say, and attracts a less critical class of customers. Now, along comes the coupon man, and he says, "I will give my regular ten-dollar set of photographs for \$1.99 per dozen." Why does the public ever itself to rush to him to be grafted? Possibly, or granting that they do get two free pictures, they certainly do not get a work of art. It is plain that the reason they prefer it such a great chance is simply because Smith has established a standard of value, and the public thinks to get the same value for a small fraction of Smith's price. It seems that it does not require any great amount of reasoning to conclude that the public would not have made this sudden rush for the coupon man had it not been for the fact that Smith was up a living price, and Mr. Coupon Man reaps the benefit of years of effort to establish that price.

Suppose Smith, and all others in the business in that town, to adopt the same price and methods as the coupon man—would they be any rush to either, greater than to the others, granting that their work was equal in quality? I think not. Would they continue a rush very long? I think not. Would either of them? I certainly doubt it. Well, Smith does not lower his price, nor surrender the dignity of his profession by meeting the coupon man in his methods. The coupon man flourishes and cleans up the town; or, if the town or city has a large artistic trade, he continues for a longer time, unless he is a man, pure and simple, in which case he lasts quicker. All the time he is benefiting by the standard established and maintained by Smith. To whom is the coupon man indebted for his success? I think to Mr. Smith. So it is all over this land. We have the art-loving photographer, giving his life to the study of elevating the photographic business, and getting the price up to the point where he can conscientiously put the time and expense into a picture that will make a work of art, rather than a mere photograph, ground out as machinery; and we have ever present the coupon man, reaping a harvest by reason of the existence of the art-loving photographer.

Why are we to get rid of the coupon galleries, and such commercial schemes that tend to degrade the photographic business? It cannot be done by legislation, for that has been tried. It must be done by any other means permanently, except by legislation, by discouraging it in all our convention talks, in our club meetings. Make a thorough canvass of all the photographers in every city, get them to organise into clubs, and in your club meetings, discuss all subjects that tend to exalt and dignify the photographic business as a business. Do not believe in unionism as most other craftsmen organise themselves into, but I do most heartily believe in fraternal

organisations among our craftsmen; and let us there discuss our needs, and let each individual photographer learn that what helps the fraternity at large helps him individually, and anything that tends to destroy the greatest possibilities of our beloved art also hurts each individual member of our fraternity. After you become acquainted with your fellow-photographer in the club meetings you will find that your competitor, and possible enemy, is not a bad fellow after all, and really has many good qualities about him you never dreamed of before, and you will soon become friends, and ready to help each other, instead of doing dirt one to the other. It will not be long until you all agree on the very points we are now discussing. Is there any other class of business men who are so much inclined to avoid each other as the photographic fraternity? I cannot think of any, and yet my observation has been that when they do get together, as I have seen them, not many miles from Seattle, there is no class of men who stand together better, or who really agree more thoroughly, and enjoy themselves in company with their fellows more completely, than do the photographers. There seems to be a bond of sympathy that does not exist among any other class of business men. I have had photographers recently say to me that the time was past when a photographer could sit down in his studio and wait for his customers to come to him, unless he is content to make only a very meagre support. If he has any aspirations to accumulate any considerable amount of money he must adopt the popular method of going after his customers. If this be true, there is but one thing that has made it true, namely, the greed of a certain class of photographers. They have spoiled the public until they (the public) are expecting something for nothing, and the man who does a high grade of work is confined to such a limited few for his customers that he does not accumulate any great amount of filthy lucre. There is a class of people who will not be induced by advertising schemes to take a risk of getting anything satisfactory at one of these commercial picture machines. But the trouble is the mediocre class of people stand ready to get a bargain in everything that offers, and they are equally ready to bite at a photographic bargain. Now, I am not a pessimist, and do not think for an instant that we are going to the eternal "bow-wows," or anything of that sort. On the contrary, I am very much of an optimist, and very hopeful; I am inclined to think that, if you give the calf long enough rope, it will finally choke itself to death. But it may take quite a while to accomplish this end, and I, personally, would like in my lifetime to see the dear old photographic business elevated to a high pinnacle of grandeur that all lovers of the beautiful in art will be proud to take off their hats to it, and honour the men and women who toil under its banner, striving to get, through the aid of its scientific methods, the best possible results in the portrayal of the human face and form.

A. L. JACKSON.

## A MASTER IN CHILD PORTRAITURE.

Under this title there appears in a recent issue of the "Quiver" a most interesting account of the work of Mr. Richard Speaight in child portraiture, illustrated with nearly a score of the portraits which have brought to Messrs. Speaight's studio the little ones of the best families in the land. No less interesting than these photographs and the letterpress relating to them is the account given by the writer, Mr. Gregory Blyth, of the many charitable movements in which the Speaight Bros. have taken an active share.—Eds. "B.J."]

It is old saying that "The child is father of the man" was never illustrated than in the extent to which child-photography has held a permanent and predominant hold on the artistic world the last few years. From the early days of the daguerreotype and our immediate forebears have delighted in the pictures of life which the camera has been able to produce, whatever their merit may have been. At country fairs one may still obtain a type by the wet process, which represents the lowest scale of photography; at the other end are the beautiful pictures pro-

duced by a happy combination of the camera and that increased knowledge of and sympathy with children which is one of the most marked phases of modern thought. We have got beyond the Sandford-and-Merton stage in our ideas of what the child is and what he should be, and our better understanding of him finds expression in the photographs with which we love to surround ourselves in our homes.

One of the most successful workers in this branch of photography is Mr. Richard Speaight, who combines in himself the qualities of a photographer, a psychologist, and a philosopher. He is all three in

one, and it is difficult, as one glances over his gallery of beautiful children, to say which quality is uppermost, for it is certain that his personality plays a great, if not the greatest, part in his work. However expert he may be in the use of the camera, it would be almost impossible for him to obtain such good results were it not that he has made a thorough study of child-nature, and is able to divine by sympathetic intuition the curious thoughts and fancies that flit through the childish brain.

His method of portraiture is at once original and distinctive. He never follows the old-fashioned method of placing a child stiffly on a chair—oh, those horsehair chairs that pricked our tender skin—and telling him to smile while he clicks the shutter. His object is to get to the soul of the child by bringing himself down to the little one's level.

In his studio he has a large collection of comic and mechanical toys suited to the tastes of children of every age. Year by year, as new novelties are introduced into the market, these are replenished, and the children's ideas of amusement are gauged by frequent visits to children's plays such as "Peter Pan" and other entertainments, and by studying the thousand and one children's books that are produced every Christmas. Thus equipped, Mr. Speaight feels that he is in a position to know what his little client requires, perhaps better than the mother herself.

His first object in taking a photograph is to amuse. He makes the child feel at home by awakening his interest in toys or picture books, or even by gambolling about on the carpeted floor of the studio. The camera itself appears to play the least part in this merry little frolic, but at the proper moment, when the eyes of the child open wide at some new wonder, and a smile of delight is passing over his face, the bulb is pressed, and that transient gleam of child-nature has been transferred to the sensitive plate.

By following this method Mr. Speaight has been eminently successful in child portraiture. He finds it difficult, he says, to explain where his success actually lies, but we have no doubt that his kind-hearted personality has as much to do with it as anything else. To hosts of little ones, ranging downwards from the children of the Royal Family, he is a fond and familiar figure. Many of them know him as "Uncle," and to others he is simply "The Cuckoo Man," thanks to a mechanical toy which plays a great part in his little photographic drama. Not long ago a child who had visited Mr. Speaight's studio was driving past the doors in Bond Street with his grandmother, when he insisted on having the carriage stopped, and took in the old lady to be introduced there and then to his friend "The Cuckoo Man."

It would seem as though the work were second nature, a sort of instinct which took its place before the mechanical manipulation of the camera, for Mr. Speaight modestly owns to an immediate success in this branch of his difficult art. Within two years of his making a specialty of child portraiture he had been called to every Royal palace in the United Kingdom. Since then every Royal babe, except perhaps the youngest, has been photographed by him. He has taken children when they have been only five days old, and in many cases those who came to him as little ones have in course of time brought their own babies to him for picture purposes.

At Sandringham and Osborne he is a well-known figure, and a prime favourite among the Royal grandchildren. He tells with delight how some few years ago he suddenly received a Royal command to attend at Sandringham on Christmas Day for the purpose of photographing the little princes and princesses. Singularly enough, he was rather short of apparatus at that particular time, for business pressure had not left him sufficient leisure to collect the newest toys that were on sale in the shop windows. He knew that it would be useless to take down any of the old stock, for children are keenly

alive to changes of fashion in the toy market. The only resource open to him was to borrow from his friends, and this he did, going round hurriedly in a cab and collecting from all who would be sufficient of the season's novelties. Armed with quite a little lot of amusing and mechanical treasures, he rushed down to Sandringham. He succeeded admirably with his pictures, and delighted the Royal Family with his artistic representations of the little ones who were gathered at the King's Norfolk home for the Christmas festivities.

Mr. Speaight says that he finds it essential to the success of work that he should take complete charge when photographing children, whether of the Royal Family or those of more humble station in life. Princes and princesses, royal dukes and duchesses, he sometimes is to be told to "stand aside" when "Uncle" is about, very often he is unable to obtain the best results unless he can work along his own lines without interference from the parents. His successful he has been may be gathered from the fact that year after year some children come to him for portrait purposes, and in many families there has been established what is known as the "Baby Book," in which the little ones appear at the various stages of their growth and development. The Crown Princess of Sweden, the Duke of Connaught's daughter, has one of these volumes, which no one is allowed to handle but herself. Mr. Speaight once offered to place his pictures in it for Her Royal Highness, but the Princess declined, saying, "I will do it myself."

During the last ten years Mr. Speaight and his firm have thrown considerable energy into various movements having for their object the raising of money for charitable purposes, with the astonishing result that during that period they have been the means of collecting upwards of £85,000. Their first effort was in connection with the starting of the King's Hospital Fund, when they originated the Roll of Ministering Children, with the object of raising £20,000 towards aiding his Majesty in putting the finances of the London hospitals on a sound footing. The King, who was then Prince of Wales, took a keen interest in their work, and as a preliminary step he gave instructions that all his grandchildren should be photographed by Mr. Richard Speaight in order to assist the movement. In addition His Royal Highness visited at the Crystal Palace the exhibition of portraits of Royal children that Messrs. Speaight were holding at that time. Another great charitable effort with which they were associated was the Imperial Coronation Bazaar at the Royal Botanic Gardens, one of the most brilliant exhibitions ever held. The whole of the work was designed by Mr. F. W. Speaight and it will be remembered that the opening ceremony was the first public act performed by Queen Alexandra after she came to the throne. So successful was the movement that the receipts for the three days on which the fête was open amounted to £27,000.

It was a noble response, but the sum only inadequately represented the energy and sympathy which Mr. Speaight and his friends put into the work. He is never so happy as when he is with the little ones, listening to their quaint sayings and watching their quaint ways. Every sentence carries its lesson, every action has its meaning, to be stored up and remembered against the time when a new and complex problem in child portraiture—and these are always occurring—crops up in the studio. In many ways each child is a law unto himself. He has his own particular whims and fancies; he follows his own line of thought, and translates this into action which is sometimes of a novel and startling nature. Precedent may count for little in estimating what he will think and what he will do at any particular moment or on any special occasion. But sympathy is the sure key to his understanding, and no one knows better how to use it than Mr. Speaight, an artist among photographers.

MR. ROBT. W. PAUL has found it necessary, owing to the development of the cinematograph business, to secure a general manager for this department, and has appointed Mr. J. W. Smith to this position. Mr. Smith is well and favourably known to every exhibitor, having until now managed, under Mr. Will G. Barker, the business of the Warwick Trading Company. Previous to this he was with Mr. Paul for about six years, before which he was with Mr. Walter Gibbons (who made so well known the bi-tableaux exhibits with the Randvill machine), David Devant (now

Maskelyne and Devant), and Horace Chester, the lecturer whose dioramic effects with the triple lantern, which Mr. Smith worked were a notable form of entertainment. Thus Mr. Smith has a thorough knowledge of the requirements of the up-to-date showman, as well as extensive experience in taking scenes at home and abroad. He is an enthusiastic cinematographer, and boasts that he has never yet failed to fulfil a promise to a prospective customer or disappointed an exhibitor in the delivery of a film, whether in England or abroad.



# OTOGRAVURE FOR THE PROFESSIONAL PHOTOGRAPHER.

## II.

plate has been dusted sufficiently by its three or four visits to the dusting box, it should appear like a piece of beautiful brown velvet with a perfectly even "pile" or nap of quite an appreciable thickness. This grain must now be fixed by heat. The edge of the plate is held in a small hand vice, which should have a slip of thin leather tied to the upper jaw, to prevent the teeth scratching the edge of the plate; a lighted spirit lamp is now carefully waved beneath the plate to heat it uniformly, so that each grain of the plate shall melt and be fixed. Great care must be exercised in this process, as over-heating may cause the particles to run together, forming bubbles. The beautiful brown velvet appearance changes to a blue steely bloom as heat is applied, shrinks, and becomes a blue steely bloom. As this point is reached, the lamp must be withdrawn and the plate allowed to cool. It is now ready to receive the "resist," which is a carbon from the reversed transparency, and is there-fore reversed negative. It may be printed in a special photo-tissue, but red chalk or portrait brown will do as well. For the final working of the process, a gelatine film without any pig-ment would fulfil the purpose, but it would be difficult to gauge the film for printing for the resist. To secure that the picture shall be reproduced on the copper plate, it is necessary that the deepest shadows should be represented by practically bare copper, the deeper tones by a thin film of gelatine, increasing in thickness till the highest lights are represented by an appreciable film of gelatine.

### Etching the Plate.

The mordant or etching fluid is a saturated solution of iron peroxide; it must be so saturated that it cannot part with any more iron, so as to soften the film of gelatine, so that it can only attack the copper where it is not protected by any gelatine—that is, the deepest shadows. When the mordant is poured over the plate, it at once begins to eat away the copper in the deepest shadows, which become deeper in about three minutes it will be noticed that now new places are being attacked, that the thin film in the dark tones is resisting the etching fluid; it is therefore poured off, and a slightly more concentrated solution poured on. The area of attack is now enlarged, and the copper appears as the copper is attacked; in a few more minutes more dilute solution is used, and so on until the whole of the plate is blackened, even the highest light. The full process of etching should be complete in from fifteen to twenty minutes. The etching should be allowed to darken for about thirty seconds before the etching solution is poured off, and the plate washed with a solution of potassium carbonate, which at once stops the action of the mordant. The plate may now be washed, the film of gelatine rubbed off with a nail-brush, and the plate cleaned off with turpentine. If a little lamp-black in oil, or an artist's colour is rubbed into the plate, and the surplus is wiped off, a good idea may be obtained as to the success or failure of the etching. The deep shadows should have a rich velvety look, the rest of the colour in them, while the other tones should appear in proportion, but all much darker than seems correct, owing to the colour of the copper beneath. An impression can be taken on one of the wringing machines with rubber rollers, generally found in most households, is used. Or a friendly printing house will give a copperplate printer on their premises who will pull a proof.

### Inking-up the Plate for First Proofs.

It is decided to try the wringing machine or the family mangle, a board of flat board some inches larger than the plate will answer the purpose on which to lay the plate. Some pieces of thick, smooth board the size of the board will be needed (the professional printer uses pieces of undyed broadcloth); two of these are laid on the board, and two pieces of ordinary new scouring flannel on the board and the "blankets" are inserted between the board and the screws adjusted to give a good pressure, which must be equal on both sides. To test for unequal pressure, turn the board so that the board projects far enough to lay the trial plate on. When the blankets are turned up; a piece of any ordinary paper large enough to more than cover the plate is laid upon it, the board laid down, and the handle turned so that the board and the

plate are drawn between the rollers. If the piece of paper is now examined it will be seen by the depth of the "plate-mark" if the pressure has been equal on each side. The engraved plate is then warmed and some printer's ink rubbed in with a rubber made of a roll of flannel as described for polishing the plate, but the end should have a piece of wash leather tied over it to prevent the flannel wearing away and leaving bits on the plate. The ink must be well rubbed into the warm plate, and, as the latter cools, the surplus is wiped off with a piece of rag. Finally, the whole surface is polished with the fleshy part of the hand, till no ink is perceptible on the light parts of the subject; a small film of ink will, however, be left, which gives just a tint to the lights, unless the hand is rubbed with whitening before giving the last few strokes of polishing. The edges of the plate should be wiped with a piece of rag rubbed on a ball of whitening, and held firmly over the end of the thumb. The plate should then be warmed again, laid on the board forming the bed of the press, and a sheet of damp paper laid on the plate, the blankets laid over it, and the whole "pulled" between the rollers, as in testing the pressure of the press. The paper is then lifted off and the print examined to see what quality of plate has been made. The first attempts at printing should be made on "plate" paper, an unsized make specially prepared for copper-plate printers. It can be damped by laying it in a dish of clean water, and blotting off between blotting paper, with plenty of pressure, for there should be no moisture on the surface. If a sized paper is used, it should be dipped in water overnight, laid in a pile, and wrapped in a towel to keep it moist, and blotted off in the morning. Before being placed on the plate it should be well brushed with an old clean hair brush, and the huff dusted off with a goose's wing, which may be "commandeered" from domestic sources. The inking rubber and also the polishing rubber should be kept wrapped up in clean paper to avoid grit, which might produce scratches on the plate.

If the first few trials have been successful, an attempt may be made to do serious work. Having decided on the size of the reproduction, copper plates should be procured of the necessary size allowing from half to one-quarter of an inch at sides and top, and at least double that width at the bottom. The negatives must be safe-edged before the transparency is printed. When the latter is obtained it should be varnished with celluloid varnish, and masked accurately to size; the edges of the masking must be straight, and the angles properly square. It is better to use opaque paper, such as orange or red, upon which ink lines may be ruled about one-eighth of an inch or more as may be found convenient from the inner edge of the masking. The sensitised red tissue is cut exactly to the size of the space enclosed by the lines, and placed accurately within them, marking the top of the picture upon the back of the tissue.

### Printing Precautions.

A trial exposure must be made on a small piece of the tissue and developed upon a piece of opal glass to secure an exactly accurate depth of printing, which should be sufficient to give all the gradations in the highest lights, but leaving the few touches of deepest shadow bare to the opal, on development. The plate having been grained in the dusting box, the grain fixed by heat, and the plate cooled, it is ready to receive the carbon image. It will be best to use boiled water which has been cooled for putting the carbon tissue on to the grained plate, as air-bells cling obstinately to the rough surface of the plate, and even a very small one is fatal to success. For we must have a perfect negative image in gelatine. All air-bells must be brushed from the wet tissue, and when it has absorbed the right amount of moisture it is laid down in the proper position on the copper, leaving equal margins at sides and top, and the larger one at bottom. It is for this purpose that the top of the picture is marked on the back of the tissue. An expert carbon printer will, of course, manage this part of the work with ease. The plate should remain covered with blotting paper, under pressure, for about twenty minutes. Development must be carried out with great care, because if the paper backing is stripped off too soon the image will leave the copper. If it is left too long, patches of circular marks, suggesting air-bells between the tissue and plate, will shade and spoil the picture. The backing should be removed at the earliest moment that is safe.

### Development of the Gelatine Resist.

Fairly long development in warm water, not rapid development in hot water, is best; roughly, the temperature should not exceed 100 degrees. Every particle of soluble gelatine must be washed from the plate, leaving just a few touches here and there of bare copper, representing the deepest spots of shadow. When development is complete the plate should receive a good rinsing under a gentle flow of water, and to prevent uneven and prolonged drying, methylated spirit should be poured over it, from an open measure (in such a way that it sweeps right across the plate), not from a bottle, otherwise a film or scum of gelatine comes away with the first flow of spirit, and will cling in strings to the surface and spoil the image. It is better to etch a plate as soon as it is dry, because there is danger in keeping it, partly from fingering, which makes greasy marks, but chiefly because if the plate is kept for some hours in a dry atmosphere the film will crack off the plate and the whole work has to be done over again. For if anything goes wrong with the carbon image the bitumen grains must be removed and the plate cleaned and repolished. A careful examination of the plate should now be made, and if there are any defects in development, uneven grain, or any of the thousand and one trifles that spoil a carbon print, it is no use etching it. Tiny pinholes may be spotted out with stopping-out varnish, but all such spottings mean white marks on the print, unless touched out with the burin or graver, on the plate. The margins of the picture and the back of the plate must now be protected. Although expensive "stopping-out" varnishes are recommended there is nothing better than good shellac varnish of the drysalter. To each pint should be added an ounce of green lacquer, so that the parts of the plate covered by the varnish can be seen at once, as the green colour shows up at once on the red copper and red carbon image.

### Marking up the Plate.

The edges of the picture are the most important and most difficult part to protect, as the lines must be straight and the corners right angles. First of all, a line must be ruled with an ordinary ruling pen charged with the green varnish. A pen well used in an architect's office is best, or if such a one cannot be secured, a new one should be rubbed carefully on an oil stone to take off the sharp cutting edge of a new pen, which will tear the gelatine film. A thin steel rule makes the best straight edge, and it can be held on the plate on the margins so that the picture is not touched, for the gelatine image is almost as tender and delicate as a butterfly's wing. The line of varnish should quite cover the edge of the picture, and any errors in the masking may be corrected. To ensure the lines being at right angles to each other a piece of stout cardboard should be ruled with fine ink lines about half an inch apart, at right angles, so that the card is divided in half inch squares. If the plate is laid on the cardboard (which should be twice as large as the plate), with one of the edges of the picture coinciding with one of the lines on the card, the straight edge may be adjusted, and a line drawn with the pen, running across the margins, then without moving the plate the card is turned round and the ruled adjusted to the margins, and to one of the lines on the card, which are, of course, at right angles to the line first drawn, and so on till the picture is enclosed in four fine lines of green varnish. A small sable brush—an old spotting brush answers admirably—can now be used to paint the varnish up to the fine line, then a larger brush is used to cover up the rest of the margins and the back of the plate, which also needs protection. The plate is now ready for etching, and some account must now be given as to the preparation of the solution.

### Preparing Etching Solutions.

Many authorities recommend a set of solutions ranging from 45 degrees to 30 degrees on a Baumé hydrometer for dense liquids. But if photogravure is not part of the regular work of the photographer, it will be found better to make up only one solution, the strongest that will be needed, 45 degrees Baumé, and use just enough to cover the

plate, and when it has done its work a few drops of warm water put into a small beaker, and the solution from the plate poured out. It is then returned to the plate and the second etching given. A few more drops of water put into the measure and returned to the plate, and so on. After each addition of water the density of the solution should be tested with the hydrometer. Then the plate is etched all over. The iron perchloride solution should be kept away and not returned to the stock bottle, because it has been found by some workers that a solution, of which part has been used and returned to the bulk, loses its power when used again some time later, and although it appears to act in the usual way, blackening the copper and apparently eating it away, it may be found that in clearing off the gelatine resist that the biting is so shallow as to be less. This uncertainty is avoided by using the solution once only.

The etching solution seems to improve by keeping, for a few days, but occasionally produce what are known as "devils," irregular star-shaped fissures in the copper, which may, and often do, entirely ruin an otherwise perfect plate, for they cannot be removed, as they hold a good depth of ink they print quite black. They sometimes come all over the face of a portrait. A solution that has been made up and kept for a few weeks will rarely produce a crop of devils. They are one of the terrors of existence of the photogravure artist. All suffer from them at times, yet each has his own infallible remedy, which often fails at a critical moment. The "devils" certainly deserve their name.

The solution is made by dissolving solid iron perchloride of iron in water; about 1½ lb. of perchloride to one pint of water. An enamel saucepan must be used, as the solution will attack iron. When cooled to about 70 degrees it must be tested for strength with the hydrometer, and if it registers less than 45 degrees the boiling should be continued until sufficient water has been evaporated to increase the density to the required degree. A few ounces of the solution should be put into a beaker and liquid ammonia stirred in until hydrate of iron begins to be precipitated. It should be filtered out, washed with ammonia, and added to the bulk of solution. This addition is made for the purpose of neutralising acidity, and the solution should be again boiled. An excess of hydrate will do no harm, and prevent acidity. When the solution is cold it can be allowed to stand for some days, the clear part decanted, and the remainder filtered and stored for use.

When a good plate has been secured, as few proofs as possible should be taken from it, as the copper is soft and the depth of etching is slight, that even pulling half a dozen prints may cause a perceptible amount of wear, since the friction of inking and polishing the plate is considerable. It is best to send it to a printer of etchings, such as Messrs. Annan, of Glasgow, or Messrs. Brooker, Margaret Street, W., who will "steel face" it by electro-depositing iron upon it. This greatly prolongs the "life" of the plate. The prints received from such firms will surprise the new hand, who naturally cannot hope to secure a long time to secure the best a plate will give. Skillful workers improve a plate by working upon it, but only to a very limited extent, and a bad plate can never be made into a good one. Small varnish marks must be removed with a graver, but this is beyond the amateur and must be left to a professional engraver. Small patches of copper can be lightened with a burnisher, larger patches by rubbing with willow charcoal, using the end of the grain at an angle. Small parts can be darkened with the roulette, a small wheel or roller covered with fine teeth, which is rolled over the parts to be darkened, but such work requires considerable skill and no little experience.

A good photogravure print has no rival among photographic printing processes, and certainly it is the finest of all reproduction methods, but as the process is difficult it cannot be regarded as a cheap way of multiplying copies.

Photographers who have a little spare time might do much more than taking up the method, and they will find it most fascinating. Its very difficulties give a zest to the work.

HAROLD BAKER.

A GUIDE TO THE DANUBE.—The Danube Steamship Co., Vienna, which maintains a regular service of steamers from Passau to the Black Sea, and on to Constantinople, sends us the illustrated prospectus of the tour which can thus be pleasantly and conveniently

made from Southern Germany to Vienna, Budapest, Belgrade, Orsora, and Galaz. The romantic scenery and turbulent storms which lie upon the journey provide the materials for a photographic holiday out of the ordinary.



# BENZIN, BENZINE, BENZENE, BENZOL, BENZOLE, AND BENZOLINE.

so much confusion is introduced into photographic formulae and prescriptions by the careless use of the words benzol, benzine, and benzene, which appear in the "Chemist and Druggist," under the above title. We cordially endorse the writer's suggestion that the term "benzole" be kept for the coal body, and "benzine" or "benzin" for the light liquid obtained

from petroleum.—Eds. "B.J."]

confusion seems to exist between these terms, and the recent years similar to them that we reprint the article by Otto Raubenheimer, of New York, which appears in the "Chemist and Druggist," under the above title. We cordially endorse the writer's suggestion that the term "benzole" be kept for the coal body, and "benzine" or "benzin" for the light liquid obtained from petroleum.—Eds. "B.J."]

From this chaos in Great Britain we cross the ocean, and in the new land, America, we get new ideas. Here there is no confusion between the petroleum and the coal-tar products, except in some old books. Mitscherlich's term "benzine" for benzole was discarded over here long ago. Benzine to-day, and for a long time in U.S., means always petroleum benzin, while benzole is the name for the coal-tar product  $C_6H_6$ , and thus these two terms can be readily distinguished. The United States being the home of the American petroleum or crude oil, benzine is very cheap (about 15c. per gal. = 128 fluid oz.), and is used extensively, particularly as a cleansing fluid. However, the American, as well as foreign, druggists sometimes get confused on the difference between benzin, naphtha, and gasoline. In a paper read before the American Pharmaceutical Association in 1905 I described a simple method of distinguishing these three similar hydrocarbons—namely, by their sp. gr. or Baumé hydrometer reading. Benzole C.P., crystallisable  $C_6H_6$ , costs, on the other hand, 75c. per gal. It is used but little—in fact, is little known by the laity. Very few druggists indeed sell benzole. The much-confusing term "benzoline," I am glad to say, is not known or used in the United States. Formerly, and to some extent even now, the word in "petroleum benzin" was written "benzine," which name was, for instance, persistently used by the manufacturers, the Standard Oil Company, who have, however, now changed it. The brand formerly known as 62 deg. benzine is now called P. & V. M. naphtha (painters' and varnish-makers' naphtha). This change in name very likely was made to comply with the Pure Drugs Act, as the brand is not identical with U.S.P. benzin. The term benzole was also formerly written benzol. This is how the change occurred. The American Association for the Advancement of Science, at its meeting in 1887, appointed a committee to consider the question of attaining uniformity in the spelling and pronunciation of chemical terms. The work required extensive correspondence and detailed discussion exhausting over four years, when in 1891 rules were adopted by the Association and recommended to chemists generally in the hope that they would cordially unite in the efforts to bring about uniformity in usage. The following rules pertain to benzin and benzole:—

1. The end syllable "ine" should be used exclusively for alkaloids. In neutral bodies the final "e" should be dropped. "Benzine" should be "benzin."

2. Terminations in "ol" should be used exclusively for alcohols.

3. Terminations in "ole" ; its use is limited to compounds which are not alcohols—for instance, "benzole."

4. Among the list of words which should be avoided in favour of the following synonyms, we find glycerin=glycerol, benzol=benzene. For this reason the U.S.P. VIII. adopted the following nomenclature: benzinum=petroleum benzin; benzene or benzole,  $C_6H_6$ .

Judging, however, from the correspondence in the "Chemist and Druggist," the confusion between the terms benzine, benzole, and benzoline in England is very great. Therefore why not use Faraday's term "benzole" for the coal-tar product, and the term "benzine," or, still better, "benzin," for the petroleum distillate? Thereby all confusion would be avoided.

OTTO RAUBENHEIMER.

day gave this liquid the name "bicarburet of hydrogen," the formula being  $C_{12}H_6$ , which, of course, has since been changed.

About the same time Eilhard Mitscherlich, Professor of Chemistry at the University of Berlin, obtained the same liquid by distillation of a mixture of benzoic acid and lime. Mitscherlich called the name "benzine"—benzoin-like, on account of its odour. Faraday, however, objected to this name, especially the syllable, "ine," as being too similar to the distinctive name of alkaloids. Faraday accordingly called this liquid "benzole." French, however, adhered to Mitscherlich's name, and even called benzine "la benzine." Thus Violette, in "Dictionnaire des Chimiques," 1851, Vol. I., p. 152, says "Benzine voyez Benzole."  $C_{12}H_6$  syn.: benzine, benzène, phène." It is not unusual to find the English translation of a French article of benzine, when the French original states "la benzine," means benzole.

Italy we also find confusion regarding these terms. Orsini, "Acologia Italiana," states, p. 1549, "Benzola-benzina, pheno-

benzola  $C_6H_5H$ ; p. 1610, under petroleum distillates, benzina, benzolina, nafta, etc., sp. gr. 0.720."

is one Continental Pharmacopoeia, the Portuguese, which gives the official title "benzinam" to a benzole of sp. gr. 0.85 pt. 85 deg.

Germany, Austria, and other countries there exists no confusion. In Germany benzin is called "benzin." The official title in D.A.B. IV. is petroleum, and in Ph.Aust. III. is æther. petroli. Coal-tar, on the other hand, is named benzol; official title, "benzol," sp. gr. 0.880 to 0.890, and b. pt. 80 deg. to 82 deg. The "Pharmacopoeia" (supplement to Germ. Pharmacop.), on p. 414, gives as a synonym for benzolum the name "pyroleum benzin," which is the official title for a rather impure benzole in the German Pharmacopoeia. In all German-speaking countries it is understood that benzin means petroleum benzin, and benzol coal-tar benzene.

When we cross the Channel to Old England, there we find great confusion. We not alone have benzine, benzene, and benzol, but have found benzoline. In the first place we have the British Pharmacopoeia "benzol." This is a mixture of homologous hydrocarbons obtained from the light coal-tar oil. It contains about 70 per cent. benzene,  $C_6H_6$ , and 20 per cent. to 30 per cent. toluene,

$C_6H_5CH_3$ . This pharmacopoeial benzol is used as a solvent in the preparation of charta sinapis and also liquor caoutchouc; besides, the commercial benzol is the starting-point in the preparation of aniline dyes, etc. Among the English literature on the confusion of the terms benzine, benzol, and benzoline, I select the following: A. H. Allen, in the "Analyst," 1879, No. 43, and in the "Chemist and Druggist," 1880, p. 386; Proctor, "Pharmaceutical Testing," p. 6; MacEwan, "Pharmaceutical Formulas," 1899, p. 299; Hurst, in "Garment Cleaning"; and McGowan, in his translation of Meyer's "History of Chemistry," p. 457—all show confusion of the terms.

From this chaos in Great Britain we cross the ocean, and in the new land, America, we get new ideas. Here there is no confusion between the petroleum and the coal-tar products, except in some old books. Mitscherlich's term "benzine" for benzole was discarded over here long ago. Benzine to-day, and for a long time in U.S., means always petroleum benzin, while benzole is the name for the coal-tar product  $C_6H_6$ , and thus these two terms can be readily distinguished. The United States being the home of the American petroleum or crude oil, benzine is very cheap (about 15c. per gal. = 128 fluid oz.), and is used extensively, particularly as a cleansing fluid. However, the American, as well as foreign, druggists sometimes get confused on the difference between benzin, naphtha, and gasoline. In a paper read before the American Pharmaceutical Association in 1905 I described a simple method of distinguishing these three similar hydrocarbons—namely, by their sp. gr. or Baumé hydrometer reading. Benzole C.P., crystallisable  $C_6H_6$ , costs, on the other hand, 75c. per gal. It is used but little—in fact, is little known by the laity. Very few druggists indeed sell benzole. The much-confusing term "benzoline," I am glad to say, is not known or used in the United States. Formerly, and to some extent even now, the word in "petroleum benzin" was written "benzine," which name was, for instance, persistently used by the manufacturers, the Standard Oil Company, who have, however, now changed it. The brand formerly known as 62 deg. benzine is now called P. & V. M. naphtha (painters' and varnish-makers' naphtha). This change in name very likely was made to comply with the Pure Drugs Act, as the brand is not identical with U.S.P. benzin. The term benzole was also formerly written benzol. This is how the change occurred. The American Association for the Advancement of Science, at its meeting in 1887, appointed a committee to consider the question of attaining uniformity in the spelling and pronunciation of chemical terms. The work required extensive correspondence and detailed discussion exhausting over four years, when in 1891 rules were adopted by the Association and recommended to chemists generally in the hope that they would cordially unite in the efforts to bring about uniformity in usage. The following rules pertain to benzin and benzole:—

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OTTO RAUBENHEIMER.

## THE L.C.C. SCHOOL OF PHOTO-ENGRAVING.

THE report of the twelfth session of the "Bolt Court School," presented by the Principal, Mr. A. J. Newton, to the London County Council in January last, and now produced as a handsome volume, gives the following particulars showing the continued progress of the school:—

"The total number of individual students who entered during the session was 567, as compared with 565 in the previous session. The maintenance of our numbers is extremely satisfactory, in view of the fact that the attendance at most technical institutes does not appear to have improved in numbers last year, except where new classes had been started.

The position of the students can be classified as follows:—

	1905-6.	1906-7.
Under preliminary training, apprentices, learners, and improvers .....	304	306
Assistants and journeymen .....	157	174
Managers and foremen .....	14	10
In business for themselves .....	90	77
	565	567

The average age was 22.8 years.

We had students from 226 different firms, 17 firms sent from five to twelve students each, and one firm sent twenty students.

The following summary shows how the activities of the students have been distributed:—

	1905-6.	1906-7.
Individual students entering only for photo-engraving classes .....	319	336
Individual students entering only for art classes .....	152	126
Individual students entering for both photo-engraving and art classes .....	54	52
Individual students entering for both lithographic and art classes .....	12	17
Individual students entering for both photo-engraving and lithographic classes .....	7	2
	565	567

The character of the work done in the photo-engraving classes has been fully maintained. We have simplified considerably the methods of three-colour block-making, and the demand for instruction in this work continues as great as ever.

In the lithographic classes the work has been very satisfactory. In Mr. Baxter's class the quantity of work turned out is rather less than last session, but the average quality is better. Fifty-three colour jobs in from three to ten printings have been executed, and thirty in black only. About 400 stones were used. In Mr. Howard's class the work has also been satisfactory, and the attendance has been better than last year. There have been about 100 stones drawn.

An Advisory Sub-Committee for the School has been appointed by the Council, and the first meeting took place on Tuesday, February 12, 1907. The following members were appointed:—Mr. D. Cameron-Swan, Mr. Leslie E. Clift, Mr. A. E. Dent, Mr. Carl Hentschel, Mr. C. T. Jacobi, Mr. W. Stevens, Dr. C. E. Kenneth Mees, Mr. F. C. Tolhurst, Mr. Emery Walker, Mr. H. Snowden Ward, and since then the committee has been strengthened by the addition of Mr. T. R. Way, representing lithography, and Mr. Will Rothenstein, a representative artist, and Mr. J. Diviani, representing the Process Engravers' and Lithographic Artists' Society. There is no doubt that this committee will be of very considerable value to the school; already various members have made several important suggestions.

It is evident the trade continues to manifest its interest in the school, to judge by the constant applications I receive for technical advice, always freely given, and the inquiries for assistants. Further, the list of firms offering prizes has again been supplemented this year, so that now the best student in every department of our work has the opportunity of winning a prize value £2 2s."

The report, it should be added, is a publication of great technical interest, as it is made up almost entirely of examples of the various photo-mechanical processes prepared by students of the school. Of special interest are the impressions from half-tone blocks, taken on a paper containing no added mineral matter. The advantages, as regards both strength and absence of distressing surface-glare, are here clearly demonstrated, and the half-tone blocks are well rendered.

## THE HINTON MEMORIAL FUND.

WE give below a list of donations, additional to those published on our issue of May 1, for the above fund, further contributions which, however small, will be welcomed, and should be addressed to the hon. treasurer, Mr. Reginald Craigie, at 52, Long Ac London, W.C., marked "Hinton Memorial Fund."

	£	s.
Amount previously acknowledged .....	368	18
Oxford Camera Club .....	2	2
Anon (Newcastle-on-Tyne) .....	0	5
Leicester Photographic Society .....	2	2
F. Beasley .....	1	1
Miss B. McKerrow .....	0	2
Col. A. Curran .....	1	1
B. Schön .....	0	10
Viborg, Denmark .....	1	1
C. F. Grindrod .....	1	1
Miss H. Bean .....	1	1
H. Snowden Ward .....	3	3
Birmingham Photographic Society .....	1	1
A. Kaye .....	0	2
Mrs. Strutt .....	0	5
Worthing Camera Club .....	1	1
F. D. Colebourn .....	0	5
Mrs. M. Chance .....	1	1
Wellington and Ward .....	10	10
J. C. S. Mummeary .....	2	2
A. J. Freeman .....	0	5
Mrs. C. Kinder .....	1	1
"Dundonian" .....	0	10
Col. A. G. Haywood .....	0	10
Mrs. T. E. Ward .....	0	10
Miss L. M. Nutler .....	0	5
H. G. Doggett .....	1	1
Norwich and District Photographic Society .....	3	10
Hackney Photographic Society .....	10	2
E. M. B. .....	0	5
G.E.R. Mechanics' Institute Photographic Section .....	1	2
Watford Camera Club .....	1	1
Borough of Tynemouth Photographic Society .....	1	1
J. H. Anderson .....	1	1
Tyneside Geographical Camera Club .....	1	1
S. Jettles .....	0	5
Norwich and District Photographic Society .....	0	5
Torbay Camera Society (per A. J. Anderson) .....	5	12
Hampstead Scientific Society .....	1	1
F. Hollyer .....	2	2
N. Anderson .....	0	10
Mrs. M. E. McKeggie .....	2	10
A. Phipps Lucas .....	1	1
J. Craig Annan .....	3	3
Photographic Society of Ireland .....	12	0
Anonymous .....	1	16
F. H. Evans .....	1	1
Arthur Marshall .....	1	1
Anon .....	1	16
Houghtons Limited .....	5	5
Leek Photographic Society .....	6	6
Rev. A. Clarke .....	0	10
Isle of Wight Photographic Society .....	3	0
G. M. S. .....	0	2
W. G. Harrison .....	1	1
Anonymous .....	1	1
L. .....	0	6
South London Photographic Society .....	1	4
City of Belfast Y.M.C.A. Camera Club and Ulster Photographic Society .....	3	2
Walton (Liverpool) Photographic Society .....	1	1
West Surrey Photographic Society .....	2	2
T. Clarke .....	1	1
Southampton Camera Club .....	6	7
The Great Effort Club .....	1	0
Liverpool Amateur Photographic Society—		
J. Dudley Johnston .....	2	2
R. Williamson .....	1	0
C. M. Hamilton .....	0	10
W. A. Taylor .....	0	10
C. F. Inston .....	0	10
Bedford Camera Club .....	1	13
H. Dunn .....	2	1
Cardiff Windsor Photographic Society .....	1	2
Dr. G. P. Jordan .....	1	1
F. A. Joyner .....	1	1
Slough Photographic Society .....	1	4
Miss Crump .....	1	1

Carried forward ..... £504 5



Brought forward .....	£504	5	4
rd Camera Club (second donation) .....	0	2	6
Park and District Photographic Society .....	0	10	0
Stoney, C.I.E. ....	0	12	6
W. (Ceylon) .....	0	5	0
astrian" .....	1	1	0
Barnett .....	0	10	0
thian Photographic Association .....	1	10	0
urn Camera Club .....	2	0	0
Photographic Club .....	0	8	0
chnic School of Photography .....	3	13	6
E. ....	0	10	6
Simmonds.....	1	1	0
	516	9	4

## EXAMINATIONS IN CINEMATOGRAPHY.

second examination of cinematograph operators and exhibitors, is held under the management of a Joint Committee of the Cinematograph Manufacturers' Association of Great Britain and the Northampton Polytechnic Institute, London, took place at the Northampton Institute on June 29 and 30. The examiners were Messrs. Nevil Maskelyne and S. D. Chalmers. The candidates were successful in securing the higher certificate, and in securing the preliminary certificate. The names are as follows:—Higher certificate—W. G. Barker, London; H. Boddington, London; W. T. Coulson, London; L. D. Dickson, Edinburgh; J. E. Evey, Norwich; W. H. Hayles, Cambridge; W. J. Hogan, London; W. F. G. Jewell, London; G. A. Leonard, London; J. Neal, London; W. E. North, London; G. Palmer, London; J. Smith, London. Preliminary certificate—E. Kirby, London. Both grades of certificates the candidates have to pass an ant practical test; but for the higher certificate written questions are also required to questions set in the scope of the subject. In their report, the examiners state that the average standard was better than in the previous examination; and that all attention to the necessity for a thorough acquaintance with the L.C.C. regulations and the reasons for making them. They suggest that manufacturers be asked to mark resistances in such a way that operators may be led to appreciate the theory of the subject. They also suggest that those in authority over operators do all they can to impress upon their subordinates the importance of obtaining certificates of efficiency, and when opportunity occurs practical evidence of the value attached to a certificate may be given by showing a preference for the employment of only tested operators.

Following was the written paper, in which four questions (of which (1) and (6) had to be two) had to be answered:—  
1. You are required to project a 15ft. picture, using alternating current at 100 volts. What current would you take? Describe the apparatus, carbons, and fuses you would use, and show by a sketch how the connections are made.

2. Describe in detail your method of making the connections for a lamp of high power. State exactly what you do, and in what way to get the best possible light.

3. Describe the appearances on the gate (a) when the light is too close to the condenser; (b) when the light is too far to the left and too far down.

4. What focal length lens would you require to project a 12ft. picture with a working distance of 30ft.?

5. Describe the substance of the L.C.C. regulations about resistances, and the reasons for making these regulations made?

6. What would you do first and afterwards in the following emergencies:—

(a) The back member of the condenser broke and part fell into the lantern.

(b) The handle came off.

(c) The film took fire in the gate.

(d) The tube blew off the oxygen cylinder.

(e) The coal gas (hydrogen) cylinder was found to be empty half an hour before the show.

(f) You found the film to be the wrong way when you began to turn.

7. B.—Four questions (of which (1) and (6) must be two) to be answered.

8. You are required to project a 12ft. picture, using continuous

current at 200 volts, and are required to take as little current as possible. What carbons, fuses, and resistances would you use?

2. How would you test the quantity of gas in your cylinders? How much gas would you require to show a picture 10ft. diameter for one hour?

3. Give a sketch of the "gate" and mask; show how the light should come on the gate when projecting the film.

4. Describe how you would centre up the film and lantern slide. What should be the focal length of a lantern lens to be used with a 24in. focus lens? (Explain how you get your result.)

5. What are the L.C.C. regulations as to the use of lime light? Give reasons for these regulations.

6. What would you do first and afterwards in the following emergencies:—

(a) A spring broke.

(b) The re-winding belt came off.

(c) The fuse went.

(d) The bellows of the regulator burst.

(e) The shutter came off.

(f) A cry of "fire" in the hall.

## Photo-Mechanical Notes.

### A Photo-Litho Process.

ACCORDING to the recent specification (No. 6,093, of 1907), a patent has been taken out by P. L. V. Gaultier, of 45, Boulevard de la Republique, Versailles, France, for a process of photo-lithography, which consists of taking a print from the (collodion) negative of the subject on glazed paper sensitised with bichromate, which print is developed in water and lightly worked up with transfer ink. Inking and sponging are repeated several times, and the impressions then transferred to the printing surface. The following are details of the procedure:—

The negatives employed in the process are preferably collodion negatives, which give more delicacy than gelatino-bromide, particularly with line drawings, and also produce a great uniformity in intensity. For photography in colour the negatives of the primary colours are employed for the preparation of the three distinct printing surfaces necessary for lithographic printing in colours.

The photographic negatives serve to produce the transfer proofs. The latter are obtained upon paper covered with a sensitive film, such as gum, sugar, albumen, and other substances. Experience has proved that the substance which is best for the film is gelatine, and this substance should not contain any trace of grease, and should be hard and resisting when applied to the paper. The gelatines employed in the manufacture of gelatino-bromide plates answer well. For instance, those known as "Nelson's," "Heinrichs," and "Simeons," which are classed among the hard gelatines, can be employed, and even mixtures of these. If the gelatine is lacking in consistency a saturated 1 per cent. solution of alum can be added to the hot solution, this addition being made by introducing a small quantity at a time, meanwhile constantly stirring the gelatine. A 25 per cent. solution of gelatine is then prepared, the gelatine being allowed to swell for some hours and dissolved in the water bath. The solution is then filtered through a fine mesh material, care being taken to avoid the formation of froth or foam which produces air bubbles very difficult to get rid of later on. The filtered gelatine is afterwards maintained at a temperature of about 80 deg. C. during the length of the subsequent operation.

The paper which is covered with gelatine should be of very good quality, very resistant and glazed; it is advantageous to employ, for example, the makes known as "Rives" and "Steinbach." The sheets of paper are joined in pairs, back to back. These sheets are then plunged into the bath of dissolved gelatine, a suitable to and fro movement is imparted to them, and a series of slight shaking movements, in such manner as to uniformly deposit the layer of gelatine and to free the air bubbles attached to the paper. The sheets thus covered are then dried, being so arranged that they remain flat. Once dry, they are put up in a roll and kept dry, and protected from dust.

The gelatinised paper so obtained is then sensitised. For this

purpose a solution of bichromate of ammonia in water to 5 per cent. is employed, in which the sheets of gelatinised paper are immersed for about two minutes, and are gently stirred in order to moisten and to sensitise uniformly all parts. The sheets are then completely dried in a dark place or a room, properly lighted.

The sensitised paper thus prepared serves for printing the positive from the photographic negative. The exposure is made, as usual, in a frame, and preferably in diffused light, care being taken that the pressure of the sensitised sheet upon the negative is equal and sufficient throughout. The time of exposure depends upon the intensity of the negative and the strength of the light; electric light properly regulated will be quite suitable. When the image is satisfactory the print is removed from the frame and is developed simply in cold water, which is often renewed, especially in the commencement. This development should have a minimum duration of two hours, but it can be prolonged for a much longer time without ill effect.

The proof taken out of the water is drained and dried until it shows no further trace of water. The image is then formed by parts of bichromated gelatine, which, under the action of the light, have acquired the property of repelling moisture according to the intensity of the negative, whereas those parts which have been deprived of light and which consequently correspond to the opaque parts of the negative, are, on the contrary, impregnated with moisture and give up the bichromate which they contained. A gelatinised surface is thus produced having lithographic properties of stone or zinc. Then there is passed over the same sheet a special roller, charged very lightly with transfer ink, to which turpentine oil may be added in case the image appears with difficulty. This roller is an ordinary roller of white swansdown or "molleton," which is covered with ten layers of white flannel, after the swansdown has been brushed and cleaned several times with a liquid composed of alcohol and ether, and known by the name of "Hoffman liquid." This roller is passed very gently over the inked proof in an even manner in all directions, and over all parts of the image. Suppose, for example, that it has been operated over a line drawing, the latter is covered, more often than not, with a veil more or less dense, and the lines appear charged with a little ink. With a smooth sponge containing very little water, the veil is lifted and removed, the rubbing being done with precaution, until the background again becomes white, the lines being seen in dark grey. The flannel roller is again passed over, then the sponge, and these two operations are repeated several times in succession until the background of the picture refuses the ink, the lines becoming charged more and more with ink. A slightly wet sponge is then passed over the proof in order to remove from the lines small drops of water which they may hold.

The image thus obtained is left to dry, and when once dry possesses no cavities except upon the surface where the ink is deposited, which permits of it being transferred. The back of the picture is moistened and then wiped in such a manner as to remove the excess of water; the proof is then sufficiently flaccid to facilitate transference and sufficiently moist to permit the ink to be detached from the black parts of the image. The proof is then applied on a stone, rubbed with pumicestone, or a sheet of zinc finely grained, and is placed in the press and submitted to pressure three, four, or five times slowly and evenly. Then the plate of zinc is taken out and the transfer proof is removed. If all the operations have been properly conducted the ink is transferred to the zinc, and the proof which has served its purpose has again become white, and freed, or almost so, of the ink which it carries.

The transfer once finished, the plate is gummed lightly and then inked by the usual means employed in zincography. An advantageous mode of inking is by means of a greasy rag. The surface may be coated with bitumen and the latter sensitised; the image obtained is then very strong. The printing surface obtained can then serve for all subsequent prints, and can be preserved in the same conditions as the ordinary printing surfaces.

The surfaces from which it is desired to remove transfers have no need to be grained in this process, a simple scraping is sufficient, or they are treated with benzole, which dissolves the ink of the image, after which they are washed and dried. After this they are passed into a bath of hydrochloric acid or nitric acid, diluted to 10 to 15 per cent., and then washed. This concluded, they are plunged into a solution of cyanide of potassium in water, to the proportion of 10 per cent., where they are left for about 15 minutes, and then finally washed and dried.

When reproducing to the same scale a hand-made drawing or chart made upon thin paper or upon tracing paper, a negative print is made on paper, and this negative is treated and used as already described.

When, instead of reproducing a line drawing, it is desired, on the contrary, to reproduce a half-tone image, the operation is carried in the same manner, care being taken, however, to obtain a strong dense photographic negative, and to only expose the picture a short time; moreover, the rubbing off with a sponge is dispensed with.

In the case of pictures "en camaieu," produced by the superposition of several tones, the image contained in the negative is decomposed into two or three partial images, the superposition of which constitutes a single image. These partial images form separate printing surfaces, which are inked with the same colour, but of different tones. The only difficulty to be overcome is the procuring of the three necessary images which are derived from the same negative. These images of different tones are obtained by the difference of the times of exposure to the light of the gelatine papers. The times of exposure depend essentially upon the quality of the negative and the nature of the negative. Experience has, nevertheless, shown that the proportion between the times of exposure should correspond approximately to the following conditions:—

One unit of time for the print giving shades or background detail.

Two units of time for the print minus the weakest tones.

Three units of time for the print giving the very weakest tones.

The registration of the partial images should, moreover, be exact. It is possible, when these images are of small dimension, to transfer them on to the same zinc plate, leaving sufficient margin between them and then subsequently to separate them for printing in tracing upon the negative, before its exposure to the light, registering marks, consisting of finely drawn crosses, are drawn upon the three images. Their exact superposition in the subsequent printing guarantees the accurate superposition of the tones. In case one of the three images happens to be of a different size from the others a separate image may be made by means of prepared thin paper. For this purpose one of the images is chosen as a standard, and a proof card is pulled therefrom, and proofs upon prepared paper are pulled from the other plates. After having cut up the latter proofs on to fragments the fragments are applied to the proof on card, and are then registered with the standard image on the card in the ordinary manner; the assemblage of fragments makes up a complete image of correct dimensions. By a transfer conveniently made from these assembled pieces of paper, new transfer proofs are obtained, having exactly the desired dimensions.

For the production of coloured pictures the same method of section is observed. These monochrome proofs are first pulled, according to the usual processes, by the aid of screens, one giving the red, the second giving the blues, and a third the yellows contained in the object photographed. The superposition of these three colours constitutes the coloured image or picture. Three printing surfaces are thus produced corresponding to these colours, and the printing is then performed, the complete operation for each of the monochrome proofs being, as in the case of the reproduction of a line drawing, with an ordinary photographic negative. It is always indispensable that the pictures should contain absolutely the proper proportions of red, blue, and yellow that they require, without which, after printing, the colour would be found to dominate the other and the image or picture would be defective.

In the example described it has been supposed that a transfer proof has been made on to zinc, but other metals possess in different degrees lithographic properties of stone or zinc; for example, aluminium, ferro-nickel, silver-plated copper, and others.

#### PHOTO-MECHANICAL PATENTS.

The following patents have been applied for:—

SCREENS.—No. 15,021. Improvements relating to half-tone and other screens for photography. William Charles Masser and William Hudson, 18, Southampton Buildings, London.

SCREENS.—No. 15,022. Improvements in half-tone screens. William Charles Masser and William Hudson, 18, Southampton Buildings, London.



# FORTHCOMING EXHIBITIONS.

ember 11 to October 24.—Photographic Salon. Entries close August 31. Sec., Reginald Craigie, 5A, Pall Mall East, London, S.W.

ember 17 to October 24.—Royal Photographic Society. Entries close September 1. Sec., J. McIntosh, 66, Russell Square, London, W.C.

ember, 1908, to January, 1909.—Kiew International Photographic. Sec., S. T. Horovitz, Technical Society, Kreshtchatik, 10, Kiew, Russia.

1909.

ary 6 to 27.—Northern Photographic (Manchester). Entries close December 11, 1908. Sec., S. L. Couthurst, Broad Oak Road, Worsley, Manchester.

## Patent News.

*process patents—applications and specifications—are treated in the Mechanical Notes."*

the following applications for Patents have been received between July 13 and 18:—

**PLATE-HOLDERS.**—No. 14,827. Improvements in or relating to photographic plate-holders and the like. Kodak Ltd., Chancery Lane Station Chambers, London.

**PLATES.**—No. 14,828. Improvements in or relating to photographic cameras. Kodak Ltd., Chancery Lane Station Chambers, London.

**PHOTOGRAPHS.**—No. 14,837. Improvements in and relating to apparatus for taking or reproducing animated pictures. Louis Huet, 53, Chancery Lane, London.

**PHOTOGRAPHY.**—No. 15,050. Improvements in or relating to the photographic reproduction of colours. Edmond Charles Alain Caille, Norfolk House, Norfolk Street, Strand, London.

**VIEWING APPARATUS.**—No. 15,188. Improved means or apparatus whereby objects can be sighted or photographed from submarine or other situations. The Improved Periscope, Ltd., and Arthur Cyril Webb Aldis, 46, Lincoln's Inn Fields, London.

## COMPLETE SPECIFICATIONS ACCEPTED.

*Specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

**COLOUR-SCREEN-PLATES.**—No. 28,406, 1907. A feature of the present invention is the employment, in the manufacture of the polychromic colour-screen, of a printing or exposure screen composed of lines or other small elements of graduated opacity: that is, the lines are not made merely quite black and quite clear, but in addition to black lines and clear lines each set of the series forming the plate contains a semi-opaque line. Another feature of the invention is that the colloid film or coating which, as is after described, is differentially stained after exposure on the printing screen, is a single film or coating, and is not made up either by super-imposing separately made and stained or by producing separate strips of film side by side upon the plate. A colour-screen according to the invention is made from a single sensitised colloid film by one printing operation, followed by differential staining, and it is preferred to commence operations with a film deeply stained with one of the colours.

The following is a description of one method of carrying out the invention assuming it to be applied to a glass plate: The plate is treated with a solution of gelatine, fish glue, albumen, or other material containing a strong solution of a blue dye—for example, Prussian blue. This film or coating is sensitised, say by the addition of bichromate to the solution, or by the immersion of the plate in bichromate solution after coating. The plate thus coated is exposed to light, preferably daylight or the light of an electric

arc, beneath a printing screen of graduated opacity, and conveniently consisting of a number of sets of lines, each set comprising a black or opaque line, a semi-opaque line, and a clear line. This printing screen may be made in any convenient way; for instance, by photographic means from a ruled screen which has black lines of twice the width of the clear spaces or lines, this ruled screen being printed in two operations with a shift equal to the width of one line between the two printing positions.

The exposures in these two printing operations are of different duration to produce in one case a very dense or black line, and in the other a semi-opaque or grey line. The duration of the exposures is adjusted so that the density of the lines is such as to be suitable for the end in view.

After printing beneath the screen of graduated opacity, the plate is washed until the blue dye is completely washed out of the lines which have been protected by the black line in the printing screen, and partially washed out of the lines which have been partially protected. The result is that the coating bears a number of sets of lines, one of each set being strongly blue, another—the partially washed-out one—a blue green, whilst the third line is clear.

The plate is now soaked for a sufficient time in a yellow dye of such a nature that it will soak only into soft gelatine, dyes of this description being well known. As a result, the blue line, which consists of hardened gelatine, remains blue, the blue-green, partially soft line becomes pure green owing to the addition of the yellow, and the clear line becomes strongly yellow.

The plate is then soaked in a solution of a deep red dye, such as carmine. This dye penetrates only into the soft gelatine or yellow line and turns it into scarlet. Thus the screen finally comprises sets of three lines in juxtaposition, the lines being respectively scarlet, green, and blue. The lines can, of course, be of any required fineness, the degree of fineness being governed by that of the original ruled screen.

On coating the colour-screen thus made with an emulsion which is rendered panchromatic, the plate can be used for direct photography in colours in the manner now well known.

Although it is preferred to commence operations with a film deeply stained with one of the colours, yet the invention may be carried out by performing all the staining operations after the printing of the sensitised colloid film. In such a case the first staining would be by a dye that only stains hard gelatine—for example, a chrome mordant dye. This would stain the fully exposed line and partially stain the medium line, but would wash completely out from the soft line. The two subsequent staining operations could be carried out in the manner previously described.

Again, by selecting suitable dyes, the staining operation may commence with a dye which stains only soft gelatine, and may end with one such as a chrome mordant dye that acts only upon the hard gelatine.

It will be understood that the improved colour-screen, like others of the same general type, need not necessarily be in the form of a coating on the plate beneath the emulsion, but may be used as a separate screen.

The claims are:—

1. In the manufacture of a colour-screen the employment of a printing screen composed of lines or other small elements of graduated opacity.

2. In the manufacture of a colour-screen the employment of a printing screen composed of sets of lines or other small elements, one element in each set being black or opaque, one semi-opaque and one clear.

3. A colour-screen made by differentially staining a single sensitised colloid film or coating.

4. A colour-screen made from a single sensitised colloid film by one printing operation followed by differential staining.

5. A colour-screen made by exposing a stained sensitised film or coating beneath a printing screen washing out the dye from the parts not acted upon by the light and then again staining.

6. A colour-screen made by differentially staining a single sensitised colloid film or coating previously exposed to the action of light under a printing screen composed of lines or other small elements of graduated opacity.

7. The process of making a colour-screen for direct colour photography as described. Charles Edward Kenneth Mees and

Wratten and Wainwright, Ltd., 76 and 78, Canterbury Road, Croydon, Surrey.

**COLOURING PHOTOGRAPHS.**—No. 15,249, 1907. The invention relates to a method of colouring photographs or prints on paper or other materials which have not been previously rendered transparent (but, if necessary, impermeable to the medium employed) by the production on their surface of a film of coloured wax, solid paraffin or other transparent substance applied so as not to affect or impregnate the photograph, but to be retained on the surface. This is done as follows:—If the surface of the photograph or print be not already non-absorbent it must be rendered so by being coated with a strong solution of gelatine and squeegeed to a fairly coarse piece of ground glass. It must, if non-absorbent, be also rendered matt, if not already of that surface, by any convenient method.

Various methods of forming the film of coloured wax may be employed, separately or in combination, as follows:—The colouring matter mixed with wax, solid paraffin, or other similar substances, may be dissolved in chloroform, benzine, benzole, ether, turpentine, petrol, spirit, or other volatile or essential oils, and painted on the impermeable photograph or print. Or the wax may be melted and the colouring matter added thereto; or the photograph or print may be coated lightly with wax, the colouring matter applied to it in powder and subsequently fixed by melting; or all these methods may be applied in sequence; or the photograph may be stumped with powdered colour and fixed by spraying a wax solution over it. In any case, it is necessary to fix and blend the hues by subsequently warming the photograph or print on a metal plate or other hot surface and dabbing with a badger or other softener, as in oil painting.

As one example of the process applied to a platinum print the details of working are as follows:—The print is first painted over with a strong solution of pure, hard, white gelatine; then squeegeed on to a piece of fairly coarse ground glass previously wiped over with a little white wax dissolved in benzole. When dry, it strips off with an impermeable matt surface. Then some hard, white wax or solid paraffin is rubbed up in turpentine and the powdered or other transparent colour added till it is strong enough for the general tint of the complexion; say yellow ochre with a little Venetian red or rose madder. When that is nearly or quite dry, which soon occurs if it be placed on a warm metal plate, the shadows are tinted and strengthened with a little light red and blue and the lips and cheeks are touched up with carmine and vermilion; the reflected lights receive a warmer tint, the hair is coloured with any suitable browns or yellows; or, if black, with blue in the lights and blue and lake in the shadows, and the background is painted in. Everywhere, of course, the original colour of the monochrome, in this case preferably sepia-toned, has to be reckoned with and allowed for. Then the whole is allowed to dry and again placed on the warm plate and a badger or other softener is dabbed in the melted hues till all are blended together and any smeary appearance has gone. Finally a little powdered colour, Veronese green in the light shadows, rose madder on the cheeks and lips, etc., where required, is dusted on with a brush and fixed by again melting the wax. The result is a very durable picture which will stand gentle handling, and may be further protected by mastic or other varnish.

The special features of the process consist in its combination of the properties of water, oil, and pastel painting. The dissolved wax and colour can be laid on in broad washes as a water-colour; when dry it can be softened by heat, strong touches added, and then be softened and worked up like a recently laid-in oil painting; or colour in powder may be applied like pastel and fixed by heat, and all this in no way affects the underlying photograph or print, which is quite unaffected, and can be recovered at any time by cleaning off the waxen film with a solvent, when the portrait will be found uninjured if the gelatine protecting film be everywhere, as it should be, impermeable. Moreover, the drawing everywhere shows through the transparent film of wax, etc. This process differs from other processes of colouring photographs or prints in that a coloured waxen film is produced on the front surface of the photograph, which film is matt and yet transparent, and accords well with the untreated portions (e.g., white high-lights) and even allows them to remain unpainted without appearing incongruous.

It is obviously quite apart from all processes which involve conversion of the print or photograph into a transparency and application of oil or other paint to the back of the photograph print or its being mounted, after being made transparent a painted, on opal or other glass as a reflecting surface behind William James Townsend Barker, 304, Wandsworth Bridge Road, Fulham, London, S.W.

**TRIPOD HEADS.**—No. 19,391, 1907. The purpose of the invention is to enable the camera to be turned in one and the same plane in every direction in a horizontal plane, without turning the tripod or loosening the camera simultaneously. The drawings give form of construction of the invention. Fig. 1 is a longitudinal section of the novelty, fig. 2 a partial longitudinal section, fig. 3 a top-view of fig. 2. The head ends in a hollow cylinder threadless externally at the upper end, which is provided with slits. In this cylinder a pin is arranged which is fixed at its lower end to a screw c, which lifts or lowers the pin according to the direction in which it is turned. At its upper end it bears a conical enlargement, which spreads open the cylinder segments when the pin is lowered by means of the turning of the screw and presses

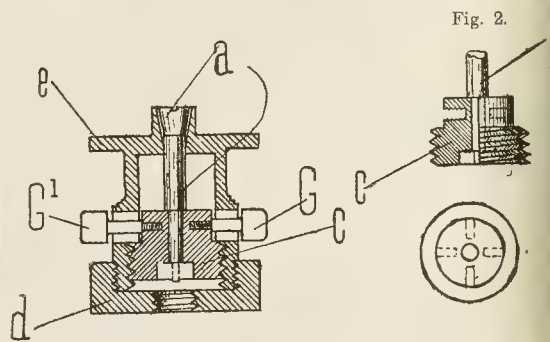


Fig. 1.

Fig. 3.

the cylinder against the wall of the nut with which the camera usually is provided.

In order to fix the camera it must be put on to the cylinder c, screw c is screwed down by means of the protruding handle G and G<sup>1</sup>, whereby the pin a is lowered and the enlargement presses the segments against the walls of the nut on the camera, and in this manner the camera is quickly fastened. By turning the screw the other way the segments spring back to their former position and the camera is released again. It has been found advisable to be able to regulate the position of the pin. The c of the screw is therefore bored at different places in order to receive the arms of the levers G and G<sup>1</sup> whereby the regulation of the necessary lowering is obtained. It has further been found advisable to have the head detachable from the stand. In consequence of the spreading parts, forming part of the head, having a larger diameter than the screw, it is not possible to provide the head itself with such a screw, and therefore the head is provided with a plate d. Gustav Geiger, 16, Maximiliansplatz, Munich, Germany.

**THREE-COLOUR PROJECTION.**—No. 15,726, 1907. The invention relates to systems of two or three-colour photography or projection with one lens, or with two or three, and describes the form and use of "prismoids," which are used as indicated in the two following claims:—

1. An apparatus in which three photographic records, placed one plane, by the aid of three lenses, two prismoids, compensating refracting material and artificial light, are projected in such a manner that the three part pictures will be united into one picture, if colour screens are interposed, the result will be a picture in natural colours.

2. An apparatus in which three photographic records, placed one plane, by the aid of one lens, two prismoids, compensating refracting material and artificial light are projected in such a manner that the three part pictures will be united into one picture, and colour screens are interposed the result will be a picture in natural colours.



WARREN.—No. 303,892. Photographic papers. Geo. Nelson, Dale and Co., Ltd., Emscote Mills, Wharf Street, Warwick, manufacturers of gelatine. June 13, 1908.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Thin Metal Slides and Thick Plates.

SOME other readers (writes a correspondent to "Photography and Focus" for July 28) may have had the same difficulty when using thin metal dark slides that I have met with, and have had the ill-luck to buy a box of plates a shade too thick. Although the makers of the dark slides appear to allow for thick plates, these do not go into the rebate at the top of the slides as easily as thin plates do. This is the case because the spring in the bottom rebate that pushes the plate up to the top, is hardly strong enough when the plate itself is a tight fit, and is pushed by the spring behind.

I have overcome this little trouble thus:—Part of a strip of black paper, such as that used with roll films, from half to three-quarters of an inch wide, and about four inches long, is placed under the plate at the bottom end before pressing the plate on to the spring, a piece of the black paper, about two inches long, being left out. This may be used as a handle to assist the bottom spring to lift the edge of the plate into the top rebate. The paper strip can be drawn out quite easily when the plate is in position.

### Sympathetic Treatment in Portraiture.

Sometimes one sitter will afford varying opportunities (writes Mr. A. F. Hirschfeld in "The Amateur Photographer and Photographic News" for July 28), for many varying effects of lighting and posing. Taking only one of the factors into account, there are many experiments that may be made in unconventional and unusual methods of lighting. Even in an ordinary room and with no special appliances there is great scope for this sort of thing. From among this great variety of methods it is most important to choose always those that are suitable for the type of sitter and in harmony with that sitter's characteristics.

Broadly speaking, there are to be considered, first of all, the characteristics of sex.

A lady's portrait, for instance, usually calls for delicate treatment: a light background, soft lighting, with no heavy shadows, and final printing on a smooth paper; whereas a dark background and a stronger, more dramatic scheme of lighting would be quite appropriate for a strong masculine face.

The aim in lighting and posing should be to emphasise special characteristics of the sitter, so that for ordinary sitters with no striking characteristics ordinary lighting is most suitable.

It does not necessarily follow that a sitter for whom an unusual method of treatment is suitable can be treated only in an unconventional way; ordinary lightings and simple poses can, of course, be adopted with these sitters, but the unconventional and unusual should be avoided with such sitters as are obviously unsuited for such methods of treatment.

Those who always bear in mind the importance of sympathetic treatment throughout the whole of the operation will find it of incalculable benefit, whatever branch of photographic work they may be engaged in. It is so easy to spoil the effect of an otherwise successful photograph by some slight mistake that might easily have been avoided.

## New Books.

"The Study of Stellar Evolution." By George Ellery Hale. London: W. Wesley and Son. Chicago: University of Chicago Press. 10s. 6d.

This handsome volume explains in a popular way how the life histories of the sun and stars are investigated. A brief historical sketch, in which the general purposes and methods of astrophysical research are outlined, is followed by several chapters on the sun, the only star that is near enough the earth to be studied in detail. An account of the spectroheliograph, which gives pictures of the sun, showing the "flocculi"—invisible clouds of calcium or iron vapour, or of hydrogen gas—introduces a series of chapters describing recent

methods of solar and stellar research developed at the Yerkes Mount Wilson observatories. A description of the organisation and construction of these observatories, one of them following conventional lines, the other representing many departures from tradition, serve to acquaint the reader with some of the practical problems encountered in astrophysical research. A study of sun-spots, showing how some of their phenomena may be imitated in the laboratory, and explaining their relationship to red stars, leads to the general question of stellar development. Succeeding chapters contain Laplace's original account of the nebular hypothesis, accompanied by the critical observations which have led to its downfall, and outlines of meteoritic and planetary hypotheses of Lockyer and Chamberlain. These serve to illustrate current speculations as to stellar origins, and indicate the nature of the observations required to test them. The most powerful telescope that will be available for this purpose in the near future is a sixty-inch reflector of the Mount Wilson Observatory. Most of the optical and mechanical work on this instrument has been done at the observatory instrument shop in Pasadena. An explanation is given of the processes employed in grinding, polishing, and figuring a great mirror, as these seem to be of special interest to observatory visitors. The book concludes with a discussion of the possibilities of new instruments and a chapter on the important work that can be done by amateurs with simple and inexpensive apparatus. One hundred and four half-tone plates, made from the best astronomical negatives, place before the reader the most recent results of celestial photography in most of its phases.

PRACTICAL TELEPHOTOGRAPHY—No. 90 of the Photo-Minia (Dawbarn and Ward, 6d.), deals with the later developments of telephoto lens, in practical telephotography for both technical and pictorial purposes. The text plainly conveys the arithmetic of the subject, has many hints on necessary precautions, and includes a number of first-rate examples of telephoto work.

## New Materials, &c.

"CRITERION" COURT SIZE POSTCARDS.—The Birmingham Photographic Co., Ltd., Stechford, send us samples of P.O.P., bronzed and gaslight postcards, which they supply of the statutory size in all varieties of these deservedly popular printing paper. The company also reminds us that the quarter and half-plate size of any of their printing papers can be supplied of postcard thickness thus giving Criterion users the facility of preparing photographs of a kind which require no mounting.

NEW "TABLOID" PHOTOGRAPHIC OUTFIT.—The marked success which has attended the issue of the "Tabloid" Photographic Outfit has led to the introduction of a further range. The new outfit includes the same quantity and selection of chemicals as the original case, but in slightly smaller space. The cases are prepared in red, royal blue, and bright scarlet enamelled metal. Their special attractive appearance is a useful selling feature, as they materially brighten up a window display and impel attention. Chemists and photographic dealers who wish to secure success should place their orders at once. The standard contents are: One regular package each of "Tabloid" Metol-Quinol Developer, "Tabloid" Pyro Developer, "Tabloid" Combined Toner and Fixer, "Tabloid" Hypo, "Tabloid" Potassium Bromide.

THE WALTHAMSTOW PHOTOGRAPHIC SOCIETY have enlisted the operation of the Urban District Council in an exhibition of photography to be given early next year, and the Library Committee have been instructed to make the necessary arrangements.

M. HENRI QUENTIN, editor of our Paris contemporary, "Photographie des Couleurs," will have the sympathy of many who have been helped by his courtesy and kindness, in the death of his infant son on the 24th inst.



## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

SATURDAY, AUGUST 1.

London Photo Art Club. Excursion to Stonehaven.  
Ed Stereoscopic Society. "Outdoor Night Photography." S. W. Shore.  
h Suburban Photographic Society. Excursion to Gravesend and Cobham.  
W. C. Chaffey.

SUNDAY, AUGUST 2.

Ed Stereoscopic Society. Excursion to Burnham Beeches and Surroundings

MONDAY, AUGUST 3.

h Middlesex Photographic Society. Outing to Ware.

WEDNESDAY, AUGUST 5.

h Middlesex Photographic Society. Lantern Slide Competition.

LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.—Country  
ers who are visiting town are reminded that the weekly meetings  
the L. and P. go on all the year round, and visitors are always  
comed at the meeting house, the Apple Tree and Mitre, Cursor  
et, just off Chancery Lane, on Thursday evenings at eight  
ock. During the summer months, instead of a formal programme  
evening is devoted to any point that may have caused trouble to  
ember or visitor and there is no lack of subjects for discussion.  
or instance, on the 16th inst., in the course of debate, Mr.  
shwater said that he had found, with regard to old prints, that  
se which had been toned to a brown colour kept well, much better  
n those carried further to a purple. Mr. Haddon said that the  
sence of two metals meant an electrolytic action, and that if you  
irely remove the silver you get an image in gold, such an image,  
fact, as that obtained when the silver image has faded to the  
urless salt. Mr. Greenwood asked for a remedy when the print  
ks to the negative. Mr. Rapsun suggested soaking plate and  
er in hypo, and then removing the print, and if any stain showed  
lf to remove it with cyanide of potassium. It was thought  
ever, that such a course would remove the image as well, and t  
it would be better to soak the paper off in water and then fix  
negative.

s to dark-room lamps, a member asked if acetylene lamps could  
used instead of paraffin, as with the former he could get more  
t. It was, however, pointed out that the quantity of light  
the dark-room must always be subservient to safety. Mr.  
ldon thought that the chief objection to paraffin lamps was  
to the insufficient ventilation at the top of the lamp, and that  
could be remedied by a longer chimney, thus creating better  
ght.

was remarked that people sought for a fabric which was safe  
he largest light behind it, instead of a fabric which would allow  
to see well with a small light.

simple question as to the origin of the word "Ozobrome" by  
Dawson raised a most interesting discussion, which was not  
shed at closing time. Ozobrome owes its name to the idea that  
action on the pigmented paper was due to ozone, and although,  
was explained, this idea was quite erroneous, the name has been  
ined. Several members present had had much to do with the  
ufacture of ozone, and clearly showed that although it was of  
t service in chemical manufactures, it should only be handled  
those with perfect knowledge of its dangerous properties.

## Commercial & Legal Intelligence.

LEGAL NOTICES.—A first and final dividend of 10s. in the £ is  
be paid on July 31 at the Official Receiver's office, Great  
msby, in the bankrupt estate of Charles George Sinclair, photo-  
ther, of 264, Victoria Street, Great Grimsby. The receiving  
r was made in 1891.

the trustee has been released in the matter of John Edward  
es, photographer, of 48 and 50, Hermit Road, Canning Town,  
don, against whom a receiving order was made in 1906.

The Exeter Official Receiver has been released from the trustee-  
ship in the bankruptcy of William John Wilkinson, photographer  
and picture-frame maker, of 101, Union Street, Torquay, Devon-  
shire. The receiving order was made in January, 1907.

A first and final dividend of 3s. 6d. in the £ is to be paid in the  
bankrupt estate of Alfred Ernest Edward Clay Poole, photographer,  
of 9, The Crescent, and Midland Studio, Northumberland Street,  
Morecambe, Lancs.

The trustee has been released in the bankrupt estate of Harry  
Chapman Whiteley, 17, Quay Street, Huddersfield, and Ernest  
Crossley, 127, Leeds Road North, Huddersfield, trading in partner-  
ship at Leeds Road North as the Novelty Animated Picture Com-  
pany, cinematograph and lantern entertainers.

A CAPTAIN'S BANKRUPTCY.—At the final examination of Captain  
P. B. Hope, whose affairs have already been reported in the "B.J.,"  
the Registrar of the Bankruptcy Court granted a discharge,  
suspended for the minimum period of two years.

## News and Notes.

PROFESSOR RAPHAEL MELDOLA, F.R.S., has been elected President  
of the Society of Chemical Industry in succession to Sir Boverton  
Redwood.

L.C.C. AND PHOTOGRAPHY.—Some time ago the London County  
Council decided that, as an experiment for one year, the Council's  
photographic work should be done in the chemical and gas-testing  
department. The attention of the Local Government, Records, and  
Museums Committee has now been drawn to the fact that it will  
be necessary to make fresh arrangements to obtain copies of photo-  
graphs for purposes of record. Under the arrangement by which  
all photographs required were taken by a firm of photographers, it  
was considered necessary for a copy, in addition to those required  
for the purpose of the service affected, to be printed for the use  
of the chemist so that he might be in a position to certify as to  
the quality of the photograph. This copy was subsequently placed  
in the Council's library for purposes of record. Under the new  
arrangement, no special copy is necessary for certification purposes,  
and consequently the library collection of photographs is incomplete.  
The Committee is of opinion that, for purposes of reference, it is  
desirable that there should be a set of the more interesting and  
useful photographs ordered by the Council. During the last two  
years the number of photographs ordered by the Council has  
averaged 850 a year. The Committee has resolved that photographs  
be provided for purposes of record at an estimated cost of £65  
a year.

"URBANORA" AT THE PALACE THEATRE.—Monday next will wit-  
ness the advent at the Palace Theatre of the "Urbanora" ani-  
mated pictures, and Mr. Charles Urban may safely be relied upon  
to see that the exhibit well befits the importance of the occasion.  
His six new subjects—none of which has yet been seen by the  
public—will, primarily, include the latest scenes of the two great  
sporting events of the moment, Goodwood and Henley of 1908.  
Two important "travel" series will be "From Quebec to Niagara,"  
via St. Lawrence and the Thousand Islands, and "A Run on the  
Rhodesian Railway," from Untali to Beira, traversing the famed  
Amatonga Forest and encountering ground game of all descrip-  
tions, including elands, wild goats, cattle, baboons, etc. Another  
remarkable and an exclusively Urban subject, and one which will  
delight students of ornithology, will be the set of pictures illus-  
trating the "Haunts and Habits of Wild Birds." Specially taken  
by the famous naturalists, Messrs. Richard and Cherry Kearton,  
these films will furnish the spectator in ten minutes with optical  
information based upon the assiduous watching and waiting of  
many months.

MANCHESTER MUNICIPAL SCHOOL OF TECHNOLOGY.—At the examina-  
tions held by the City and Guilds of London Institute in technol-  
ogical subjects, the students at the Manchester Municipal Technical  
School secured thirty-one special awards in the shape of twenty  
bronze and eleven silver medals, together with money prizes to the  
value of £55 10s. Among these the following were by students  
in the Photography and Printing Crafts Department directed by

Mr. Charles W. Gamble:—Stelfox, Herbert Clifford: Photography (photo-mechanical processes), 2nd ordinary, £1 (Salters'), and bronze medal; Hallam, Edwin Walter: Bookbinding (forwarding), 1st honours, £2 (Skinners'), and silver medal; Bailey, Tom: Typography (press and machine work), 1st ordinary, £2 and bronze medal; Hanley, John Wm.: Lithography, 2nd ordinary, £1 (Cordwainers'), and bronze medal.

## Correspondence.

- \**Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*
- \**We do not undertake responsibility for the opinions expressed by our correspondents.*

### THE FRAUDULENT SUBSTITUTION OF BROMIDES FOR PLATINOTYPES.

To the Editors.

Gentlemen,—In your issue of July 3 a correspondent signing himself "A Dabbler in Photography" states that he paid for platino-type photographs and received bromides instead. We shall be pleased in the interests of the public, in any similar case, where any one has been so defrauded, to employ counsel and pay all the costs of the prosecution, provided that we are satisfied with the evidence that a fraud has been attempted. Many unscrupulous photographers are guilty of this mean and contemptible imposture, to the injury of those who are doing an honest business, and we mean to protect our customers against such unfair and dishonest competition.—Yours truly,

THE PLATINOTYPE CO.

(E. J. Humphrey.)

22, Bloomsbury Street, New Oxford Street.  
London, W. C., July 25, 1908.

### WHEREIN ANASTIGMAT EXCELS R.R.

To the Editors.

Gentlemen,—In your current issue is a capital article on "Some Photographic Fallacies," by Mr. A. Lockett, in which he speaks of "much hazy inexactness of statement" has been made about the anastigmat lens. Now, while I am quite willing to believe that this form of lens is the crowning triumph of the optician, and that it will do better than the rectilinear, I should be personally obliged by being told in plain words, free from technicalities, what are the many reserve qualities and advantages possessed by the anastigmat to which the rectilinear cannot lay claim? I am about buying a new lens, and I do not mind the few extra pounds the new form will cost if I can understand exactly in what way my work is to benefit thereby, but, being an uneducated man, I cannot grip the science of optics in its most elemental form.—I remain, yours truly,

JAMES THOMPSON.

Chippenhams, July 25, 1908.

[The three chief respects in which the anastigmat lens is superior to the old type of rapid rectilinear are: (1) Larger working aperture; (2) greater covering power; and (3) finer definition. The first means the full exposure of plates which otherwise would be underexposed; the second means that a lens of focal length suitable for, say, half-plate, will cover a whole or larger plate, or will permit of great rise of front when a half-plate is being used. The third property means that negatives will give sharper enlargements.—Eds., "B.J."]

### UNFRAMED PRINTS FOR EXHIBITIONS.

To the Editors.

Gentlemen,—May I explain that in my suggestion re unframed prints for exhibitions I did not suggest, neither do I require, that secretaries should frame exhibits, but that exhibits *unframed* should be admissible, and *shown as such*.

May I point out that the Arts and Crafts, Plymouth, this year, is accepting unframed prints for competition and exhibition.

If suitably mounted on card with wide margins, prints should show to as good advantage as those framed.—Faithfully yours,  
St. Ives, Cornwall, July 25, 1908.

SYDNEY H. CARR.

## Answers to Correspondents

- \**All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.*
- \**Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.*
- \**Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & CO., 24, Wellington Street, Strand, London, W.C.*
- \**For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street Strand, will undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, and two unmounted copies of each photograph must be sent with the photograph.*

### PHOTOGRAPHS REGISTERED:—

Mrs. Helena C. Sutherland, Cooleville, Clogheen, Cahir, Co. Tipperary. Photograph of Two Kittens. Photograph of Lion Cub.  
David Jones Davies, The Studio, Lampeter. Photograph of H.R.H. Prince Christian, Earl of Caerlaver, and Sir James Drummond, Bart.  
Albert Edward Stanley, 70, Stackpool Road, Bristol. Photograph of Suspension Bridge, Bristol.

AMERICAN LANTERN SLIDES.—I should be much obliged if you would give me the size of American lantern slides, and let me know if there is anything special in the fitting up and binding different from English slides.—SLIDES.

The most usual American size is 4 by 3½, though some make use the English quarter-plate—4½ by 3½. The size of picture about the same in each case. The Americans allow more room on the mask for inscription, etc.

OIL PROCESS.—I believe there is some method of producing paintings in colours (not one colour only). Is this the "process" which I see frequently mentioned in the "B.J.," or do you let me know the process or where to obtain same?—SUBSCRIBER.

There are, of course, the usual hand methods of working photograph in oil colours. The oil process, though just as a hand process, is not at all similar. It consists in forming almost invisible image, either by printing on a bichromated fine sheet or bleaching a bromide print or enlargement in a particular way (the bromoil process). The print in either case is brought out by applying a greasy pigment with a brush. The process is employed for pictorial purposes in monochrome. Colour effects so far produced have not been successful.

PICTORIAL PRESS, LEEDS.—If you will send your name and address for publication, we will answer your queries.

ELECTRIC LIGHT IN STUDIO.—Will you kindly let us know the following in "Answers to Correspondents" column of "B.J.": oblige! 1. What power of electric light is sufficient in studio with rapid portrait lens and rapid plates, and if equally as results can be got with ordinary lamps as with the electric? 2. Is it best to have lamps on a movable stand, the lamps hanging a foot or two from the floor upwards each side of subject? 3. Would wooden frame with white calico on answer as reflection if placed behind lamps?—SCOTT AND CO.

1. One or two enclosed arc lamps are usually sufficient. Most photographers do good work with only one. 2. Certainly. The usual plan is to mount the lamp on a stand, which can be moved about and on which the lamp can be easily raised and lowered. 3. Yes.

STUDIO CONSTRUCTION.—Can you refer me to any good book or publication upon modern methods in the planning and arrangement of studios?—A NEW READER.

The best book is "The Studio and Its Construction," by B. published by Marion and Co., 22-23, Soho Square, London, W. 1. We may also refer you to the series of articles on "Modern Note in the Design and Fitting of Photographic Premises."



Mr. Drinkwater Butt, which commenced in our issue of 27 last.

**PULP-BOARD.**—I am in possession of a large pulp-slab for which the surface of which has become white and greasy in appearance. I shall be glad if you can inform me the cause of this and how it may be removed, as it, of course, prevents the use of bromide paper obtaining the necessary high polish.—O.

It is clear from your description that the high polish the slab actually possessed has worn away by use. We cannot tell you how to improve the one you have. Possibly if you sent it to the makers they might repolish it, but that, with the carriage, etc., would probably come to nearly as much as a new slab.

**QUERIES.**—1. Is the lens on a "fixed focus" camera different from the one on a focussing instrument? 2. If the pointer on a focusing camera is set at "infinity" (also marked "25ft."), can I take sitters at 12ft. from the camera? 3. How is it that I can do so with a "fixed focus" instrument? 4. Would a negative taken at 12ft. by either camera yield enlargements suitable for the Illustrated Press? 5. How do pressmen know when moving stationary objects are in focus with such pocket cameras as "Palmos" or the "Goerz-Anschutz," which have only a frame finder, that remains the same irrespective of distance, or stop? 6. Where can I purchase the "Artists'" camera, described in the "B.J.," June 28, 1907?—ADVANCED AMATEUR.

The lens itself is not different; the difference lies in the focal length (short) and aperture (medium). 2. The images will not be as sharp as they should be. 3. Because the lens is fitted with a smaller stop. If you look at the table on page 10 of the "Almanac" you will see that in the case of a 5in. lens at  $f/8$ , the distance at and beyond which all objects are in sharp focus is secured on infinity is 26ft. With the stop, which is a common aperture for fixed-focus cameras, the distance is 13ft. 3. It depends on the degree of sharpness. You can tell whether the negative is sharp, or you can try experiment of making or purchasing an enlargement from the negative. 4. They have learnt to judge distances accurately and with the focussing scale set accordingly to, say, 12ft., 15ft., or 20ft. We advise you to study two books by Mr. Walter R. L. "Hand-Camera Photography" and "Advanced Hand-Camera Work"—both published by Messrs. Dawbarn and Ward each. 6. It is not on the market.

Most probably the negatives were not perfectly fixed. We cannot suggest any quite certain remedy, but you might try washing in potassium bichromate and hydrochloric acid (10 grs. bichromate and 20 minims acid to the ounce), and then wash well, by soaking in water acidulated with hydrochloric acid and in plain water. After washing, redevelop the films. It is fortunate that you used ammonia after the mercury, as this has doubt removed a good deal of the silver and so rendered retouching impossible.

**ROBERT.**—The only suggestion we can make is that you try Gertha dyes (Vanguard Co.). These are specially intended for staining gelatine, and can be obtained in a variety of colours. We will find no difficulty in using them.

**OWN LENSES.**—I have two lenses in good condition, with stops of different diameters. The one is marked "J. H. Dallmeyer, London, 1875"; the other, "Ross, London, 13725." Would you please tell me what lenses they are, and the value of same?—H. CASTELLO cannot possibly say what your lenses are from the numbers. The makers could do so, no doubt. Any lens by either maker will, however, always command a fair price. We should advise you to submit them to the makers and obtain full and reliable information.

**P.**—1. Messrs. Butcher and Sons, Camera House, St. Bride Street, E.C., supply a very similar, if not identical, paper. 2. The slip should be the actual size of a boat in order to be in line naturally with the figure, but as this would involve too great a breadth of the picture it is better to make a slip, say, 6ft. long. The question of the lens does not come in.

**ROBERTS.**—You are right in your views, but it is usual to have an assignment of the copyright in writing from the

sitter under such circumstances. However, the point, apart from this, is a very doubtful one, as to whether a sitter can exert any legal right in respect to the negatives. See the article on a similar case in our issue of June 5.

**JAN.**—As he was working entirely on commission we do not see that you can do anything, unless there was a written agreement to some such effect that he should engage in no other photographic business except that for you.

**SHOP FRONTS.**—I shall be glad of your assistance in a matter which has just cropped up in connection with an order I have received from a local firm to take photographs of three shops which they own in different parts of the town. The result of my first attempt has been that the shops across the way are almost as prominent in the negative as the place I wished to photograph. Is there any way of getting over this? It seems useless to try and retouch out the details of the opposite windows, as they are almost as strong as the others.—MINOR PRO.

The only effective way of dealing with the job is to erect a dark screen immediately behind the camera. It must be large enough to obstruct the view from the opposite buildings. If you cannot arrange for this to be done, either by erecting a special screen or by getting a tall van to halt in the required position, then the next best thing is to take the photograph by flashlight, screening the lamps so that no light from them is cast upon the opposite side of the street. We suppose that in making your attempt in daylight you have done all that was possible in choosing a time of day when the shop to be photographed was brightly lighted and the opposite houses in shadow.

**STUDIO QUERY.**—In some new premises which I am thinking of taking I can have a studio 6ft. by 19ft. of the single-slant pattern. The highest side is 11ft. and the lower 8ft. 6in.—that is the side-light is this amount. Do you think the studio is one in which I can really do satisfactory work in the way of portraits and small groups? What is the best arrangement of blinds, and what colour would you advise for the walls? You will see from the rough sketch herewith that I get practically a north light.—LANCS. AND YORKS.

The studio is certainly very narrow, but, with this exception, it should do well for all moderate size work. We should advise you to use top blinds on rollers and side curtains, as marked on the sketch, returned. A pale green or blue for both of these would answer well.

**"WHILE-YOU-WAIT" PORTRAITS.**—A firm has started here in premises which they have taken only for a week or two, and is running a business of the cheapest class, in which they sell a postcard of the sitter for sixpence, giving the card within a very short time—fifteen or twenty minutes. I suppose that this is done by printing from the wet negative, and as some of my customers who have spoken to me about it have doubted the possibility of doing this, I would be glad of your opinion as to it.—S. F. AND CO.

It is possible that the people are working from the wet negative, but in that case they have to give the negative, at any rate, some degree of washing. It is more likely they are using the dodge which has been published in our columns several times recently—viz., the use of a piece of thin celluloid, which is laid on the fixed negative after only a rinse of the latter from the hypo bath. The printing paper is then laid on the celluloid and the portrait printed off without any noticeable loss of sharpness, the thickness of the celluloid being so trifling.

**C. F. E.**—You need a lens of aperture at least  $f/4.5$ . You should consult the advertisements of lens makers in the current "Almanac."

**HYPH ELIMINATOR.**—Can you give me a simple formula for a solution which I can use for getting rid of hyph quickly from plates or prints? I have been running for some time past a cheap postcard line on the "while-you-wait" system. Though I can say that the complaints as to fading have been few, I would like to know if there is any rapid and cheap means of killing the hyph instead of washing out.—SIDE-STREET STUDIO.

Potassium permanganate, used with care, is as good an eliminator as you can adopt. You require a rather weak stock solution—say,  $\frac{1}{4}$  oz. of potass. permanganate in  $1\frac{1}{2}$  gallons of water. This solution is added to about twenty times its volume of water

(i.e., 1 oz. to 20 oz.), and the plate or print, which should first be rinsed for one minute under the tap, placed in it until the colour goes. The decolorised solution is then replaced by fresh (pink) solution, which is again replaced by fresh as long as the colour is discharged within, say, half a minute of pouring on. The whole process only lasts a minute or two.

**DEVELOPER FOR BROMIDE PAPER.**—We have been having trouble in getting a really strong good tone in bromide prints of late, and having been told that the best results are obtained with amidol, we should be glad to learn whether you think that is the case, and, if so, what formula for the amidol developer you would advise.—M. AND M.

We should hardly say that amidol is superior to any other developer, but it is certainly one of the best, particularly for black tones. The following is a proper formula:—

Amidol .....	50 grs.
Sodium sulphite .....	500 grs.
Potassium bromide.....	2 grs.
Water .....	20 oz.

The important point is to prepare the above fresh at the time of use. A stock solution of sulphite may be kept for a day or two, and used as required by addition of the amidol dry, but the finest results are produced by making up the whole developer fresh.

**MATT SEPIA PRINTS.**—A customer has shown me a number of prints of matt surface, not unlike toned bromides, which he says are made by a special process of his own, which is not, he says, a gelatine process. I suppose they must be sepia-toned bromides, but I should like to ask whether there is any such process at all answering to this description?—CHELTENHAM.

It is probable that the prints are by the Kallitype process, particulars of which you will find in the current "Almanac," pages 664 and 832. The process consists in the preparation of paper with a mixture of iron salts and silver nitrate, the partly printed-out image being developed with a mixed solution of borax and Rochelle salt. There is no secret about the process.

**OZOEASY.**—P.O.P. prints can be used, but a bromide is preferable.

**SANSAPARILL.**—We know of no process so suitable. If you will follow the instructions you cannot make a mistake.

**IWANDOTTE.**—What you want is a hot rolling press, supplied by any of the large dealers.

**F/11.**—The advantage of the lens, for its particular purpose, is that the definition is not critical.

**BLISTERS ON BROMIDE.**—Since coming here to take over a small business, I have had great trouble with bromide and gaslight prints as regards blisters, which in twelve years' previous use of these same papers I have never once experienced. I am told by a traveller of the paper firm that this is no fault of the paper, but is due to the softness of the water supply. Do you think this is likely to be the case, as, if so, I suppose the only remedy is to add some chemical to the washing waters to counteract the softening effect? I should like to know if this can be done.—BUBBLE.

Your experience is common among photographers who have to use a very soft supply of water. It is not always very marked when prints are quickly developed, fixed, and washed, but usually makes itself evident in sepia toning by the sulphide process. The remedy is to fix prints in an acid hardening bath. A formula is—

Water .....	64 oz.
Hypo .....	16 oz.
Soda sulphite .....	1 oz.

When dissolved, add—

Acetic acid, glacial .....	1½ oz.
Potash alum (dissolved in 5 oz. of water)...	1 oz.

This mixture should be only very slightly cloudy. In it prints feel leathery to the touch in about half a minute, but the bath should not be kept in use so long as to leave a print still soft one minute after immersion.

**INFRINGER.**—Like many another before you, you have been labouring under a delusion; you have no rights whatever in the photograph. You were paid in the first instance by the sitter, and all rights as to the reproduction of the photograph are vested in

him. The best thing you can do is to indite an apology for your offensive letter.

**WEST COUNTRY.**—1. Certainly not, in no circumstances. 2. make inquiries, but we never heard of anything of the kind.

**CAPE TOWNER.**—The firm has ceased to exist.

**LIGHT BANDS ON NEGATIVES.**—Can you explain the cause of one-third of every negative in a batch of about twelve lighter than the remainder? I enclose one of the negatives would say that all have a similar light band of the same and running the same way of the plate. All negatives treated as usual, and were first found to be as described or out of the washing tank.—L. M. S.

We think the only explanation is that the negatives were out of the fixing bath, and without rinsing placed in the tank, only partly covered by the water. The hypo in the exposure to the air will produce reduction, such as seen in negative you send.

**M. R. P. S.**—The Royal Photographic Society does not sanction the use of any such title.

**POSTCARD.**—The hand-fed machines, such as the Hana (Hofmann Ltd.), are decidedly the best.

**RETOUCHING.**—As our circular explained, it is useless to express opinion on retouching, except with prints taken from the negative before and after. If you seek an opinion of your work, you should be willing to take this very simple means to end being of value.

**FOCUSSED SCREEN.**—Requiring a ground glass screen of a degree of fineness, I have been trying (without success) to prepare or make one. The former I have failed in doing, and the latter of a large (10 by 8) screen I find a very tedious affair, the result also is not as fine as I should like. I came across a reference recently to a chemical method of preparing screens, should be much obliged for some directions as to the value of the process.—MICRO-RHOM.

The instructions appeared originally in the "B.J.P." March 30, 1906, and are briefly as follows: Three dry (extra-rapid) are immersed without any exposure to light in non-staining developer without bromide. Two are removed at the end of five minutes, fixed and washed in the usual way. The third is kept in the developer for twenty minutes, and the fourth is treated. No. 3 and No. 1 are then placed in a solution containing iodine 10 grs., dissolved in water, 10 grs.; potassium 100 grs. They are rinsed and bleached in weak ammonia, and dried. Plate No. 2 is immersed in a solution of bichromate, 10 grs.; hydrochloric acid, 5 grs.; water, rinsed, fixed for ten minutes, well washed, and dried. It forms a fairly dense iodide screen. No. 3 is a thin iodide and No. 2 a thin "chromium" screen. All are of value in grain.

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Chapman Jones has been appointed lecturer on photography in the Imperial College of Science and Technology. (P. 597.)  
Attention is drawn to the examinations in photography and photochemical work held annually by the City and Guilds of London Institute. The questions and practical exercises set at the last examination are given on page 605.

Lumière and Seyewetz have published an account of lengthy experiments on the precipitation and insolubilisation of gelatine. They show that many mineral and organic substances exert quite different actions on gelatine. (P. 602.)

J. Peat Millar gives a hint on the making of gaslight prints in the glass of the negative, and on the production of a border of gaslight or bromide print itself. (P. 601.)

Professor Namias recommends an acid solution of common salt or sodium chloride for treating over-printed P.O.P. prints. (P. 600.)  
Experiments which may be used by a photographer pressed for time when printing in P.O.P. are the subject of some notes on page 599.

A paper for the direct production in the camera of a portrait has been worked out by an American inventor. (P. 598.)  
A new method of colour photography suggested some nine years ago and revived in a current patent specification. (Pp. 598 and 607.)  
An American contemporary publishes a description of the method used by the well-known New York professional, W. M. Holman. (P. 604.)

Blackpool magistrates have warned travelling photographers that they must take out a licence under the Pedlars' Act. (P. 598.)

### "COLOUR PHOTOGRAPHY" SUPPLEMENT.

A full official description of the method of manufacture of the gular grain Lumière screen-plate is given on page 57.

Impel, in a recent paper before the French Photographic Congress, recommends the ingenious device of employing a phonograph in the dark-room to "talk" seconds whilst the Autochrome being carefully watched during development on the factor (P. 61.)

Each worker, M. Torchon, advises the sulphide toning of Autochrome plates after reversal in plate of re-development and fixation. (P. 60.)

A recent paper before the Royal Photographic Society, Dr. Kenneth Mees gave the arrangements of screens, reflectors, and lenses considered most advisable when constructing a one-colour camera for three-colour work. (P. 58.)

## EX CATHEDRA.

### Photography in the Imperial College of Science.

Although it has been known for a long time past that instruction in photography was to figure in the science and technology courses at the Imperial College of Science and Technology, that the necessary accommodation was under consideration, and that arrangements had been made as to the charge of the department, it is only quite recently that the official appointment of Mr. Chapman Jones as lecturer on photography in the Imperial College has been made. The department has, in fact, been undertaking its duties for some time past waiting the formal decision of the Governing Body. At present exigencies of space compel the department to almost limit itself to its primary object of giving such instruction to science students in the principles and practice of photography as shall enable them to make efficient use of photographic methods in their own callings. It is intended, however, that as further facilities are available the study of special branches of photography will be made possible, and that students will have the opportunity of carrying out research work in the department. At present, however, the size and equipment of the department are not much in excess of what is necessary for the instruction of the general student; in fact, for that purpose alone both might well be expanded.

\* \* \*

### Collections of Photographic Specimens.

One of the duties which the new photographic department of the Imperial College of Science and Technology is setting before itself is the assembling of specimens illustrating departures in photographic processes and certain methods of work. A considerable nucleus of such a collection has been already formed by Mr. Chapman Jones, but the willingness of the department to receive, as a gift or a loan, exhibits which are of educative value may well be brought before the notice of those whose possession of such objects is frequently a matter of little advantage to themselves and none at all to anybody else. Although not a public institution in the way that the British Museum is, the department is so situated that objects forming part of a collection such as this might be seen by any one who has any good reason for wishing to do so, and a loan or donation is thus of service even to a greater number than the students who will pass through the department.

\* \* \*

### The Work of Mr. G. R. Ballance.

It is good news to hear, in the "Photo Era," that Mr. G. R. Ballance, whose delightful photographs of Switzerland are familiar to most visitors, is this summer touring in the Tyrol and Black Forest with the object of producing

photographic souvenirs of these picturesque districts. Mr. Ballance started photography twelve years ago, when seeking a recovery of his health in outdoor pursuits, has pinned his faith to slow isochromatic plates and platinotype paper, and has made his work known throughout Europe. It is interesting to find that his photographic religion is a faith in the pure, "unfaked" photograph which is a faithful transcript of a beautiful scene before the camera. He writes:—"The modern, retouched, double printed, faked fuzzy-wuzzotypes seem to me like nothing in nature; and surely nature is beautiful enough without attempting any such doubtful improvements. I never exhibit, not valuing the opinion of judges who have never seen the subjects depicted, and who are, therefore, not in a position to say whether the lighting, tone, and subject are consistent. Recent much-admired photographs of Venice in a London fog, with steeples out of focus and English clouds printed in upside down, seem false to me, bad art, and a libel on Venice as I know it. It greatly amused me to send in to the London Salon a study of olive-trees printed through the back of glossy sepia platinum paper, producing a blotchy image of a dark, dirty, yellow, mud colour, the whole picture having not the slightest resemblance to anything on earth except, perhaps, broken firewood as might be seen through a jar of Thames water by a drunken man suffering from jaundice. The picture was, of course, accepted, and my only hope is that no one took it for a serious attempt on my part at depicting the beauties of an Italian olive grove, with the slate-gray, gnarled old trunks and the shimmery sunshine on the light foliage."

#### Positive Prints Direct in the Camera.

A specimen of a new process for producing a paper print by exposure in the camera has been sent to us by Mr. Chas. Dawson, of Holloway Hill, Godalming. It is the invention of a Mr. Pifer, of Cleveland, U.S.A., for whom Mr. Dawson, so he informs us, is acting in the matter of the disposal of the patents. We have no information as to whether the process involves the reversal of the primary negative image by some such process as is employed in the case of the Autochrome plate, or whether a direct reversal is produced in development. At any rate, the result which we have seen is an excellent print, closely resembling a collodio-chloride print, toned with platinum, and altogether too good for the "portrait-while-you-wait" class of work, for which such a process seems more suited than anything else, except perhaps certain special Press work, in which one print would suffice.

#### A "System" of Colour Photography.

The desirability of search by the Examiners beyond the limits of prior specifications is well instanced by a patent which figures in the "Patent News" on another page. There, it will be seen, protection is given to a process which, so far as taking the negative is concerned, is identical with one recommended, though not patented, so far as we are aware, by Mr. Friese-Greene in the year 1899. The idea, which was hailed by Mr. Hector Maclean but by no one else as a promising method, consisted in the rotation before the lens of the camera of a disc divided into three transparent sectors—red, green, and blue. This disc was rotated at the time of making the negative, and again before the lens of the lantern by which a transparency from the negative was projected. On the screen the result showed a certain dull red coloration of the shadows, due, it seemed, to the fact that the lights of the picture were white because illuminated by all three sectors, whilst the shadows assumed a red tint because protected from the blue and green rays and illuminated by red rays dispersed from the sector of that colour. That the present patentee should expect to make colour-prints from the

positive which he obtains in the way above described amazes us more than the original proposition.

#### Itinerant Photographers and the Pedlars Act.

We have once or twice heard of the interference on the part of the police with the photographers who get their business by house-to-house canvassing, ground that such trade comes within the Pedlars' Act. We must not be carried on except by those possessing a licence. While we should not identify one who obtains orders afterwards delivers his photographs in this house-to-house manner with the pedlar and his bundle of miscellaneous wares, we applaud rather than otherwise the action of the police, since it puts a check on the cadging methods of the itinerant photographic fraternity, of whose doings we constantly hear too much. Therefore we cannot be expected to quarrel with the Blackpool magistrates, who, according to a decision of Thursday in last week, have notified itinerant photographers that they will be expected to obtain a licence. This decision arose out of the sum of five travelling photographers, who were obtaining business by going from door to door. They were fined 5s. each and costs.

#### Rectilinear v. Anastigmat.

A correspondent last week wanted to be assured of the practical advantage of anastigmat lenses over rectilinears. A great many people seem to be equally uncertain whether the difference in cost is really worth incurring. The rectilinear is a very useful instrument if it is a good specimen, and there are many good rectilinears about, but no one who replaces the R.R. by an anastigmat is likely to regret the change. In our answer we gave three advantages large aperture, great covering power, fine definition. Many rectilinears will define very well indeed in the centre of the plate, for which reason we have often recommended their use for very long focus narrow angled work in preference to the exceedingly expensive very long focus anastigmats; but when used for ordinary angles of view the anastigmat will probably give as good definition in the corners of the plate as the R.R. does in the centre. If the results are compared, even only a few inches away from the centre of the plate, the superiority of the anastigmat will be manifest, and it is generally very surprising to the man accustomed to the R.R. The value of large apertures, of a size that is quite impossible with rectilinears, needs little comment, but is one other rather important point that should be borne in mind. When purchasing one of the high-priced anastigmats produced by the best makers we are buying an instrument that has been very thoroughly tested in all respects and proved to be up to a certain fairly high standard. On the other hand, when buying the cheaper R.R. of some make, or even the cheap form of anastigmat, we are getting or less purchasing a "pig in a poke." We may get an excellent lens or a very poor one, for it is obviously impossible that these cheap "lines" can be as carefully and minutely tested and adjusted as the high-priced instruments upon which the makers stake their reputation. Some of the old R.R. lenses by the big makers were tested with great care, and they form excellent bargains. But still they are very deficient compared with the anastigmats, the purchaser of which always gets full value for his money.

#### The Hardening of Gelatine.

On another page we give a very important article by the Messrs. L. and Seyewetz containing much information that sooner or later may prove to be of considerable practical value. These indefatigable scientists have a long series of researches on the effects upon gelatin



rious precipitants and hardening agents, and the net result seems to be that such agents may be divided into three classes. First, precipitants that throw down a material soluble in hot water, apparently of the same composition and possessing the same properties as the original gelatine. Second, precipitants that throw down insoluble in hot water, with different properties and composition differing from that of the original gelatine. Third, agents that render gelatine insoluble in hot water and do not throw down any precipitate. It will be seen from the tables that generally we use only for hardening purposes the agents that belong to the third class, such as the bromium salts and formalin. The precipitants in the second class include many of the substances used in photography, and though they do not all have the same effect on gelatine films as on gelatine in solution, nevertheless some of them have a very powerful hardening effect on a print. Some modern processes take advantage of these facts, and probably much more use will be made of them in the future. Presumably vanadium chloride should be in this class, though it is not mentioned. It does not appear that the peculiar properties of the precipitants of the first class can be made much use of at present, though many familiar photographic chemicals are included in the list. Perhaps, however, it may be possible later to turn them to some useful account. It will be noticed that some very familiar reagents, such as hydroquinone and pyro, appear in both the first and third classes. They throw down a soluble precipitate, but their oxidation products render gelatine insoluble and are retained or "fixed" by the print. On the other hand, the reagents in the second class do not give an insoluble precipitate are stated to have the common property of supplying oxygen, either directly or through the presence of water.

#### EXTREME MEASURES IN P.O.P. PRINTING.

The ordinary routine of P.O.P. printing has been the subject of so much written and verbal advice to the photographer that one can hardly think there is another word to say as to the procedure which may be adopted. Our object here, however, is not to make any recommendations of a general nature as to the toning and finishing of platinum-chloride prints, but to point to one or two matters which are of minor importance in the usual run of things, but may become of some real importance once in a while. As an example, the trade printer occasionally is asked to produce one print from each of a large batch of negatives at very short notice; that is to say, he may receive the negatives in the morning, and be required to put finished P.O.P.s in the post in the evening. In such circumstances it is not improbable that one or two prints of a large number may fall short of the average quality, through over- or under-printing. Such is very likely to be the case if the negatives vary much in quality, and a negative which prints quickly needing a considerable degree of over-printing compared with a strong, slow-printing negative. Thus it may easily happen that when the prints come from the toning bath one or two of them are distinctly too much on the dark side, while the others may be one or two which suffer in the other direction. Even supposing the light permits of fresh prints being taken, the delay in getting the whole job out of hand would deter the photographer from taking this step to get things right; but usually the waning daylight does not permit even of this being done. Therefore, if a method of after-treatment can be applied to the print, such as will be the most satisfactory in every way. As regards the reduction of over-printed proofs, we translate from another page a recent paper by Professor Namias, in

which he advises for the purpose a bath of salt and hydrochloric acid, with, if necessary, the addition of a little copper sulphate. While we have not tried the formula recommended in precisely its present form, we have employed a preparation of copper sulphate without, however, finding it better than, or as good as, other solutions. Some year or two ago we made a series of comparative tests of all the reducers advised for the reduction of P.O.P. prints, especially with reference to their absence of unfavourable action on the tone of the print and as well to the convenient adjustment of their strength when using them for prints which were greatly or only very slightly overdone. Of all the methods available there was none which we found so excellent for the purpose as a dilute form of the reducer worked out by Mr. Alexander Haddon, in which potassium ferricyanide is used in conjunction with ammonium sulphocyanide. The formula as then used, and given in the "Almanac" during the past few years, is as follows:—

10 per cent. ammonium sulphocyanide solution ...	5 ozs.
10 per cent. potassium ferricyanide solution .....	$\frac{1}{2}$ oz.
Water .....	24 ozs.

This mixture is made at the time of use—it will not keep—and may be compounded with less water than that here given if it is thought that the more dilute solution will be too long in its action. We would word the caution, however, that a slowly acting solution is preferable to one of more rapid performance as regards absence of action on the tone of the print. This solution, of course, is the well-known Farmer's reducer, with the hypo replaced by sulphocyanide. The latter acts equally well as a solvent of the silver ferrocyanide which is formed, and the solution is quite stainless and without the tendency to give "mealy" or "flannelly" prints which makes the mixture of hypo and ferricyanide quite unsuitable for the purpose. This weak Haddon reducer is employed after the print has been toned, fixed, and washed. It is not necessary to give a further washing beyond a minute or two in running water, which is a point in the favour of the reducer in comparison with the next best formula for the same purpose, namely, ammonium persulphate. This latter, while equally without prejudicial effect on the tone—in fact it improves the tone in the direction of a cold black—should be followed by re-fixing in hypo in order to make certain of the permanency of the print.

As regards the intensification of a print which has been accidentally under-printed, the remedy is not so satisfactory as that just described in the case of over-printing, but it will nevertheless be found that advantage can be taken of the usual mercury and ammonia process of intensification, the well-washed print being bleached in solution of mercury bichloride and darkened (after washing) in weak ammonia, say, 1 dram of the .880 ammonia in 10 ozs. of water.

Finally, there is an alternative which can be followed if the negatives are not abnormally dense—further prints can be taken by magnesium light and brought up to full density in an acid developer. Usually the combustion of 12 or 18 inches of magnesium ribbon at a distance of 3 or 4 inches from the negative will be sufficient to impress a developable image, which can be brought to full strength in a suitable developing solution. One of the best formula for this purpose is that of Dr. Wolseley Blacklock, made as follows:—

A.—Pyrogallie acid .....	32 grs.
Tartaric acid .....	32 grs.
Water .....	16 ozs.
B.—Potass. bichromate .....	1-16th gr.
Water.....	16 ozs.

The minute quantity of bichromate in the B solution is best introduced by making up a stock solution containing 10 grains in 10 ozs. of water, and adding  $\frac{1}{2}$  dram of this to 16 ozs. of water. Equal parts of A and B are mixed together to make the developer, which is used immediately. The prints are fixed in a bath containing hypo 1 oz., lead acetate 60 grs., in water 6 ozs., in which

the prints lose very little. The use of the magnesium conjunction with a developer such as this should place a worker in possession of duplicate prints of correct strength within five minutes. The tone given by the above form is not at all displeasing, but may, of course, be modified by passing the prints through the combined toning fixing baths or through the separate baths.

## TONING BATHS FOR OVER-PRINTED P.O.P. PRINTS

[In prescribing a formula for the recovery of over-printed P.O.P. prints, Professor Namias, in the following article from "Photographie des Couleurs," directs the use only of the everyday chemicals which every photographer has at hand or can purchase from the nearest chemist. In many circumstances the cheapest method is to make a second print, but there are times when the use of some such method has to be adopted at the risk of disappointing a customer or being late with a print which is urgently needed. We refer to the measures which may be taken on such occasions in an article on another page.—Eds. "B. J."]

BEFORE prescribing the means which can be taken in dealing with over-printed proofs, a word should be said in reference to the common assumption that it is possible to correct for excessive exposure to light when printing from a negative on a paper of the printing-out class. In point of fact, such correction is not possible after the over-exposure exceeds a certain limit. If we suppose that we are dealing with a negative which possesses three degrees of density, which we will designate by 1, 2, 3, those of minimum density, the clear portions of the negative, being denoted by 1, whilst the densest portions, the high-lights of the subject, are represented by 3. If a normal print is made from such a negative on print-out paper, we obtain three tones in the paper which are the converse of those in the negative, viz., 3, 2, 1. These tones are due to the decomposition of the silver salt and the formation of, say, metallic silver.\* We can assume that the quantity of silver will be proportional to the numbers 3, 2, 1. But this is so only for a certain degree of printing—i.e., up to the point where the maximum of the reducible silver salt is formed under the parts of the negative corresponding to density 1. Beyond this point the ratio 3:2:1 no longer holds good, since the intensity of the deposit of silver corresponding to the density of 1 of the negative remains constant (all possible silver salt having been decomposed), whilst the deposit is increased under densities 2 and 3. On continuing printing, a point is reached at which the darkening of the film under density 2 also reaches its maximum, and the only part where there is a lesser degree of deposit is under density 3.

If printing is pushed beyond this point, the print, on being fixed, shows as almost or quite identical two tones which ought to appear quite distinct. No method of reduction can be really effective in this case, since the silver deposit is the same in the two parts of the image, and, therefore, is reduced by the solution to the same lighter tone. This example does not exactly correspond with an actual print which may be made in ordinary work, but it serves to explain the differences which may result from the excessive printing, even after advantage has been taken of reducing solutions. In an ordinary negative there are  $n$  degrees of density. If the over-printing has not been too excessive, we still have in the print, if not  $n$  different tones (the darker tones easily become merged in one another), at any rate,  $n$  different states of decomposition of the silver salt. By submitting the print to a uniform process of reduction, the whole  $n$  tones are lowered, and a passable print obtained.

\* The image is not actually pure metallic silver, but the above will suffice in explaining the process.

But, when the exposure exceeds the limit corresponding to the maximum decomposition of the silver salt in the film, the gradation between the different states of decomposition corresponding with the different densities of the negative ceases to exist, and no bath whatever will restore the print to the state in which it was at the period of correct printing. The following, however, is the method which is most strongly recommended for the reduction of over-printed P.O.P. prints:—The prints are placed direct in the following bath:—

Common salt (sodium chloride) .....	100 gms.
Hydrochloric acid, commercial .....	20 ccs.
Water, enough to make .....	1,000 ccs.

The prints are left in this bath for from five to ten minutes, then given a rinse and transferred to a combined toning and fixing bath.

This treatment, however, will be found sufficient only in the case of prints which have not received a very great degree of over-printing. In the case of prints in which the printing has been carried on a good deal beyond the proper point, additional treatment is required. The reduction takes place to an extent about proportional to the quantity of copper sulphate added, but the action is most effective after the print has been through the combined toning and fixing bath. The action of the bath is very rapid, and it is well to make one or two preliminary trials in order to keep it in hand. The bath soon becomes exhausted and requires to be renewed with fresh additions of sulphate of copper. If the prints are to be separately toned and fixed, the following solution can be used up as a combined toning and reducing bath:—

Gold chloride, pure .....	$\frac{1}{2}$ gm.
Common salt (sodium chloride) .....	10 gms.
Hydrochloric acid, commercial .....	5 ccs.
Water, to make .....	1,000 ccs.

This bath tones and reduces the prints at one and the same time. If the resulting tone is not satisfactory, the print can be transferred to a normal toning bath of gold and acetate after it has reached the right degree of vigour in the bath given above. It is well to bear in mind, however, that even in the cases where the over-printing has not reached the limit pointed out above is not the easiest matter to obtain the same perfection of regularity of tones which are produced with prints which have been printed to the right point.

R. NAMIAS



## TWO PRINTING HINTS FOR THE PROFESSIONAL.

was, and that not so very long ago, when the use of development papers in the professional studio was confined to the making of enlargements. But the advent of "gaslight" paper brought a change, and a large proportion of professional photographers of the middle class now appear to be using this of paper for contact work to a considerable extent, if one judge from the contents of their showcases.

Though many amateurs find considerable difficulty in the use of gaslight papers, the professional seems to be particularly successful in their manipulation, and by the careful selection of negatives suited to the particular make of paper, some firms produced quite unique results, to which they have given special names. The production of a suitable negative is one of the chief factors tending to success and uniformity of results. Among the various makes of gaslight papers, one a little better than what would be termed an "average" negative

of bromide, gaslight papers requiring too prolonged an exposure when a number of prints are wanted.

This method is also a convenience to the worker who does a little in carbon printing, and, to save double transfer, exposes his plate with the glass side towards the lens, and who requires to turn out some prints on gaslight or bromide paper. He has only to place the negative the wrong way about in the printing frame, expose to light coming through the lens, as above, in order to obtain prints as sharp as he can want them, and at the same time get a soft result from his carbon negative. The result will be the same whether the light is daylight or artificial, and the time of exposure about the same as in enlarging.

If no enlarging apparatus is obtainable, the same result may be obtained by using any lamp with a lens in front of the light, which throws out a straight beam, such as is known as



No. 1.—Contact print from negative.



No. 2.—Reversed print from glass side of negative.



No. 3.—Print with sheet of glass between negative and paper.

is the best for the purpose. But it is not always possible to obtain exactly the kind of negative one wants, and, through a slight error in exposure, or development, or possibly both, a negative may be obtained which is just a little too "contrasty" to give the desired result in printing, and under such circumstances the following simple dodge has been found of use in improving the finished result.

Printing from a negative of the last-named type a much sharper and more pleasing result will be obtained if a piece of clear glass is placed between the negative and the print, and the exposure made with light coming through a

If the exposure were made in the ordinary way, the result would be softer, but the image would be blurred, and of no use for professional portraiture. The following is the best method of procedure. Take a piece of the most rapid paper obtainable, print it in an ordinary printing frame as usual, but with a piece of clear glass between the paper and the negative, and expose the required time by placing the frame on the easel of an enlarging camera so that a full play of light from the lens will fall on the negative, which must remain stationary during the exposure, the lens being uncapped and re-capped as in enlarging. The paper most suitable for this work is one of the slow varieties

of a "bull's-eye." The advantage consists in the light coming through a lens and travelling in a straight line.

There is another matter which has failed to receive as much attention as it deserves from those photographers who use gaslight papers, and that is utilising the paper as part of the mount. Some print the portrait in the centre of a sheet of paper larger than is required and leave the margin white, or, in some cases, merely put a plate-mark round the picture. To print a border of some kind round the portrait is only a matter of obtaining a suitable border negative with correct registration during the double exposures, but correct registration is not always easily got, and more paper may be needed than is advisable. Now, any one can vignette a portrait in the centre of a piece of paper, and can also cover the portion containing the portrait with a piece of black paper. The whole can then be placed, face down, on a sheet of clear glass in a printing frame, and the back put on without the slightest risk of shifting the position of the black paper. After exposure to the light, and development, the vignettted portrait would be in the centre surrounded by a plain black border, but, as black would rarely, if ever, be required, a better plan is to use a piece of ordinary white paper in place of the black (without water-mark, of

course), and expose through that, thus obtaining a border with a granular effect, varying according to the grain of the paper, and lighter or darker according to the exposure given, but having much the appearance of a "nature" paper selected to harmonise with the colour of the portrait. If desired to add further to the effect, lines, either broad or narrow, may be drawn on the paper, which, on development, will all show as soft white lines. It is always better when lines or other ornamentations are drawn on the white paper to fix the black paper in the centre of those lines with a guide mark at the edge to regulate the position of the printing paper.

By this means one can produce cards in a style entirely of own. They can, of course, be afterwards mounted on ordinary mounts, but a better style is to have the paper double size required, with the print mounted on the back half and other folded over in the form of a book or folder. Something of this kind, which is rather out of the common style, always command a better price than that which can be obtained everywhere, and even a homely snapshot can be made to be decidedly more picturesque if mounted in some such way as above described.

J. PEAT MILLAR.

## THE PRECIPITATION AND INSOLUBILISATION OF GELATINE.

CERTAIN substances added to solutions of gelatine give rise, as is well known, to precipitates, whilst others produce with these solutions, and without visible precipitation, compounds which cannot be again rendered liquid in hot water when they have once set. Hitherto the analogy between the various compounds which produce these changes has not been studied. Moreover, it was not known whether the gelatinous precipitates obtained with certain substances were composed simply of gelatine thrown out of its solution unchanged as regards its composition and properties,\* or whether we had to deal with substances having a composition and properties depending upon the substance employed.

The present series of experiments were made in order to ascertain the facts as to:—

1. The bodies which precipitate gelatine and the possible relations between them.
2. The composition of the precipitated gelatine.
3. The bodies which, without precipitating gelatine solutions, produce combinations with the latter which do not again become fluid once the jelly has been formed.
4. The possible relation of this last phenomenon and that of precipitation.

### Action of Mineral Bodies on Gelatine.

Additions were made to a 10 per cent. solution of gelatine of aqueous solution of a series of mineral salts selected from the carbonates, chlorides, bromides, iodides, sulphates, sulphites, hyposulphites, nitrates, nitrites, hypochlorites, chlorates, bromates, iodates, cyanides, sulphocyanides, phosphates, borates, arsenites, arsenates, silicates, chromates, molybdates, tungstates, vanadates, and ferro- and ferri-cyanides. The solutions were employed of strengths which differed with the different substances. The first trials were made with a 5 per cent. solution, and, if this did not work, successively increasing strengths up to 50 per cent. were used so far as the solubility of the salt permitted. The *modus operandi* consisted in pouring the solution into the gelatine solution, or *vice versa*. Among the great number of mineral bodies which were thus examined only the following were found to precipitate gelatine: Phospho-tungstic acid, or a mixture of phosphoric acid and sodium tungstate; phospho-molybdic acid, or a mixture of phosphoric acid and ammonium molybdate; chlorine water,

bromine water, ferric salts (with the exception of the tartrate and citrates and the double salts with these acids), manganese and vanadic salts, ceric and uranic salts, gold chloride, platinum chloride, mercuric salts, and potass. permanganate.

A certain number of salts, including the carbonates, phosphates, nitrates, sulphites, bi-sulphites, and hyposulphites of the alkali metals, precipitate gelatine only when the solution is of sufficient strength. This is the case with solutions of 15 per cent., the action increasing with solutions of greater strength. Among such salts are the following: Sodium carbonate, potass. carbonate, ammonium sulphate, sodium phosphate, potass. sulphate (the 10 per cent. saturated solution gives a slight precipitate), ammonium, sodium, and potassium nitrates, sodium sulphite, bi-sulphite, and hyposulphite.

Lastly, the salts of aluminium increase the viscosity of gelatine solution without producing a visible precipitate. It will thus be seen that all the mineral bodies which precipitate gelatine in dilute solution are oxidising agents. The converse of this statement does not hold good, there being a good number of mineral oxidising bodies (salts or acids) which do not precipitate gelatine solutions. The power of precipitation is therefore not a common property of the mineral oxidising bodies.

The substances which precipitate gelatine only if they are employed in highly concentrated solution are the carbonates, sulphates, sulphites, bi-sulphites, hyposulphites, and nitrates of the alkaline metals. This action differs from the preceding in the fact that the gelatine precipitated by the strong solution of an alkaline salt re-dissolves immediately on the addition of a sufficient quantity of water.

### The Action of Organic Compounds.

Only organic bodies soluble in water have been tried. Apart from certain liquid substances soluble in water, such as acetone and alcohols, in which it is well known that gelatine becomes insoluble, the organic bodies which appear to precipitate gelatine are as follows: Phenol, resorcin, orcin, hydroquinone, pyrocatechin, gallo-tannic acid, pyrogallie acid, para-nitrophenol, chlorophenol, picric acid, monochlor-hydroquinone (adurol), "acid R." (disulpho- $\beta$ -naphthol 2.3.6.), "acid S." (disulpho- $\beta$ -naphthol 2.6.8.), and "acid S." (monosulpho-naphthol 2.6). The naphthols, dioxynaphthalines, amines, and the amido-phenols do not precipitate gelatine solutions.

Among the organic compounds it is only the phenols or their products in which a nitro, halogen, or sulpho group has been substituted (in the acid state, but not the salts) which are able to produce precipitation. Phenols, slightly soluble in water such as the  $\alpha$  or  $\beta$  naphthol, as also the simple amines, basic or saline compounds of the latter class, do not precipitate gelatine. The same holds true with regard to the amido-phenols, which are very soluble in water.

\* Lüpke-Cramer has recently shown ("Zeitschrift für Chemie und Industrie der Colloide," 1907, Heft 12) that certain of these phenomena of the precipitation of gelatine by metallic salts, such as ferric chloride, take place at the same time as the hydrolysis of the salt employed, the oxide of which is thrown down in the colloidal state. There is thus produced the hydrosol of ferric hydrate which coagulates the gelatine to a reddish-brown jelly. This change of the ferric salt from hydrate into hydrosol appears to be identical with that which occurs when a weak solution of ferric chloride, containing no hydrochloric acid, is heated. Lüpke-Cramer has shown that the coagulation and insolubilisation of gelatine by ferric salts only takes place when the ferric oxide is thrown down in the colloidal state. The substances which break up the colloidal state of the oxide of iron also destroy the insolubility produced by the ferric acid.



ndently of the bodies which precipitate gelatine or its  
it is well to consider those which can be added to  
olutions without producing precipitation, but yet give

The mineral substances which give rise to the first class of precipitate are comparatively few, and are all alkaline salts with the exception of phosphotungstic acid, phosphomolybdic acid (or the equivalent mixtures above mentioned), and the mercuric salts. The mode of action of these compounds appears different from that of the alkaline salts, inasmuch as these

latter produce precipitation only in very strong solution, whilst phosphotungstic acid and the mercury salts act in weak solution. Moreover, gelatine precipitated by these substances does not dissolve in cold water, whilst in the case of the alkaline salts the gelatine re-dissolves on simple addition of cold water.

Organic substances which produce precipitates soluble in warm water appear to belong all to the class of phenols or substituted phenols, namely, phenol, resorcin, hydroquinone, pyrocatechin, orcin, pyrogalllic acid, monochlor-hydroquinone, picric acid, chlorophenol, naphthol-sulphonic acid, all of which have acid properties.\* The substances which convert gelatine into a body insoluble in hot water appear to have the common property of supplying oxygen, either directly or in presence of water. In the class of mineral bodies giving gelatinous precipitates insoluble in hot water are chlorine, bromine, ferric, uranic, and manganic salts, permanganates, gold chloride, and platinum chloride. Among the organic substances we have found only gallo-tannic acid (tannin) which is capable of giving (in the case of the gelatine solutions) a precipitate which can be re-dissolved in hot water.

\* The salts of phenol and of naphthol-sulphonic acids do not precipitate solutions of gelatine.

The compounds rendering gelatine insoluble in warm water but without precipitation are as follows:—

*Mineral.*—Chromium salts.

*Organic.*—Formaldehyde, quinone, quinhydrone, quinaldine, and the oxidation products, more or less defined, the following phenols: pyrocatechin, hydroquinone, resorcin, pyrogalllic acid, and monochlor-hydroquinone.

In the case of mineral salts it is noticed that the insolubility of the gelatine does not appear to be merely a result of oxidation, but the gelatine fixes a certain quantity of the salt, causing insolubilisation. This oxide of itself to the gelatine only when it can be formed in the solid state. In the case of organic substances the oxidation of the gelatine appears to be accompanied by the fixation of an organic residue. In the case of the action of formaldehyde, for example, it is known that the formaldehyde can be removed from gelatine which it has rendered insoluble by boiling with water, but no other experiment can be put forward as definite proof that a similar process goes on in the case of the quinones and their derivatives. For these bodies cannot be recovered, and the percentage composition of the gelatine does not allow of any conclusion being drawn.

A. AND L. LUM  
A. SEYEWETZ.

## THE HOLLINGER LIGHTING.

[A feature of the present American professional conventions—introduced, we believe, by Mr. Pirie Macdonald—is a series of demonstrations of their methods of working by leaders in the professions. Thus at a New York convention now being held Mr. Hollinger of that city is showing the system which he uses in obtaining portraits which are characteristic of his work. Apropos of this we may quote a short description of the Hollinger method from the encyclopædia of practical photography to be shortly issued by the American School of Art and Photography, 215, Washington Avenue, Scranton, U.S.A.—Eds., "B.J."]

ALTHOUGH the "Hollinger" lighting belongs to the low key style, it is not "freaky." It gives extremely pleasing results, and truth-

manner. While this lighting may be produced in any key, a medium tone is to be recommended.

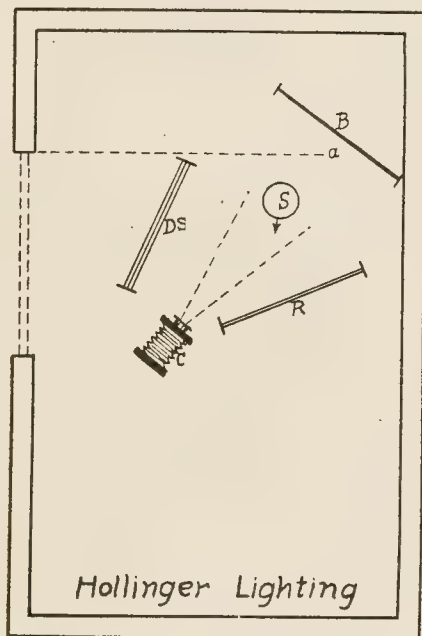
For this style of work it is necessary to use an open, or open skylight. Referring to Illustration No. 1, you will observe the arrangement and the position in which the subject and accessories are placed. The operating-room should have a height from 4 to 6 ft. of space beyond either end of the light. In every case, the room is short and the skylight is built very near to the back of the room, thereby not allowing sufficient space for the subject, the proper space can be supplied by drawing one opaque shade down the entire length of the light, if your subject is a single slant. If a hip light, draw one of the top shades down to the top of the side-light, and then the side shade from the bottom of the top of the side-light. This will be of material aid, as it reduces the size of the light the width of this shade. Placing the background directly under the light would strongly illuminate the subject and cause the background effect to appear coarse, harsh, and instead of soft and diffused as it should be.

### Lighting the Subject.

Refer to Illustration No. 2 and observe that the skylight is almost wide open, there being sufficient space beyond the subject to the skylight to arrange the subject and background. The first shade used is the first one on the skylight, which has been drawn, preventing strong light from being carried too far to the face. For this variety of lighting the subject must be placed back from the light to permit all the illumination to fall on the sitter from the front.

### Controlling the Light with the Diffusing Screen.

The light is controlled entirely by the diffusing screen, which is placed between the light and subject, while the tone, or key, of the light, is obtained by placing the screen closer to, or farther from the sitter. If the diffusing screen were not placed between the light and the sitter, heavy shadows and strong high-lights would result. In fact, the effect would be quite contrary. By drawing the extreme high-lights with the diffusing screen, the same effect is also performed for the shadows. Experiment by placing

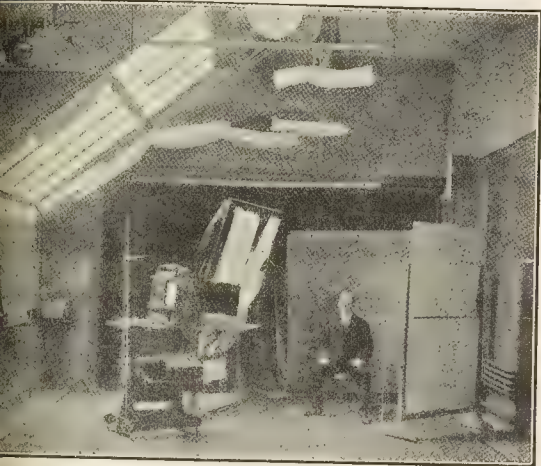


fully reproduces the likeness of the individual. For portraits of men there is no stronger or more effective form of lighting, as the character of the subject is brought out in the best possible



the screen at various distances from the subject, observing the different effects produced.

When using the diffusing screen think of it as your skylight. By opening, or closing, the small curtains at different places on the screen, and also by tipping the screen forward at the top, every ray of light can be controlled and directed to secure the desired result. For this style of lighting all the dark opaque curtains could be drawn on the diffusing screen, except, perhaps, the top one. Where the opaque curtains cut off too much light from the drapery, separate them to allow the illumination to filter through the tan curtains on to the drapery, thus supplying catch-lights. The narrower the opening the more concentrated and snappy will be the catch-lights, while the increased separation of the black curtains produces broader light upon the drapery. By properly



pulling the screen, sketchy effects may be obtained, with soft negatives full of detail and atmosphere. It is essential that there should be detail in the drapery, as well as in the shadows of the face. Photographers sometimes carry this diffusion to the extreme, losing all semblance of detail in the drapery. This is wrong. There should be sufficient detail in the drapery to leave no doubt as to the texture of the material. It is far better to light the drapery a tone higher than too low.

To make a successful "Hollinger" lighting, the eye should be trained to observe the most delicate high-lights. This is essential in judging when the proper effect has been produced. The high-lights need not be prominent on the face, but the most delicate must be preserved in the development. For your first work it is better to use a rather high key of light, and, when once familiar with the different methods of lighting, you may then experiment and work for a lighting in a lower key, but avoid going to the extremes.

For "Hollinger" lighting the person being posed should be placed back from the light, permitting all the illumination to fall on the face of the subject. By reference to the diagram of the floor you will observe the exact position of the different accessories making the illustrations. As conditions are not the same in all studios, it may be necessary to alter the positions somewhat to suit the room in which the work is being done; but the diagram will serve to illustrate clearly the manner in which the lighting is effected. The principal points to remember are, that practically no light must be employed; that the subject is placed back from the direct light, and also away from the side light; and that the key of light is controlled by the diffusing screen between the subject and the sitter. As this lighting is delightfully soft, it is particularly well adapted to almost any style of pose, sitting positions, standing positions, or half figures being most attractive under this lighting. For group positions of men, or women, give beautiful results. It is particularly effective for children's portraits, because they are made to advantage in a higher key.

## EXAMINATIONS IN PHOTOGRAPHY.

To talk of examinations when the English weather is giving signs of repeating its splendid June programme during August, may appear a peculiarly inopportune thing to do, yet the fact remains that within little more than a month the summer will be waning and the season of lectures and classes upon us. And therefore, on the principle that it is always better to be too soon than too late, attention may be drawn to the examinations held annually in the spring by the City and Guilds of London Institute in photography as well as in some score or more of other branches of technology. We are not champions of the examination system. We acknowledge that it induces a habit of mind which in many cases turns out to be by no means the best for the future welfare of the student. But, on the other hand, one must not lose sight of the great merit of an examination—namely, that it inspires and sustains interest in a course of study which, in the absence of such a stimulus, would most likely not be entered upon at all. For that reason, and also because the study of the principles of photography are so largely disregarded both by amateurs and those who are to engage in photography as a business, we would draw to the notice of our readers the papers of questions and the practical examinations held in London and provincial centres by the "City and Guilds." This examination is divided into two divisions:—

### A.—Pure Photography.

#### B.—Photo-mechanical Processes.

Each of which is again sub-divided into the Ordinary and Honours grade. In each grade a paper of questions is set, and in the "Honours" in both Sections A and B the student must enter a practical examination.

Full particulars of the places where the examination is held can be obtained from any technical school in London—the Polytechnic, Regent Street, particularly interests itself in the examination—and the City and Guilds Institute, in the prospectus issued from its Examinations Department, Exhibition Road, gives all other particulars, and recommends the text-books most helpful to intending examinees. The following are the papers and practical tests set at the last examination:—

### A.—PURE PHOTOGRAPHY.

#### ORDINARY GRADE.

Eight questions only to be attempted.

1. Do you approve of the plan of keeping the developer in motion while developing a dry plate? If so, why, and to what extent? What ill effect, if any, would you expect to follow if the solution were allowed to remain still? (30 marks.)
2. In developing a plate known to have had four times the correct exposure, how would you proceed so as to obtain the best result? (40.)
3. Give formulæ for toning solutions for (1) albumenised paper, (2) P.O.P., (3) collodio-chloride paper. (40.)
4. What kind of plate would you use for copying to the same size as the original (1) a manuscript with faded writing, (2) a water-colour painting in colour; and what plate for making an enlargement to two diameters from a print on albumenised paper? How would you illuminate the originals in each case? (50.)
5. Platinotype paper is sent out in hermetically sealed tins with a quantity of drying agent enclosed. Why is this method of packing adopted, and what would be the result if it were packed in the manner usual with P.O.P., bromide paper, etc.? (30.)
6. How would you store a supply of platinotype paper, judged to be sufficient for one day's use, for a number of negatives of different sizes? Taking 5½ in. by 4¼ in. as the size for printing "cabinets," how would you cut up to the best advantage a sheet 26 in. by 20 in.? Ditto for whole-plate negatives? (40.)
7. Describe how you would proceed to make a so-called vignette head and bust from (1) a quarter-plate with a half-length figure, and (2) a 12-in. by 10-in. negative of head and bust, the head being 3 in. long. (40.)
8. What do you understand by the term "anastigmatic lens" for photographic purposes, and how would you proceed to ascertain the focus of one of them? Give an example of a suitable method. (50.)
9. In using a whole-plate camera, fitted with lenses of wide-angle capabilities and of 8-in. and of 14-in. foci, the negatives obtained were sometimes foggy and at other times free from fog.

Can you suggest an explanation, and a remedy not connected with plates or dark-room? (45.)

10. If you had to make a large number of smaller prints from a whole-plate negative that had a small crack extending from the side, through an entirely useless margin, to within a quarter-of-an-inch of the portion to be printed from, what danger would you apprehend from the crack, and how would you provide against it? (50.)

11. In "spotting" prints, i.e., removing casual blemishes, how would you proceed, and with what materials, to remedy (1) a light spot with darker surroundings, (2) a dark spot with lighter surroundings—with platinotype paper and with P.O.P.? (40.)

12. What fittings would you wish for so as to be able to use half-a-dozen lenses of different sizes with one camera? (25.)

13. Describe how you would retouch a portrait negative. What special treatment would you give one in which the face shadows were much too heavy? (40.)

#### HONOURS GRADE.

Seven questions only to be attempted

1. Describe two methods of intensifying a negative. (25 marks.)  
2. What effect does the addition of potassium bromide to the developer have (1) before the development is commenced, (2) after the image has commenced to appear? (25.)

3. A new colour-sensitive plate is put into your hands, and it is to be used in copying paintings to give the proper value of the colours in monochrome. Describe the method you would adopt to obtain a proper screen. (40.)

4. Having a "single" photographic plano-convex lens of 6 in. focus, the convex surface being outward, and a *bi-concave* lens of 2.88 in. focus, it is required to make a combination which will come to a focus for a distant object on a screen 18 in. away from the convex surface of the photographic lens. What will be the distance apart of the plano-convex and the concave lenses, and what will be the focal length of the combination? The concave lens is to be between the photographic lens and the screen. (50.)

5. Describe how you would make an enamel of a head and bust on an oval plaque 3 in. in longest diameter and 2 in. in shortest diameter, the head to occupy one-third the length of the oval. On the original negative the head was 2 in. in length. (35.)

6. What effect has (1) ozone, (2) sulphuric acid, (3) bichromate of potash, (4) hydrochloric acid, (5) permanganate of potash, on the undeveloped photographic image impressed on a collodio-bromide plate? (30.)

7. In some cases manufacturers recommend that their plates (colour-sensitive) should be manipulated in darkness. Is this an absolute necessity? If not, what light should you use? Give reasons for your answer. (25.)

8. Describe some process in which iron salts are the sensitive salts. (30.)

9. In what way does a backing to a plate mitigate halation? Give the essentials of a good backing. (30.)

10. Describe the development of an Autochrome plate and its conversion from a negative into a positive. How is the effect of colour produced, and are the colours theoretically correct? (40.)

11. A lens is made of glass having a refractive index of 1.5. It is plano-convex, and has a focus of 9 in. Neglecting the thickness of the glass, what will be the radius of curvature of the convex surface? (25.)

12. Describe what is meant by the efficiency of a shutter. (35.)

#### PRACTICAL EXAMINATION.

Candidates may select any two of the following tests.

1. Copy the engraving given you, making the copy as large as possible on a half-plate. The density on the parts of the negative representing white should be such as to allow a print to be made showing good blacks and good whites.

2. Make an enlargement on bromide paper of a whole-plate size from the quarter-plate negative furnished to you.

3. Print, develop, and fix a platinotype taken from the accompanying negative.

#### PHOTO-MECHANICAL PROCESSES.

##### ORDINARY GRADE.

Seven questions only to be attempted.

1. Describe any form of camera suitable for copying purposes. What are the essential conditions which the apparatus must fulfil?

Why are copying cameras sometimes "swung," and what methods are adopted for swinging? What are the drawbacks to such systems, and what alternative method would you suggest should be adopted? (50 marks.)

2. Give a simple description of an "open" and an "enclosed" electric arc lamp suitable for use in a process studio. Has the "enclosed" arc lamp any advantage over the "open" arc lamp, and if so, for what reasons? (30.)

3. Write a brief account of the wet collodion and gelatino-bromide dry-plate processes. Why is the wet collodion process generally preferred by those who prepare negatives for the photo-mechanical processes? (25.)

4. What do you understand by the terms "alkaline" and "acid" development respectively? Comparing the negatives produced upon a wet collodion plate and upon a gelatino-bromide dry plate, what respects do the images differ? (50.)

5. Describe the appearance of the following named substances: Dragon's blood, stearin, glycerin, oil of spike, pyroxyline, guaiacum, asphalt, pitch, bitumen, fish glue, colophony, albumen, celloidin, beeswax. How are these bodies obtained and what are their principal uses? (50.)

6. Describe the enameling process. By what means can you vary the character of the print obtained from a given negative? How can you produce differences in the sensitiveness to light of the film? (50.)

7. How would you prepare a solution of ferric chloride suitable for etching copper plates? What means would you adopt for ascertaining the concentration of the solution? Why are solutions of different concentrations used in the process of etching? (25.)

8. What is a "glazed" roller, and how may such a roller be made? In what process is it used, and why is this particular kind of roller necessary? (25.)

9. Give a description of the Mark Smith etching machine, and state how it is used. Your answer should be illustrated by a simple sketch in outline, showing the essential parts of the machine. (30.)

10. What is the Vandyke process? Explain the principle, and give an outline of the working of the process. (30.)

11. Describe carefully the regular cross-line screen, the irregular grain screen, and the metzograph screen, and explain how they are used in photo-mechanical photography. (40.)

12. What is an "orthochromatic" process dry plate? In what respects does it differ from an ordinary dry plate? (25.)

#### HONOURS GRADE.

1. Explain the different ways in which *continuous* or *closed* tones are translated into *broken* or *open* tones for the purposes of photo-mechanical photography. So far as concerns visual effect, what is the underlying principle in these methods? (50 marks.)

2. Describe a practically useful process by which collodion plates prepared by the bath method, may be rendered sensitive to the refrangible regions of the spectrum of white light. (30.)

3. You are required to produce from a painting in oil colours a "half-tone" type-high block, a print from which shall be a correct transcript in monochrome. Describe in detail the method you would adopt, and state your reasons for such procedure. (50.)

4. Write an account of the method of producing a print by the collotype process. How do you explain the formation of "grain" (reticulation) in the film of the collotype plate? (35.)

5. What is a mercury vapour lamp? Describe the different parts of an installation of such lamps, and state for what purposes the installation can be usefully employed in a "process" studio. (30.)

6. You are required to produce the process blocks to illustrate a catalogue of silver ware. Amongst the objects are a number of small brushes with metal backs in bas-relief. How would you proceed in order to make the best illustrations of these objects? (30.)

7. Describe any process with which you may be acquainted for the production of mechanical "overlays" for use in the printing of half-tone process blocks. (20.)

8. Give an outline of the method of making an intaglio plate from an original drawing in line. Is a grain necessary, and if so, what is it necessary? (35.)

9. What is the Schultze screen, and what are the advantages claimed for it? (20.)

10. Describe a process for making pyroxyline. What solvents are used in making collodion and in what proportions are they?



employed, and what proportion of pyroxyline to solvents is usually used? How would you prepare a collodion suitable for line work in the wet-plate process? (35.)

Name the chief sensitisers employed in orthochromatising dry plates, and state the particular spectral regions for which they produce an increase in the sensitiveness on silver bromide. How would you in practice use these substances? Point out any difficulties and defects which are likely to occur. (50.)

Three bodies—mercuric oxide, lead chromate and zinc oxide—placed side by side and are examined in sunlight. When asked to describe their appearances, you say that one has a "red" colour, another a "yellow" colour, and that the remaining one is "white." Explain fully what you mean by these terms. Is this quality you call "colour," and the particular colour observed, in any way dependent upon the conditions under which you are examining the plates, and if so, what is the cause of the phenomenon? (50.)

Certain processes for the pictorial rendering of coloured objects by photography are said to be "synthetic" and others "subtractive." What is the difference? How are yellow and bright red produced in the synthetic and subtractive processes respectively? (30.)

#### PRACTICAL EXAMINATION.

Candidates may select either of the tests from any one branch, I., II., or III., but they may not take tests from more than one branch.

#### Three-Colour Process.

(a) A set of three-colour filters and sensitive plates, to which they are adjusted, are provided. You are to make, from the coloured original given, a set of direct screen negatives, and to produce prints upon copper from the negatives by the enamelling method. (60 marks.)

(b) Make a set of three-colour continuous tone negatives from the object supplied, and from the negatives make a set of contact transparencies suitable for screen negative making. (40.)

#### Half-tone Block Making.

(a) Make a screen negative from the half-tone print supplied, of the same size as the original. Print on zinc by the enamelling method. Etch the plate and make a clean proof. (60.)

(b) From the negative supplied, print and etch a plate, make a proof and afterwards fine etch the plate, and finally make a careful proof to show the state of your work. Submit both proofs together with the plate. (40.)

#### Fine Line Block Making.

(a) Make a negative from the fine line original supplied. Print on zinc, transfer tint to parts indicated and make ready for etching. (60.)

(b) Make negatives from the originals supplied, to different scales upon the same plate. Make a print on zinc and etch the plate. (40.)

#### FORTHCOMING EXHIBITIONS.

September 11 to October 24.—Photographic Salon. Entries close August 31. Sec., Reginald Craigie, 5A, Pall Mall East, London, W.

September 17 to October 24.—Royal Photographic Society. Entries close September 1. Sec., J. McIntosh, 66, Russell Square, London, W.C.

October, 1908, to January, 1909.—Kiew International Photographic. Sec., S. T. Horovitz, Technical Society, Kreshtchatik, Kiew, Russia.

1909.

October 6 to 27.—Northern Photographic (Manchester). Entries close December 11, 1908. Sec., S. L. Coulthurst, Broad Oak Road, Worsley, Manchester.

PHOTOGRAPHY AT MIDNIGHT.—Mr. R. W. Porthouse, of Carlisle, has made a print from a film negative taken on July 1, from 11 p.m. to 12.15 a.m. The subject, a landscape with a lake foreground, received an exposure of seventeen minutes, the film being of speed 78, and the stop,  $f/8$ . Except for the slight blur of two boats in the foreground, due to their movement, the photograph has the appearance of a full exposure made towards

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents were made between July 20 and 25:—

CAMERA.—No. 15,403. Improvements in photographic camera. Herbert George Chessher, 68, High Holborn, London.

SHUTTERS.—No. 15,548. Improvements in and connected with photographic shutters. Frank Whitehead and Walter Frederick Giles, trading as F. Whitehead and Co., 34, Pickets Street, Balham, London.

CAMERAS.—No. 15,608. Improvements in photographic cameras. The Thornton-Pickard Manufacturing Co., Ltd., Arthur Gray Pickard, and Arnold Shepherd, 6, Bank Street, Manchester.

DEVELOPERS.—No. 15,657. Improvements in or relating to photographic developing and fixing solutions. Felix Jeannot and Maxsted R. Bremner, 111, Hatton Garden, London.

TELEPHOTOGRAPHY.—No. 15,817. Improvements in telephotographic apparatus. Pascal Berjonneau, 20, High Holborn, London.

PLATES.—No. 15,866. Improvements in or connected with photographic films or plates. James Hugh Collingwood Sproule, 40, Chancery Lane, London.

#### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

COLOUR PHOTOGRAPHY.—No. 10,611, 1907. Patent has been granted to the following process, the essential part of which will be recognised as identical with that associated some eight or nine years ago with the name of Mr. Friese-Greene, and referred to in another page under "Ex Cathedra." The camera is provided with a rotating disc arranged to rotate at any desired speed, which disc consists of three light screens or filters, violet, green, and orange respectively, with opaque intermissions, arranged to pass the lens of the camera alternately during the period of exposure at the proper speed and regularity. The only condition which is necessary to observe with this combination or arrangement of apparatus is that the disc shall exclude from the sensitive plate all light except such as passes through the screens, and the screens should be of such size or the disc so arranged that the whole of the desired light picture is produced and thrown upon the plate. With the disc properly constructed, no intermissions are required, and if operated in a good light the time of exposure should be approximately the same as without the disc.

The three pictures corresponding to the three colour-sensations are thus blended into one natural-colour light picture by the action of the disc.

In applying the method to produce pictures in the natural colours, a bichromate plate is exposed under a dry plate diapositive in the usual way. The best plate for this purpose is the one which would best respond proportionately to the various intensities of white light. The plate may combine special sensitisers or sensitisers combined with pigments to obtain special results, selected with due regard to the character of the light picture to which the plate is exposed.

The positive bichromate plate, when properly printed and prepared, is then immersed in a suitable blue dye bath and dyed. When the darkest part of the picture appears on the plate in a deep blue colour, or when a blue picture full of detail appears, the plate is then sufficiently dyed and the proper proportions of blue are found distributed throughout the picture, thus making a blue print of the original object. The plate is then washed in running water until the surface dye is removed. This washing is repeated after each dyeing. The plate is then immersed in a red dye bath for the proper length of time, as determined by subjecting a similar plate to a red dye bath alone, or by observation during the process conducted in accordance with the laws of the mixing of colours. Thus the effect is produced of blending a blue print and a red print of a given object on the plate. The plate is then immersed in a yellow dye bath, and similarly a yellow print of the

given object is blended with the others. The result is a natural colour picture of the original object on the plate, from which copies can readily be taken by any of the methods known to practice. Burton Stearns Philbrook, 166, Remsen Street, Brooklyn, New York, U.S.A.

**CINEMATOGRAPH SHUTTERS.**—No. 24,525, 1907. The invention consists of an improved form of automatic shutter for cinematograph projectors and controlling gear, by means of which the light from the projecting lantern is automatically screened from the film when the film is not moving. The invention is an improvement on that described in Specification No. 10,047, 1898, and has for its object a simplified means of fitting the shutter to the gate of the projector, which has to be movable, while the operating mechanism is carried on a fixed part of the machine.

The shutter consists of two metal plates running in a pair of horizontal slides, which are attached to the gate of the projector, the two plates being connected together by a lever or levers so that they always move together, but in opposite directions. The operating mechanism consists of a centrifugal governor built in the flywheel which is usually mounted on one of the fast running spindles of the machine. To transmit the movement from the governor to the shutter on the gate we use a wire inside a flexible tube either in the form of a flexible shaft or the well known Bowden wire. Ernest Francis Moy and Percy Henry Bastie, Greenland Place, Camden Town, London, N.W.

The following complete specifications, etc., are open to public inspection before acceptance under the Patents Act, 1901:—

**SCREENS.**—No. 7,739. Method of manufacturing line and point screens. Veremigte Kunstseide-Fabriken Akt.-Ges.

**COLOUR PHOTOGRAPHY.**—No. 15,950. Photographic reproduction of colours. Caille.

### New Trade Names.

**LINSOL.**—No. 303,264. Chemical substances used in manufactures, photography, or philosophical research and anti-corrosives. Williams Brothers and Co., The Clarence Chemical Works, Hanworth Road, Hounslow, Middlesex, aniline dye manufacturers. May 21, 1908.

**STERISALT.**—No. 303,581. Chemical substances used in manufactures, photography, or philosophical research and anti-corrosives. Thomas Kerfoot, trading as Thomas Kerfoot and Co., Bardsley Vale Mills, Oldham Road, Bardsley, near Ashton-under-Lyne, Lancashire, manufacturing chemist. June 2, 1908.

**SUNBEAM.**—No. 301,048. Photographic cameras, slides, plateholders, and shutters included in Class 8. Thornton-Pickard Manufacturing Co., Ltd., Atlantic Road, Broadheath, Atrincham, Cheshire, manufacturers of photographic apparatus. March 6, 1908.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### The Photography of Doorways.

It is seldom advisable (writes Mr. E. W. Jackson in "Photography and Focus" for August 4) to photograph a doorway from a position directly in front. The camera should be placed a little to one side. This tends to give more variety of line from the altered perspective. A stand camera is undoubtedly preferable for this class of work. As the camera has frequently to be pointed upwards in taking large doorways and porches, the swing-back will often be brought into requisition. A level, too, will be found useful.

As a further aid to pictorial effect, an effort should be made to show an attractive foreground in doorway pictures. Nothing looks worse than to see a doorway or porch cut off close to the base of the structure. A few steps, some foliage, or a play of light and shade may make all the difference in the world between an uninteresting and a picturesque representation.

In development, also, care must be taken to avoid harsh contrasts—i.e., brilliant light and deep shade. To this end the normal

strength of the developer may be diluted, or the total time development kept short. A further most useful "dodge," printing by gaslight more especially, is to use a tuft of cotton-wool at the end of a fine wire. This kept in motion (with a circular action) in front of the darkest parts of the doorway will keep the exposure to any required extent.

### Lighting in Portraiture.

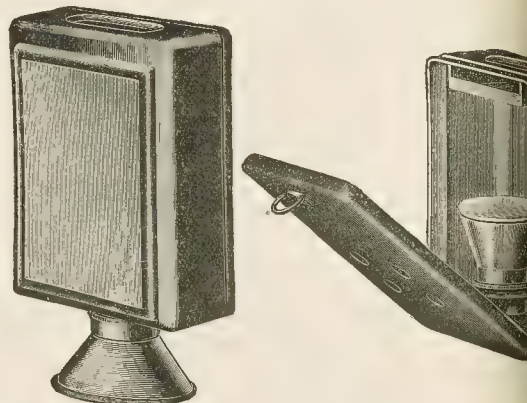
There is often an inclination (writes Mr. C. H. Hewitt, in "Amateur Photographer and Photographic News" for August 4) to soften the lighting of the face, as though well-marked cast shadows were objectionable *per se*. The result of such a course is general insipidity, and the portrait degenerates to the commonplace. Shadows are objectionable only when they are harsh, but if the plate has been properly exposed and over-development has been carefully avoided, the shadows strengthen the character of the portrait by emphasising the modelling of the features. Not vigorous lighting is the royal road to characterisation, but still that it is a road well worth following if the technical difficulties are properly mastered. Nor need the idea that strong lighting is unsuitable to the old and rugged face be clung to.

Quite frequently a portrait may be made interesting by the lighting alone, and a charm given to one's work which is altogether independent of the beauty or character of the model. There is always a fascination in some unforeseen play of light, but nature is enhanced if a beauty of contour or modelling is brought out. It is well also to remember that the flatter lightings do not do anything like the opportunity for hiding defects which exist. The light and shade are rather more forcibly expressed. In fact, it may be taken for granted that the success of a portrait, not only as a satisfactory likeness, but also as a piece of pictorial photography, depends quite as much on the reserve with which proportions are treated as on the emphasis given to the beauties of contour or modelling.

## New Apparatus, &c.

The "Minimum" Pocket Ruby Lamp. Sold by W. Butcher & Sons, Ltd., Camera House, Farringdon Avenue, London, E.C.

A portable ruby lamp, which is sufficient for changing plate when developing a plate or two en route, is a most useful addition to the tourist's outfit, and it cannot be said that much is offered in the purchase of such an accessory. Messrs. Butcher & Sons, in the new apparatus before us, have certainly reduced the size of the lamp to the minimum proportions, and have given their

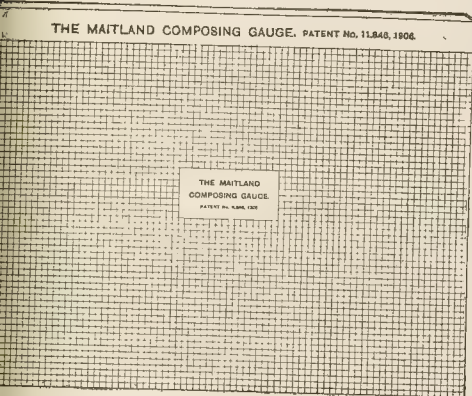


reduction a form which should appeal to the tourist. For the apparatus is entirely self-contained, and though the size of the glass is not great (2 x 2½ in.), the illumination is sufficient for the night-time changing of one's plates. The lamp consists of a small box, 2½ x 3½ in., which throughout is rivetted together, and is



with trapped inlet and outlet for ventilation. The illuminant lamp burning benzoline, the tiny reservoir being supplied with benzoline which is only to be saturated with the benzoline when the lamp. The reservoir, as shown in the second illustration, within the lamp when travelling, and the whole apparatus can be carried away among other luggage without fear that it will leak or contaminate grease to any clothing with which it comes in contact. The price of the "Minimum" pocket lamp is 2s. 6d.

**Maitland" Composing Gauge.** Sold by W. Butcher and Sons, Ltd., Camera House, Farringdon Avenue, London, E.C. A most useful aid to the trimming to odd sizes of any prints up to 7 in. is provided by this invention of Viscount Maitland, an example of which appeared among the "Patent News" in the "British Photographer" last year, the actual means for utilising the device being placed on the market by Messrs. Butcher. The composing gauge consists of a thin sheet of almost transparent tracing paper accurately into  $\frac{1}{4}$ -in. squares. In using it, the gauge is laid over the print, and the portion which it is desired to trim down to the



rectangular shape is then marked on the print by passing a needle through the point in the gauge. It is then only necessary to draw a straight-edge from point to point, preferably on the print where the points are more clearly visible, and the portion of picture is then obtained perfectly square and without trouble of measuring or gauging the truth of the right-angled corners. Twelve of these ruled gauges, fixed to a cardboard back, and packed in a box which is sent out, complete with instructions for use, at the price of one shilling.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

- SATURDAY, AUGUST 8.**  
 Urban Photographic Society. Excursion to Sevenoaks. H. Essenhigh.  
**MONDAY, AUGUST 10.**  
 London Camera Club. Auction sale of members' photographic goods.  
**TUESDAY, AUGUST 11.**  
 London Photographic Society. Excursion to Sutton Park and Streety.  
**WEDNESDAY, AUGUST 12.**  
 London Camera Club. "Still Life Photography" Wm. Handley.  
 Middlesex Photographic Society. Principles of Composition. A. & F.

**FRANKWATER BUTT, F.R.P.S.,** has, owing to termination of his contract, moved from his late address at Hammersmith to Roseneath, 13 Athor Road, Shepherd's Bush, W., where he may be consulted on all matters relating to photography, and particularly on the construction and fitting-up of studios, on which subject the series of articles in our pages have afforded one illustration of his knowledge.

## Commercial & Legal Intelligence.

**PICTURE POSTCARD DISPUTE.**—In the Lord Mayor's Court, last week, Messrs. F. E. Fry and Co., photographic printers, sued Mr. Garner, picture postcard publisher, of Leicester, for the price of picture postcards. Mr. Givern (instructed by Mr. Joseph) was counsel for the plaintiffs, and Mr. Trapp (instructed by Mr. Phillips) for the defendant. The plaintiffs' case was that an order was given on the terms of sale or return. Credit was given for returned cards, and the balance sued for was due. The Assistant Judge said that but for the question of costs he and the gentlemen of the jury might subscribe the amount, 11s. 8d. He thought that such a dispute might have been settled by the toss of a coin. The defendant's case was that all the cards received back from their customers had been returned. There was delay in delivery, and a counterclaim was raised for 17s. 6d. for preparing a negative which was of no use in consequence of the late delivery. The jury found a verdict for the plaintiffs on the claim and counterclaim.

**CANVASSING CASES.**—At the Greenwich Police-court, on Thursday last, Jacob Garcia, aged 24, of Emmanuel Street, Mile End, was charged with embezzling 2s. belonging to his employer, Alfred Mitchell, photographer, of 97, Woolwich Road, East Greenwich. Prosecutor stated that prisoner was employed as canvasser and collector at a weekly wage of 17s. 6d. He had a shilling from customers for which he did not account. He went out on June 27 to collect, but did not return, and a warrant was issued. Two witnesses having given evidence that they had each paid prisoner 1s., Detective-sergeant Wilson stated that when he arrested the accused he admitted having the money, and said that if he had been given the opportunity he would have paid it back. He had tramped to Liverpool and Manchester looking for work, and returned "broken-hearted." Accused now said that he had lost a sovereign out of his pocket, and did not like to face prosecutor. He admitted that he had already been convicted for a similar offence. He was sentenced to one month's hard labour.

Sentence of sixty days' imprisonment was passed by Acting Sheriff Pitman, in Edinburgh Sheriff Summary Court last week, upon a man named George Wood, described as a photographer, who pleaded guilty to having fraudulently obtained 8s. 6d. from ladies in Leith, by pretending to take their photographs.

## News and Notes.

**PICTURE FRAUDS IN GERMANY.**—A remarkable trial will shortly begin in Munich (writes the Berlin correspondent of the "Chronicle") of about twenty persons accused of falsifying pictures, supplying them with signatures of well-known masters, and selling them as original works. It is not believed that the painters of these pictures—most of which copies have been admirably executed—are accessory to the fraud, or that the best art dealers in Munich are privy to the doings of this gang, but there are certain strange matters which want clearing up, and which the trial will do much to elucidate. It is computed that during the last eighteen months something like 700 pictures, most of them copies of French works, have been sold in Munich as originals to wealthy buyers whose knowledge of art subjects is limited.

**THE HEALTH RESORTS DEVELOPMENT ASSOCIATION**, 29, John Street, Bedford Row, W.C., have added four new booklets, dealing respectively with the districts of East Grinstead, Skegness, Llandrindod Wells, and Weybridge, to their well-known and popular series of official guides. These booklets contain much useful information and are well illustrated, and may be obtained free by sending a postcard to the respective town clerks.

"COUNTRY LIFE" announces a competition for the three best photographs of children playing, paddling, castle-building, or engaged in any other seaside game or pastime. Prizes of £5, £2,

and £1 will be awarded, under conditions as follows: The photographs should be silver prints, preferably on printing-out paper, not smaller than half-plate size, and should be carefully packed and addressed to the Editor in a parcel bearing the words "Photographic Competition" on the outside. For the purpose of identification each individual photograph must be clearly marked with the name and address of the competitor. It is understood that all reproduction rights of the successful photographs will pass to the Proprietors of "Country Life," and, if required, the negatives of these pictures will be given up to them. The Proprietors also reserve to themselves the right to make use of any of the unsuccessful photographs upon payment of 10s. 6d. for each picture published. The competition will close on September 10, and the decision of the Editor—which will be final and without appeal—will be announced as early as possible after that date.

**A CAMERA CLUB FOR ST. ALBANS.**—At a meeting of St. Albans photographers, held last week, at which the Mayor presided, a formal proposition that a camera club should be formed was submitted by Mr. Coleman, who remarked that many of those present were members of the old photographic society, which was now practically non-existent; they had done nothing for the twelve months as a club. He thought he could speak on behalf of the committee of the old club when he said they would be pleased to help the new club, who perhaps might be able to take over what remained of the old club in the way of apparatus. The Mayor emphasised the point that the society was not being formed in any spirit of antagonism towards the old organisation, and the Rev. J. Aldred said he had been assured by several members of the old society that they were not only willing that a new society should be started, but would gladly co-operate in its formation. After a somewhat lengthy discussion the resolution for the formation of the club was carried, all present signifying their desire to become members, and the following officers were appointed: President—the Mayor. Committee—Messrs. C. H. Ashdown, Coleman, R. H. Shields, F. T. Usher, and T. Butler. Joint hon secretaries—Rev. J. Aldred, Berrystead, St. Peter's Road, St. Albans; and Dr. Puddicombe, London Road, St. Albans. The subscription was fixed at 5s. per annum, but members joining at once would not be required to renew their subscriptions till Christmas, 1909.

## Correspondence.

- \*• *Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*
- \*• *We do not undertake responsibility for the opinions expressed by our correspondents.*

### A FRAUD ON PHOTOGRAPHERS.

To the Editors.

Gentlemen,—I should like to be able, through the medium of the "Journal," to warn other photographers of a man who poses as a retired farmer and called on me the other day and gave an order for photographing a house from several views. He was particular that 12 by 10 negatives should be taken, and arranged for four views and one dozen copies to be supplied of each. The date and time for photographing was fixed, and the farmer was to send his own conveyance to fetch my apparatus, etc., as he stated that the house was more than a mile from where the 'buses stopped.

Two days later he called and postponed the appointment to a later date, and as he was leaving the door inquired the fare to a certain place in the West End, and on being told that the fare was threepence he casually remarked that he had left home with one penny only in his pocket, and as he was a prospective customer for several pounds I offered to lend him sixpence. He at first demurred, saying he would take a penny fare and get a cheque cashed. I pressed him to take a small coin, and he thought for a moment, and then answered, as he would be under an obligation to me for sixpence, would I lend him a shilling? I thought it rather strange,

but gave it him, and have never seen or heard any more of him. The conveyance did not arrive at the time appointed. On my inquiries I found the name and address a false one. The man was rather shabbily dressed, and has the appearance of being eccentric. He no doubt gets a very good living duping photographers in this way.—I am, faithfully yours,  
Kensington, W.

### DIAGRAM LANTERN SLIDES.

To the Editors.

Gentlemen,—To the useful article "On the Making of Diagram Slides" in to-day's issue of the "B.J." I may add the "warning" that to obtain a dead black line with the pure Indian ink—the writer is quite right in stating it is best to use freshly mixed ink, up with water in a proper china palette (which, by the way, should have a cover to keep the ink moist and free from dust during use)—it is only necessary to add a small quantity of water-colour when the gloss will give place to a dull black that will require without any necessity for washing the drawing.—I am, faithfully,  
DRINKWATER BUTT, F.R.S.

Roseneath Studio, Cathnor Road, Shepherd's Bush, W., July 31, 1908.

To the Editors.

Gentlemen,—In an article on this subject appearing in your issue of July 31 Higgins's ink is recommended as the next best substitute for pure Indian ink in the preparation of the line diagrams for slide reproduction.

I feel constrained, as the result of some comparative experiments I recently made on various black inks, to put in a plea for a product in this connection. The experiments seemed to me to conclusively the superiority of Winsor and Newton's "Black" over Higgins's ink. This superiority is due not so much to any great difference in actinism between the two blacks as to complete absence in the case of Process Black of a certain graininess or speckling in the whites of the negative, which is very ably get when copying a diagram made with Higgins's ink. The speckling is very marked in the thicker lines, and in colour washes laid on by brush. Furthermore, it is by no means removed by Howard Farmer's reducer.

As your articles were evidently intended for novices, it well to refer to a point of great importance in lantern slide which receives no mention in the articles—the temperature of the hydroquinone developer. The importance of this factor is to obtrude itself in the dog days, but in winter it brooks of no if one would obtain negatives that can be printed from direct out intensification. The temperature of the developer for good blacks should certainly be not lower than 20 deg. C. (68 F.) at the lowest.

It is further stated in the article that spotting out is required. This is unhappily too true, if the commercially prepared plate is used. The necessity for this troublesome operation, however, avoided if the backing is applied just before taking the negative. This is not the messy and *zeit-raubend* process that so many think it. My practice is to brush a little of Johnson's caranum on the plate, avoiding the margins for cleanliness' sake, and process plates this can be safely done in a good working light sheet of paper is then placed over the backing. (I find the same papers used by the Leto Company for their Seltona paper, the quality for the purpose. It adheres well, and does not back to penetrate.) The plate can then be put at once in a dark slide without any preliminary drying, and without the risk of soiling the dark slide.

I consider "home" backing not merely advisable, but absolutely essential, in printing transparencies in which there are pale continuous tone. It is easy enough, though tedious, to stop the pinholes in the opaque of a line negative; it is an achievement which carries distinction with it to be able to unrecognisably spots in, say, the cloud or the continuous background of a transparency.—Yours truly,  
Blackheath, London.

DOUGLAS CARR



# Answers to Correspondents.

matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.

respondents are informed that we cannot undertake to answer communications through the post. Questions are not answered as the names and addresses of the writers are given.

communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & CO., Wellington Street, Strand, London, W.C.

the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street Strand, W.C., undertake the registration of copyright photographs at a charge of 1d. each photograph, to cover cost of registration fee, form, etc. unmounted copies of each photograph must be sent with the

—A result of this kind is obtainable with a duplex carbon e.g., a tissue containing a blue and a sepia film; but we think more likely that a species of double toning (applied to a plate print) has been resorted to. See the article on page 567 issue of July 24.

ER IN CHILD PHOTOGRAPHY.—Would you please give date of "er" mentioned in above article?—AUGUSTUS.

ER FOR CLOUD NEGATIVES.—We should be obliged if you favour us with replies to the following in next week's "B.J." We are informed that it is not generally possible to obtain good effects (even if rapid snaps and cloudy) with pyro soda paper, as with hydroquinone developer. Our contention is pyro is a contrasty developer, and in its action, if developer very much diluted, destroys an otherwise good cloud effect. We had considerable trouble lately, through this cause. Will kindly say if you consider pyro all right for purpose, and if not, hydroquinone a better, cleaner, and more satisfactory developer for commercial work. Also, we should be obliged by you can recommend of hydroquinone for plate-developers.

usually an advantage to use a developer giving fairly good results when making cloud negatives, and our experience is that containing, say, 3 grains per oz.) and hydroquinone are suitable for this purpose. We should usually prefer pyro hydroquinone for commercial landscape, as it is more amenable effects when required, but the choice of developer is largely a matter of personal preference. A hydroquinone formula we have used and would recommend for general work is the second on p. 7 of the "Almanac," 1908.

TERY.—1. I propose erecting a studio. It is to be 26ft. by 12ft. West light, I think, is preferable to east, don't you? 2. You advise ground glass for top and side lights, lean to, or roof?—B. STANLEY.

There is not much to choose between the two aspects, though much may depend upon surrounding buildings. 2. Ground glass will be good, though plain will answer the purpose as well, and can be used with thin muslin, or tracing linen, blinds. 3. As the studio is very much divided as to which is preferable. With a roof the studio can be glazed on both sides, and the light used in the fore part of the day, and the east the later part. If you refer to p. 635 (August 23) of our volume for last year you will find an article that may help you.

OUT.—The print sent is not from a process block. It is from an intaglio plate in a machine. The process of producing the pictures is not published, and the firm that is working on the details as their trade secret. The print has been sent to you as requested.

RY.—I should be obliged if you would give me advice on lighting. I am about to take over a studio, which is 25ft. by 12ft. have a 12 by 12 camera (Forward), and am wanting a lens that I could use for busts, full, and three-quarter

figures and groups, so that with stopping-down would cover 12 by 10. What focus in lens and what kind of lens do you suggest?—NETTA.

The lens best adapted for bust portraits would scarcely be the best for 12 by 10 groups in so short a studio as 25ft. The most generally useful, under the circumstances, will be one of about 15in. focus, working at an aperture of about f/6. If the studio were longer we should advise the next larger size.

REPRODUCTION FEE.—The winner of a 25-mile cycle road race has received a letter from the makers of the cycle he rode congratulating him, etc., and a request that he should have his photograph taken to be reproduced in their 1909 catalogue. I am not charging him for taking his photo, as the cycle firm say he is to instruct his photographer to send the bill in to them. What can I charge—the usual fee for reproduction for advertising purposes, or only my usual price for taking photographs to order?—J. A. G.

If your idea is that when taking the photograph, in the circumstances as stated, you will possess any rights as regards its reproduction, let us say that you are mistaken. You have none, and, therefore, it seems to us that you should charge your usual price for such outdoor work. Really we think you are in a better position to decide than we are.

OSBORNE M/C AND OTHERS.—We will reply to your queries in our next issue.

A. S.—The reply appeared in our issue of July 24. See the rules at the head of this column.

COMBINED BATH.—1. Can you give me a combined bath formula for rich chestnut tones? I have tried borax (enclosed card), and cannot account for yellowness. It was a bath freshly made. 2. Will combined baths keep?—COMBINED.

1. A good bath is:—

Hypo .....	8 oz.
Ammonium sulphocyanide .....	1 oz.
Lead nitrate .....	175 grs.
Alum .....	350 grs.
Water to .....	20 ozs.

Dissolve the hypo in the water, add the sulphocyanide, then add the alum dissolved in a little water and also the lead, and add to the hypo. Heat the mixture to 120deg. F. for ten minutes. Allow to cool. For use take:—

Stock solution as above .....	10 oz.
Water .....	10 oz.
Gold chloride (from stock solution) .....	3½ grs.

The yellowness of your print appears to point to an overworked bath. 2. Certainly, but there is danger in using a bath deficient in gold.

X. Y. Z. (Bombay).—1. Certainly; if you shorten the focal length the camera extension must be likewise shortened. There is no ready way of getting over this. 2. Yes, such long focus lenses are quite unsuitable for the majority of subjects. About 4½in. is the best general focal length. 3. They are very satisfactory for general transparency work, but the grain (not unduly pronounced) is, of course, more in evidence in the stereoscope.

ENAMEL.—Through the stopper of the bottle being left out, or its being blown out, the solvents of the collodion have evaporated. The thick mass in the bottle may be redissolved by the addition of fresh ether and alcohol, but they must be very strong, as probably the mass, unless it be quite dry, contains a certain quantity of water, and, therefore, if weak solvents were used, the collodion would yield a crapy, and perhaps opalescent, film. If the quantity you have is not large it will scarcely be worth while to attempt to redissolve it. It will be more economical to purchase fresh.

ARCHITECT.—We agree with you that you would be perfectly justified in rejecting the copies. The cause of the distortion at the margins is due to the plans being copied by a lens that was not rectilinear. Probably one-half of a rectilinear was used, as the photographer had not a lens of sufficiently long focus, when used intact, to copy the plans the size required, and therefore employed a single lens for the work.

BACKGROUND.—I want a light background or two for vignettted portraits, only occasionally. Will you please tell me how I can

make them? I may say that I should like a little clouding or shading at the lower portion similar to those sold for the purpose by the dealers. I shall be glad if you can enlighten me, as I cannot at present afford to lay out money.—**IMPECUNIOUS.**

A sheet of brown paper makes a good background for vignettes, and the clouding can be easily done by anyone by simply rubbing on powder colour with a large stump or a piece of rag. Brown paper suitable for the purpose, and about 5ft. wide and of any length, may be had from any of the large furnishing warehouses under the name of "carpet paper." Some of the large stationers also keep it, and it is very cheap. Some is of a grey colour, while other is brown. The grey will be the best for you, if you can get it, but it is not so generally stocked as the brown.

**TOURIST.**—No passport is necessary, nor is a permit to take photographs in Belgium. But keep in mind that you must not take photographs in the vicinity of fortifications—that is not permitted in any country, even in this. You will have no difficulty in getting your apparatus and plates through the Customs. The old towns of Belgium are excellent places wherein to spend a couple of weeks' photographic holiday.

**INVENTOR.**—You are quite wrong. By obtaining a provisional protection you will not be entitled to style your invention "patent" when you put it on the market. If you use the term patent before a patent has been granted you will render yourself liable to a penalty not exceeding twenty pounds. You, however, can use the term "patent applied for" until the patent is granted.

**BREAKAGES.**—I shall feel indebted to you if you will be good enough to enlighten me on the following: I employ several female assistants, and they seem, one and all, very careless. They are continually breaking things—dishes, bottles with solutions, negatives, etc. A week or two ago one upset a measure with about seven shillings' worth of gold solution, just dissolved, and about the same time another smashed a porcelain dish that cost ten and sixpence. I told them they must pay for them, and that I should stop two shillings a week until the amount was paid. This I did last week. On Monday the father of the girl who broke the dish came and demanded the two shillings I had stopped from his daughter's wages, saying that if it was not given he would summon me in the County Court for it. If he does, can he recover?—**S. R.**

We believe he can. Accidents will happen to all, and the employer has to bear the loss, unless he can prove that the damage was wilfully done, or unless he has a special agreement with the employees that they are to pay for all accidents they may meet with.

**TRANSFER OF LEASE.**—I am in treaty for the purchase of a business which is a somewhat old-established one. The present owner of it has a lease of the premises which has nearly two years to run, with the option of renewal for another seven years. The landlord will transfer to me if I buy the business, which I shall do if we can come to terms. The lease is a repairing one, and, so far as I can see, the premises, particularly the studio, are in very bad repair. What I want to know is this. If I take the place now, do I become responsible for the dilapidations already existing, or only those arising during my actual tenancy?—**ONE IN DOUBT.**

If the lease is transferred by the landlord to you, you become liable for the present dilapidations as well as those that may arise during your occupation of the place. This is a fact that you should take into consideration before you complete the purchase, and make allowance for it in estimating the value of the business to you. To maintain old premises in good repair is often an expensive item.

**BURNISHING CARBON PRINTS.**—Please tell me if it is possible to burnish carbon prints, as I have been told it is not?—**CARBON.**

Carbon prints can be burnished the same as other prints, but care must be taken that they are perfectly dry before they are put through the burnisher. Also that they are well lubricated.

**O. P. Q.**—For a studio with the aspect of yours, either dark blue or a rather pale green will be very suitable. The glass may be obscured by stippling over, on the inside, with starch paste mixed with a little whiting. This is preferable to paint, as it can be easily cleaned off when the sunny season is over.

**T. BOWER.**—The reason why so many of your prints go like those sent in so short a time is in all probability due to their being

toned in a combined bath after it has been exhausted of It is for this reason that the combined bath is not to be mended.

**WARDER.**—We have no means of judging if the mounts are of the trouble without submitting them to tentative which we have not time to do. However, they seem to be of quality, and we are not inclined to suspect them, and reason: One of the prints sent, which is yellow, bears unambiguous evidence of imperfect fixation, and others may be like it the evidence is not so palpable.

**OPERATOR.**—If you can see the markings on the plates when they are in the dark slides it is clear that your employer should blame you for the defective negatives. It does sometimes happen that mechanical defects are found in plates, but we must not be misled by such instances as are rare.

**SWINDLE.**—What you say in your letter may be perfectly true, but we have little doubt it is. But we cannot insert it, as your name being appended to it. There is such a thin line between a libel law in this country, and the insertion of your letter, that it is sailing very close to it.

**SECRET PROCESS AND PATENT.**—I have been working a process for four or five years, which I have treated, more or less, as a secret. The method of producing certain results in an easy way. It has been fairly remunerative to me. The other day I showed the whole thing for a small fee, and when I had shown it he said the thing was patented a couple of years ago, and could be stopped from working it in the future. It seems as if I was working the process between two and three years before the patent was taken out, that I shall now be compelled to stop it up. Can you give me advice as to what I can do with the patent?—**HANTS.**

You can do nothing with regard to the patent, and the reason why you should, even if you could. Simply going the process as hitherto, as the patent cannot stop the patentee should attempt to do so, all you will have is "prior use."

**CARBON TRANSPARENCIES.**—I have been making some carbon transparencies for enlarging from, using the special transparent paper. They are all right, except that they are all more or less with peculiar small markings like the one sent. The thing about the marks is that, although they show so when looked down upon, they show little, or not at all, when looked through. Can you kindly tell me how to get rid of them?—**WALTER W.**

The markings are what are generally termed "damp marks," though it is a little doubtful if damp has anything to do with them. Be that as it may, there is a very simple way of getting rid of them. If the transparencies be coated with plain white ink, the marks will disappear, both by reflected and transmitted light.

**R. H. C.**—The collotypes sent are certainly not of a high quality, as the printers allege, may be due to the negatives being by you. It is impossible for any firm to produce good collotypes from inferior negatives. If you have to defend the case in the County Court you must prove that the work is not so bad as the negatives are capable of yielding. If you are a member of the Professional Photographers' Association, it is one of the cases that they can no doubt settle for you without litigation.

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## SUMMARY.

Death of Mr. F. H. Wenham took place on Monday last (P. 617.)  
**NEW METHOD OF SULPHIDE TONING.**—Mr. Welborne Piper has put out a process which allows of the colour given by the usual process being modified with certainty, and without risk of permanency of the result. Formulae and directions are given (P. 617.)

Referring to Dr. Stenger, who has recently made some experiments there is no advantage in using the acid diamidophenol developer with the idea of more safely developing panchromatic plates in ordinary red dark-room light. (P. 617.)

Necessary precautions in regard to making the amidol developer are mentioned on page 614. If too much amidol is suddenly added to sulphite solution the result may be an unworkable developer.

Teaching formula for the bromoil process, consisting of potassium ferricyanide and lead nitrate, has been recommended by the author. (P. 615.)

Methods of travelling photographers undertaking photography at low prices are instanced by the copy of a recent circular from the schools. (P. 615.)

Autochrome filter possessing advantages in Autochrome photography of the patents of the week, which include also a method of developing stereoscopic negatives and of copying from books. (P. 625.)

Port contemporary has recently given some hints as to the photographic trade in South Africa. (P. 625.)

A recent photo-mechanical patent describes a process by which three to print multi-colour prints from a single plate by means of three separate "make-readies." (P. 624.)

Elementary notions as to the use of lenses may be recommended to some of our querists. (P. 622.)

Of the points which stand in danger of being neglected in the use of record and survey photographs are the subject of an article on page 615. The documentary character of such photographs cannot be too forcibly kept in mind.

## EX CATHEDRA.

### Scale Focussing by Touch.

The "Photo-Era," in commenting on the necessity of being able to set the focus of a hand camera quickly and without close inspection of a printed or engraved scale, mentions that a Mr. Julian A. Dimock has patented a device to which he ascribes much of his success with leaping tarpon, wild turkeys, bucking bronchos, angry crocodiles, canoes shooting rapids and other rapid-action work. In his camera the focussing-screw projects through the side of the camera and is controlled by a milled head, which is held between the thumb and middle finger of the left hand. The forefinger rests upon a pointer which projects radially from the milled head and springs lightly into notches cut in a raised disc which surrounds it. As each of these notches indicates a known distance, for which the lens is focussed, the hand of the photographer soon learns to conform automatically to his judgment of the distance of the subject. When, in tarpon fishing, the distances are marked on the line by ribbons, it becomes easy to preserve the exact focus. So, when the fish leaps out of water, the camera is ready for him. The inventor says that often, when birds have flown up near him or fishes jumped unexpectedly, he has turned half round, levelled his camera, and made successful shots while his focussing-hand acted instinctively.

\* \* \*

### Permits to Photograph at the Franco-British.

To the recent announcement as to the charge of one shilling per day for permission to photograph at the Franco-British Exhibition may be added the intimation that the office where such permits are obtainable will be found at the Wood Lane entrance just inside the doors, but outside the turnstiles. The small office, where application should be made, will be seen next to the season-ticket turnstile on the extreme right.

\* \* \*

### The Lesson of the Franco-British.

When all the excitement of Marathon races, trips on the Scenic Railway, and so forth has evaporated, there should be a residuum of educative matter in the minds of sightseers who are neither babes nor bloated aristocrats. One walks through all the galleries of art and commerce in the White City, recking little of the impression their contents are making, and perhaps even believing oneself to be just a little bored now and then; but there is a subconsciousness at work busily taking note of everything that enters by the external senses; docketing and pigeon-holing sights, sounds, and smells, whether the outer man, the mere sightseer, will or no. And first of all the prime fact that stands out beyond all others, is that the exhibition as a whole is a marvel, even in these wonderful days. Why is it

a marvel? Because it has the two concomitants of things that reach sublimity, namely quantity and quality. If this great "White City" with all its effects were merely pasteboard, mouths would still open in wonder at its greatness and beauty. Its size would overawe. Mere vastness—as court gives way to palace and palace to garden and garden to the stupendous erections of steel for mere sixpenny rides—constitutes the first impression of grandeur upon the mind. Yet that is only half the effect. Painted pasteboard would leave us at this point, having nothing more solid to offer; but as hour passes hour another impression grows, which is that all this display is superlatively good and lasting considered as a season's exhibition. The common remark is, "Surely they won't pull all this down—what a pity it would be!" Therein lies evidence of the fact that after vastness has done its work comes thoroughness and excellence to call up respect in the beholder. That is the other half which fits the first and makes a complete and complementary impression of sublimity.

\* \* \*

#### The Display of Goods.

There is one great lesson here—namely, if it is desired to make a great appeal to the public, there must be something tangible behind the surface seductiveness. There is brief prosperity in the painting of an enormously fat woman on the outside of the booth if the penn'orth within is only moderately adipose; or to depict a "mermaid" which turns out to be a queer fish, stuffed and smelling of preservative chemicals. The public will desert you if you "have" them. At the "Franco" nobody is disappointed; on the contrary, season tickets are well used. In the matter of display commercial effort has surely never gone further. Firms who have good things to sell have evidently fallen in with the ideas of thoroughness that characterise the place, consequently one is amazed at the taste and skill shown in the very cases and stands of the exhibitors. Especially is this noticeable, on the whole, with the French firms. The Gallic temperament for nattiness and charm of idea has good ground here for exercise. A peep into the Colonial palaces proves that there the leading idea was to include everything appertaining to the colony—to crowd it all in, whether it would be well seen or not. But potted food is poor decoration at the best, and one feels that things less obvious and more interesting might have had more chance had Colonial enthusiasm given them more room. The French exhibits induce none of that embarrassment and revulsion which a clamorous mass of things inevitably does. A few jewels are displayed in a kiosk-like show-case furnished with white leather in flat spaces, wherein are indented little shapes to fit exactly the gems offered to view. With such respect and expansiveness shown to the articles, we are quite ready to believe that their value, as indicated, runs up to as much as twenty-five thousand pounds each. Another firm displays jewellery upon a setting which curves gently outwards from perpendicular to horizontal, and is covered with velvet tastefully graduated and tinted in a stencil pattern, and upon this the jewellery is made the utmost of. But, alas, what dress is all this wealth to the weary spirit! In the interior of one of these priceless stalls one sees a peep of an old lady fast asleep, and a young one on the borders, who slowly raises her heavy lids under the inner conviction that she is caught napping.

\* \* \*

#### Art at Shepherd's Bush.

Something ought to be said of the pictures and statuary also, for surely no other examples of skill should be so productive of lasting impressions in the minds of photographers. The posing of the French sculpture is perhaps too "instantaneous" to offer many lessons to the profes-

sional portraitist. Indeed, it may be said to be accurate and squirmy for the most part. The Gallic temperament is an emotional one, and both in sculpture and painting that which is exciting to the senses seems to supply the motive most often. Clever to the last degree it is undoubtedly; but, in the present collection at any rate, the French has in it less of art for art's sake and more of the literary aspect. Death agonies and the finished furnish favourite motives. But is art, as art (not as telling) any the better for causing us flooded eyes and constricted throats? In landscape the Frenchman is quick and happier. The great Troyon, the little Corots, the pastoral beauty beside the melodramatic griefs of the figure painters. The British section strikes one as being the finest in its more and most modern examples. One of the deepest impressions is of the astounding truth of sun in Friedenson's "Bay" picture. The photographic microscopy of Dice's trees in his "George Herbert" also is in the memory: what appalling painstaking! Another thing that leaves its mark is J. J. Shannon's "Phil Esq." in "pink," whilst his nose and scabs are in crimson. For honest character this portrait outdoes the provoking Cromwell. Two or three other things are borne in upon our minds; one is that the "utter" school of Mid-Victorian times fortunately did not come to stay. The Rossetts here are not the finest. The Burne Joneses invoke for a great unsatisfied Why? The nymphs of Waterhouse, more than sisters even, they are twins, triplets, centaurs, and they haven't a happy look amongst them. Herlihy has for ever left behind him the possibility of doing anything else a quarter as good as his "Last Muster." "The Tide" by Walter Bayes ought to have made a reputation much greater than it is. Sir George Russell, perhaps after all the best of British portraitists, Sargent, whose triple portraits are here in all the astounding perfection of skill, treats his sitters as Walter treats his voice parts: they are only a part of the voice and all dodges of "bringing out," "setting off," "singing to," etc., are swept aside into limbo.

\* \* \*

#### The Effervescing of Amidol.

Sometime ago we described a peculiar effervescent effect produced by the addition of stale amidol to a solution of sulphite and metabisulphite. A recent experience with fresh diamidophenol has, however, shown that this effect is due to the deterioration of the developing agent rather than one due to the sudden addition of a large excess of the reagent. The sulphite solution used consisted of one ounce of sodium sulphite and one drachm of potassium metabisulphite in five ounces of water. Usually the amidol is dissolved in this quantity of solution and then five ounces of water are added to bring the total bulk to twenty ounces. In this case only four ounces of developer were required, and, therefore, one ounce of the stock solution was taken, and the diamidophenol was shaken out of the bottle without weighing. As the reagent was a large clotted mass of the reagent, of about the bulk of one ounce of water, fell into the measure. Immediately a violent effervescence and a strong odour of sulphuric acid, though the stock sulphite solution used has the peculiarity of being quite odourless. The resulting solution was strongly acid and had no developing power. By way of experiment, we then added more of the stock sulphite solution so as to restore the approximate correct proportions. The smell instantly disappeared, even though the solution added contained metabisulphite, and on trial the developer worked as well as could be required. Evidently, then, the effervescence and the loss of developing power was due to the excess of diamidophenol and possibly the failures that some workers meet with when using amidol are due to similar causes.



the effect does not take place when the sulphite is added before adding the amidol, therefore if a solution of amidol is required it is best to dilute before adding the dry developer.

**Amidol.** In the current issue of the "Photo-Gazette" there is a note on the use of this paper for the production of the surface ready for printing by the oil process. Although no reference is made to the work of Mr. Welborne Piper, to whom this is due, the writer's object appears to be to prescribe a solution which can be made up without the use of any auxiliary solution. For this purpose he recommends the following:—

Potass ferricyanide .....	5 gms.
Lead nitrate .....	5 gms.
Water .....	100 ccs.

The bromide print fixed and washed is placed in the solution and at the end of about ten minutes bleaches the print to one of faint reddish colour on a yellow ground. No further action is noticed the print is well washed out an hour, during which time the image almost completely disappears, only a few greyish traces remaining. When ready for pigmentation, although, if left some time in this operation, the image returns to an appreciable extent, no doubt owing to the oxidation of the lead salts in the light. M. Coustet advises that after pigmentation the print should be fixed in hypo in order to remove all the lead and silver salts and prevent subsequent darkening of the image, but it is thought that if sufficient washing after printing has been given there should be no need to make this the hypo bath at the risk of damaging the pigment. A writer in the "Photo-Revue" has exposed an oil print for a whole day to sunlight without any fading of the image taking place.

**Development.** A week or so ago we published details of a patent taken out by P. L. V. Gaultier, of Versailles, for what amounts to the oil printing to photolithography. Briefly it is made on paper coated with gelatine and inked with bichromate. After washing it is inked with litho ink, applied by a roller, and then the image is transferred to stone or zinc. Up to the present stage it is literally the oil printing process described by Mr. Rawlins, even the inking process by roller being new, while the idea of transferring the image to stone is one that has been suggested and experimented upon before. When litho ink is used it is easy to produce a duplicate of an oil print by simply rolling the print in contact with a sheet of plain paper. We have experimented on these lines, and by re-inking the print we have produced several copies. Whether the process is to be used on stone has proved practically useful or not is not known, but the idea is so obvious that it has already been tried by photo-engravers.

**Photography.** When sufficiently fine solid particles are suspended in a liquid, careful examination under a high-power microscope shows that the particles are in rapid motion, the motions being styled "Brownian" from the name of their discoverer. According to Einstein's theory regarding these movements, they should vary in velocity as the square root of the absolute temperature, the truth of the theory is not very easily tested on account of the difficulty of measuring the motions. Dr. J. J. Diddig has called in the aid of photography to test the theory. By taking two photo-micrographs at an interval

of 1-10th second he was able to measure the movements. It is stated that a falling shutter was used with two holes, which gave two 1-40th second exposures 1-10th second apart. Apparently both exposures were made on the same plate, and the measurements were made on enlargements. The material studied was cinnabar suspended in liquid and allowed to stand for a week. A drop of the top layer of liquid was then used for the experiment. It appears that the results served to confirm Einstein's theory. If it is possible to secure photographic trails of the movements similar to star trails, it appears to us that rather more definite results should be obtained, as the whole course of the movement could then be measured, whether straight or curved.

### Scholastic Photography at 2d. a Time.

A particularly choice specimen of the circulars by aid of which the travelling photographer plies his trade may be reproduced here as showing the lamentable cheapening of the photographic portrait by persons who, if we may judge from their command of the language, are not drawn from the flower of the English race:—

#### NOTICE TO PARENTS.

We beg to inform the Parents of the scholars that with a view to the formation of the Photographic Scholastic Tableau, our operators will, on their visit, gratuitously photograph their children separately or in groups with their brothers and sisters, and we therefore beg them to have the kindness to dress their children suitable for the occasion.

We on our side, in appreciation of the parents' kindness in this regard, have decided that the pupils who bring on the day of the operation the simple sum of 2d. will receive the simple proof of their personal photograph, similar to that which will be provided for the Scholastic Tableau.

The families who might desire to receive this proof perfectly finished, mounted and retouched, will only have to pay on the day of the operation the simple sum of 4d., that is to say just the price of the workmanship. The parents can also have these photographs in larger size on Postcards at the price of 1s. 8d. per ½ dozen and 2s. 3d. per dozen.

The parents have, therefore, every interest in availing themselves of this exceptional occasion. The photographs delivered are unfading.

Such work as this has to be done by over-worked, under-paid help, and this feature of it, we fear, supplies the best ground on which a local photographer can enlist the sympathies of his townspeople in his struggle against such competition.

### RECORD AND SURVEY PHOTOGRAPHY.

It should be said at the outset that no disparagement is intended of the unselfish and invaluable services already rendered by the various photographic survey associations, if some slight suggestions are offered in the direction of making their work still more systematic, effective, and permanently useful.

These associations are formed for a definite purpose. They exist avowedly to preserve for posterity a clearly pictured presentment of the architecture, antiquities, topography, and customs of our own times, together with other facts of scientific interest, and to prevent any avoidable loss of useful historical material. A second aspect of such collections of photographs is their utility for present-day reference. From numerous prints to be noticed in county museums, and from the inspection of various local exhibitions of record photographs, it would appear that the primary intention which should underlie such work is not always kept strictly in view.

One reason for this is the influence of pictorialism. In record work the pictorialist is at a disadvantage. If he would succeed in this direction he must throw overboard all his cherished ideals of composition, and be content to proceed in an unblushingly realistic and matter-of-fact

way. Many prints miss being satisfactory records solely because their producers have failed to divest themselves of their pictorial prepossessions. As an example, met with at a recent county survey exhibition, an ancient church with a curious lych gate had been photographed from a standpoint some distance away, looking down a leafy avenue of trees whose branches met overhead in a sylvan arch. Here, in consequence of the worker's unwillingness to lose a pleasing setting, the real objects of interest—the church and lych gate—were shown on a small and unconstructive scale, besides being partially hidden by foliage.

To quote other instances that will no doubt have been noticed by those familiar with the usual run of survey photographs, we find quite frequently that places of interest, such as cathedrals, castles, old cottages, etc., are allowed to take an entirely subordinate and distant position in their respective pictures, while an enormous amount of foreground space will be occupied by an attractive rendering of a flower garden, a vista of altogether commonplace cabbages, or even an expanse of bare open common. This, of course, is entirely due to the pictorial aspect of the work having been permitted to overshadow its practical side. It needs no argument to see that one flower garden is very much like another; that cabbages are scarcely liable to great variation as the ages pass, still less to ultimate extinction; while a stretch of undulating grass certainly presents no features worth transmitting to posterity. The sole excuse, from a record point of view, for taking the photographs was to show the respective buildings, and this could have been done much more effectively by getting closer, and ignoring the uninteresting surroundings. As it is, posterity will only be able to peer through magnifying glasses at the softened outlines of far-off spires, roofs, or battlements, as the case may be, while marvelling greatly at their predecessors' apparent lack of foresight.

Recalling some more random recollections of survey prints, an extremely picturesque rendering of a beech wood with sunlight streaming through and across the tangled branches might not be at all out of place at the R.P.S. exhibition, but is of doubtful value otherwise; the banks of rivers and streamlets with reedy or rush-covered foregrounds; roadside ponds with trees and reflections; heaths and furzy commons, are things little likely to vanish from the face of the earth, and of no urgent necessity as records. These remarks must not be taken as condemning those photographs which show some distinctive natural feature or unusual physical configuration of any given locality. These come in quite a different category and are well within the scope of record work.

Church interiors are favourite subjects, and it is curious to see how often the worst point of view is chosen, from an architectural or ecclesiastical standpoint. There are comparatively few churches in which the west end is more worthy of record than the east or chancel end, yet in quite a number of cases we find that the lens has been pointed away from the chancel, to obtain a view of a perfectly blank west end and a long perspective of ugly modern pews or chairs, while ignoring in all probability a beautiful and richly decorated sanctuary with elaborate windows. Even where the west end is deserving of special attention, as having an ancient singers' gallery, font, canopy, or other notable features, the chancel will most likely possess attractions of its own, and should be taken also, if possible, at close quarters. Details as to the altar furniture and church decoration of bygone years are sure to appeal to future generations. With regard to windows, why are these so frequently depicted as a mass of white, devoid of their delicate tracery and wealth of embellishment? The advantages of backed plates seem to be ignored by a very large number of workers.

The supreme importance of detail in record photographs

cannot be too strongly insisted upon. Any lack of detail is a serious drawback to the utility of the picture. Nevertheless, a casual examination of the average collection will disclose many prints which verge perilously on fuzziness. We see photographs of interiors, evidently taken with a large aperture, in which near objects are sharp, while those in the background are quite out of focus. Whether done with pictorial intention or not, is a fatal error, for a record print should show everything that is to be seen—ugly or otherwise. With such subjects the lens should be sufficiently stopped down to get all the different planes in focus, unless there is a difficulty at the time of exposure required. Inexcusably light prints, which means lack of detail in another guise, is not so as it should be.

With architectural and archæological subjects it is a mistake to include too much in the picture. A single object or detail treated by itself, on a recognisable scale, is of more value than a profusion of ornament so small and jumbled together that no definite impression is conveyed, or many objects which the eye tries in vain to separate from each other. Clear, distinct photographs of ornamental or decorative detail have a genuine value, especially if, as seems to be very seldom the case, they contain something that will give an indication of measurement or scale.

One would like to see greater attention paid to classification, grouping, and indexing. At present a number of photographs dealing with the same place or subject sometimes be found separated from each other, and require much trouble to gather together for examination, even if the necessary clues as to their existence can be obtained from the index. Key photographs indicating relative positions occupied by various portions of a subject which has been taken in sections, and small photographs pointing out the standpoints from which different portions of an identical place or object have been secured, might in many cases be prepared with advantage.

If our record and survey collections are to be really useful, both now and hereafter, easy of reference, and free from an overwhelming embarrassment of irrelevant material, steps will probably have to be taken to define more exactly what a record photograph is, or should be. Attention might be drawn more frequently to those things which are really worth recording, and of which so few photographs are extant; especially to local events and happenings likely to be of historical, antiquarian, or scientific consequence. The argument from analogy can be profitably applied. Let us ask ourselves what kind of pictures or documents we should be most grateful for, if our ancestors had possessed similar means of leaving them. In all probability the answer to this question will tell us at once the kind of record that we may most usefully make.

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**OIL AND BROMOIL PRINTING.**—The booklet by M. R. Demachy and J. A. Sinclair, recently published at the request of the latter's firm, Messrs. J. A. Sinclair and Co., 54, Haymarket, London, having completely run out of print, a new edition is now in preparation. It will contain also the necessary instructions for the "Bromoil" process in the shape of an article by Mr. C. H. Heath. The booklet will be ready by the time these lines appear, and application should be made to Messrs. Sinclair for it. Price 6d. post free.

**THE CURRENT ISSUE OF "The Prism,"** which is now issued in an enlarged form, deals with the subject of field glasses, with special reference to the Zeiss Stereo. The article is well illustrated, and of its subject in a popular and interesting manner, and may be obtained, by sending a penny stamp to cover cost of postage, to Messrs. A. E. Staley and Co., 19, Tavistock Inn, Holborn, London, E.C.



# NEW METHOD OF CONTROLLING THE COLOUR IN SULPHIDE TONING.

Formulae for the sulphide toning of bromide and gaslight prints have been multiplied a good deal of late, but without one being produced which is an actual practical improvement on the now generally used mixture of potassium ferricyanide and ammonium bromide. In the following article, however, Mr. Welborne Piper describes a new departure in sulphide toning which should provide the much-needed means of making modifications in the tone given by the usual process. It possesses the commendable feature that it does not involve the use of mercury salts, or other substances which vitiate the undoubted permanency of prints toned by the sulphide process pure and simple.—Eds., "B.J."]

It is now a recognised fact that the brown image produced by sulphide toning is not composed of simple silver monosulphide, but is a colloidal compound soluble in hot water. From this it may be argued that the exact colour obtained should be more or less under control, and could find any way of either hindering or accelerating the formation of the colloidal compound, and an obvious experiment is the hardening of the gelatine before the toning process. Tests, however, show that hardening agents such as chrome alum or formalin have no effect on the colour; therefore I have recently turned my attention to the use of reagents that have a special hardening action on the gelatine in the vicinity of the silver image. I tried the usual solution as a bleach, but with no success. If anything, the resulting tone was inferior to that produced by ordinary methods. I tried preliminary baths of bichromate, with numerous variations in the time of immersion and duration of washing, and followed by various bleaching solutions, but still the modifications obtained were only trivial, and no real improvement was effected. In these experiments, however, I noticed that there was often a difficulty in getting the print after a preliminary soaking in bichromate, especially when the bichromate was not washed out, and to get over this I added a soluble bromide to the bichromate bath. After preliminary soaking I added ferricyanide to the bichromate and the bath, and so turned it into a bleacher. The final result was rather astonishing, for it turned out to be a quite cold tone, or just the colour I had been aiming at all along. Numerous subsequent experiments show that the bromide in the bath is essential to the effect, and so possibly the final result is due to the action of bromine on the gelatine, for it is well known that bromine water used alone as a bleach gives a rather stronger tone than the ordinary bleaches, and also that bromine gives an insoluble precipitate in gelatine. The exact final tone obtained by the new process varies with the time of preliminary soaking, and the result is perfectly under control. After testing many variations, I have fixed on the following as the best procedure to follow.

1. Soak the bromide print in water until limp, and then immerse in the following solution:—

10 per cent. ammonium bichromate ..... 5 oz.  
10 per cent. ammonium bromide ..... 5 oz.

2. The print must be kept rocking during this immersion, otherwise uneven markings will result, and to produce a cold sepia the time of immersion must be six minutes. Shorter periods give intermediate tones, but six minutes give as cold a tone as seems to be desirable. When the print is soaking, prepare for the next stage by taking 10 oz. of 10 per cent. potassium ferricyanide solution and adding to it

2 drachms of ammonia .880. It is desirable to have this solution in readiness, as it is unnecessary to wash between the soaking and bleaching of the print.

When the time is up, pour off the A solution and add to it the solution of potassium ferricyanide. Rinse the print once or twice in water, and then bleach it in the modified solution. The result is not very light coloured. It is a fairly strong brown, but the action can be considered to be complete when the last trace of blackness has disappeared. Next, wash in running water for about ten minutes, and then tone for five minutes in a 5 per cent. solution of sodium sulphide. Pure sulphide from a reliable manufacturer should be used, but it does not appear to matter whether it is of the crystalline or fused variety. The former gives a very slightly colder tone than the other, but that seems to be the only difference.

The bromide prints should be fairly strong ones, and the best results seem to be obtained from clean vigorous negatives of the kind suited to P.O.P. This appears to be the case in all kinds of sulphide toning, but, so far as I know, no kind of negative will give by the ordinary process a tone that approaches the one obtained by the new process, excepting on a few exceptional brands of paper.

The method as described is suited to the preparation of one print. If a number have to be toned I simply make up two separate solutions. One according to the formula A already given for the preliminary soaking bath, and a second one for bleaching. The formula for the bleach is then:—

B. 10 per cent. ammonium bichromate ..... 5 oz.  
10 per cent. ammonium bromide ..... 5 oz.  
20 per cent. potassium ferricyanide ..... 10 oz.  
Ammonium .88 ..... 2 drms.

Solution A can be used for a number of prints in succession. B will lose power in time, and will then have to be re-mixed, but it will serve for a long time if the prints are rinsed very slightly before bleaching. Apparently it is necessary to use a bleach of this or of very similar composition, and the bichromate in B seems to be quite as important as the bromide in A. Why is not clear. The mechanism of the process is undoubtedly obscure, but in spite of this the results seem to be very certain, and the tones obtainable are of a very desirable kind.

The bleaching the print takes about two minutes. An alternative bleaching bath is obtained by adding 20 minims of strong nitric acid to 20 oz. of A solution. The final result is then a very rich brown tone, approximating to a warm sepia, when the preliminary soaking in A is six minutes. We can thus obtain either warm or cold sepia as desired, the exact colours varying with different brands of paper.

C. WELBORNE PIPER.

# THE ACID DIAMIDOPHENOL DEVELOPER FOR ORTHOCHROMATIC AND PANCHROMATIC PLATES.

In the current issue of "Photographische Chronik" the much-discussed question as to the effect of an acid amidol developer in depressing the red-sensitiveness of an orthochromatic plate to such an extent that development can be done in the ordinary dark-room light is made the subject of a contribution by Dr. E. Stenger, of the Charlotten-Technical High School. Dr. Stenger's experiments, of which the following is an account, were made in order to test the statement made by various writers as to this destruction of colour-sensitiveness, depression of general sensitiveness, and the effect of the developer to make good considerable errors in exposure.—Eds. "B.J."]

As the numerous colour-sensitive plates on the market to experiments of this kind might be applied, two brands were chosen on account of their widely known properties—viz., the "Perotto" green label plate and the "Perchromo,"

both made by Otto Perutz in Munich. These were selected on the natural assumption that orthochromatic and panchromatic plates from other sources would behave similarly. It was only in regard to the time of development that differences were dis-

covered (when developing with amidol) between different brands of plates. According to H. Reeb, all plates are not equally well suited for amidol development, as dichroic fog is apt to make its appearance when an excessive time of development is adopted, but in the following experiments a normal period has been the rule.

Simmen gives the following formulæ for the use of amidol:—

I.—Acid amidol developer, slow working.

Amidol .....	1 gm.
Sodium bisulphite liquor, commercial .....	4 ccs.
Sodium sulphite (anhydrous) .....	3 gms.
10 per cent. potass. bromide solution .....	2 ccs.
Water .....	100 ccs.

II.—Amidol developer of quicker action for under-exposed plates.

Amidol .....	1 gm.
Sodium sulphite (anhydrous) .....	3 gms.
10 per cent. potass. bromide solution .....	1 cc.
Water .....	100 ccs.

The acid amidol developer recommended by Balagny for Autochrome plates has about the same composition as Formula I. above. The acid sulphite solution of commerce is prepared, as is well known, by conducting sulphur dioxide gas into sodium sulphite solution. It is a yellowish strongly acid liquid with the characteristic smell of sulphurous acid, and contains sodium acid sulphite. The solution used in the following experiments had the specific gravity of 1.33 = 36 Beaumé.

Each test plate of the size of 9 by 12 cm. was exposed behind a paper scale photometer, and then cut into three portions, which were developed simultaneously under different conditions, fixed together in the same bath, and, after drying, measured in the Martens polarisation photometer. The paper-scale photometer consisted of strips of tracing paper, the transparency of which was such that exposure through any given portion had to be one and a half times as long as through the next denser portion in order to give equal densities. The relative times of exposure and the corresponding logarithms, as used for the graphical representation of the densities, are given in Table I.

TABLE I.

Number of layers of paper	12	11	10	9	8	7	6	5	4	3	2	1	0
Exposure number .....	8	12	17	26	39	59	88	132	198	296	444	666	1,000
Log $t : t_0$ .....	0.90	1.08	1.23	1.41	1.59	1.77	1.94	2.12	2.30	2.47	2.65	2.82	3.0

Experiment I.—Of the three sections of a "Perotto" plate (green label), the first and second were developed in rodinal, 1 in 20, the third in acid amidol, in each case for four minutes. Sections 1 and 2 were exposed during the whole time of development to the red dark-room light, whilst section 2 was developed in the dark. The dark-room light was purposely chosen fairly bright, and consisted of rays of wave-length from 640 to 720  $\mu$  with some green rays, and was placed at a distance of about 50 cm. from the plate. The development fog in the unexposed portions of the various plates was as follows:—

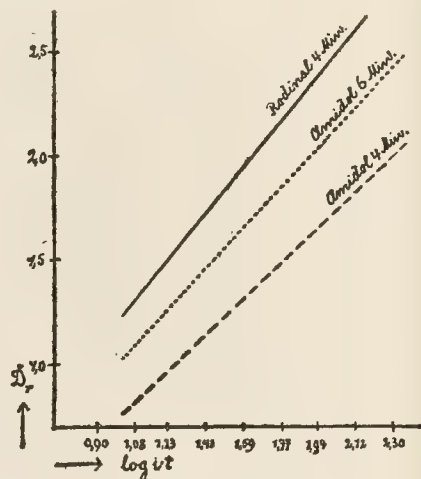
Rodinal used in dark-room light, .66.

Rodinal used in the dark, .48.

Acid amidol in dark-room light, .39.

The fog value is thus smallest in the case of acid amidol, but the measurements show that the time of development of four minutes is not long enough for the amidol developer employed. The plate could do with one and a half or twice as long in order to obtain the same density as that produced on the plate developed with rodinal. A portion of a plate, however, which was given six minutes in acid amidol developer showed, in the unexposed portions, a development fog of .51, which is more than that of the plate developed with rodinal in the dark. The value, however, of the plate developed for six minutes in amidol did not amount to so much as that obtained in four minutes with rodinal. In the case of equal densities for both developers the fog value was still more unfavourable to

the amidol-developed plate. This experiment shows that under the above conditions there is no advantage in employing acid amidol developer for orthochromatic plates. The graduation curves given in Fig. 1 show graphically the relative ad-



of the three developers, and correspond to the data given in Table II.

TABLE II.

Exposure numbers.	Log $t : t_0$	Densities.		
		Rodinal 1:20 4 minutes.	Acid amidol.	
			4 minutes.	6 minutes.
12	1.08	1.30	0.80	1.13
17	1.23	1.48	0.98	1.27
26	1.41	1.67	1.15	1.39
39	1.59	1.88	1.27	1.62
59	1.77	2.18	1.42	1.80
88	1.94	2.28	1.65	1.94
132	2.12	2.58	1.83	2.24
198	2.30	—	1.98	2.41

Experiment II.—A "Perchromo" plate (ethyl red emulsion) was cut up and developed on the one hand for four minutes in 20 rodinal with and without exposure to the dark-room light, and on the other hand for six minutes in acid amidol developed in the dark-room light. The development fog on unexposed portions was as follows:—

Rodinal in dark-room light, .93.

Rodinal in the dark, .61.

Acid amidol in dark-room light, .86.

Here again it was seen that the acid amidol proved of no advantage, as the fog was only very slightly smaller than that obtained with rodinal when using the ordinary precautions necessary in developing panchromatic plates.

Experiment III.—This experiment corresponded with the foregoing, with the exception that during the first two minutes of development with the acid amidol the plate was kept covered in order to give the solution time to exert its destroying action upon the sensitiveness (colour and general) of the plate. The fog values in this case were as follows:—

Rodinal, 2 minutes in dark, 2 minutes in dark-room light, .93.

Rodinal, 4 minutes in dark, .58.

Acid amidol, 2 minutes in dark, 4 minutes in dark-room light, .92.

This experiment is most unfavourable to the acid amidol developer, the fog being actually more, in spite of the shielding of the plate during the early part of development. In order to throw a light on the behaviour of the amidol developer during more protracted time of development the next experiment was made.



periment IV.—It was found that the protracted development is not really responsible for the extra fog. The test was as in experiment III., except that the third portion of the plate was given first two minutes in acid amidol developer and two minutes in the quicker acting amidol developer, No. 2, in both cases in the dark. The following were the results. Rodinal, 2 minutes in the dark, 2 minutes in dark-room light, .77.

Rodinal, 4 minutes in dark, .62.

Amidol I. and II., 2 minutes in each, in dark, .80.

The amidol plate thus gave, in spite of the use of the powerful developer, less fog than the plate treated with rodinal. It appears to be an error in the figures given by the author, amidol fog being .03 in excess of that given by rodinal.—“B.J.”]

periment V.—The depressing action of the acid amidol developer is to be ascribed, as stated by Simmen in the case of the chrome plate, to the acid sulphite contained in the solution. As therefore thought possible that a preliminary bath of sulphite would exert the desired action on the sensitive plate. For this purpose the ordinary commercial acid sulphite solution was diluted with ten times its volume of water, the plate developed therein for two minutes, then washed in the dark, and developed along with a second portion of plate which had

been washed for three minutes in the dark in 1 in 20 rodinal for 4 minutes in the dark-room light. The following were the results:—

Plate treated with sulphite solution, 1.06.

Washed and developed plate, .96.

Also when used in this way the acid sulphite is seen to give a slightly worse result than when it is omitted. The densities in both plates were the same as shown in Table III.

TABLE III.

	Fog.											
	Plate density for log $t/t_0$											
Plate after sulphite bath ...	1.06	0.98	1.05	1.16	1.25	1.36	1.44	1.69	1.85	2.00		
Plate after water bath .....	0.96	0.97	1.09	1.18	1.27	1.35	1.47	1.73	1.87	2.05		

It should be noticed that ethyl red, the sensitiser of the “Perchromo” plate, appears to be comparatively resistant to weak or strong solutions of acid sulphite. Aqueous solutions were decolorised only very slowly. “Perchromo” plates in the dry state, when placed in weak or concentrated sulphite solution, lost their colour more quickly by simple bleaching out in light than through the action of the acid sulphite. The unfortunate result of the experiments is therefore to show that for the development of ordinary orthochromatic or panchromatic plates acid amidol gives only negative results.

DR. E. STENGER.

## NOTE ON THE RELATION OF ASTRONOMICAL SECONDARY NEGATIVES TO THEIR ORIGINALS.

[A Paper in “Popular Astronomy.”]

The use of glass positives is a matter of every-day practice in the preparation of plates recording astronomical (and physical)

outlying nebulosity farthest removed from a nucleus, or other detail of low relative contrast, then it is the general practice to resort to local (chemical) reduction on the film of the positive.

There are, however, negatives of certain subjects in which it is not possible by this single remove to introduce sufficient contrast to clearly show the structure which can be traced with a practised eye, upon the original negative. In this event, it is necessary to make from the original a secondary negative,

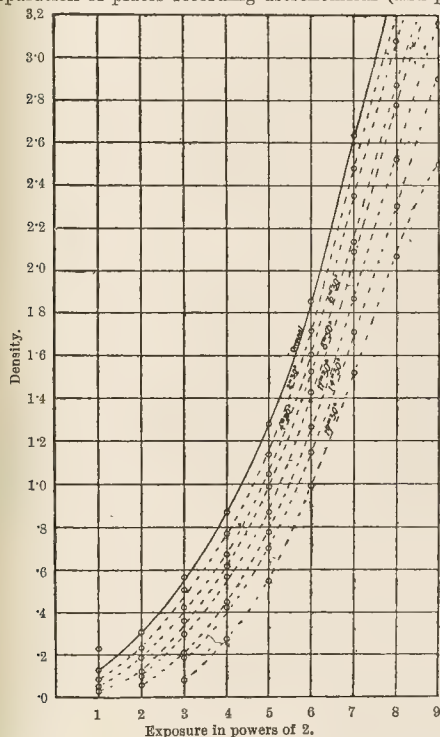


Fig. 1.

These positives are in many instances made directly from the original negatives, and, where the object is to direct attention to fine filamentous structure or detail, such as the

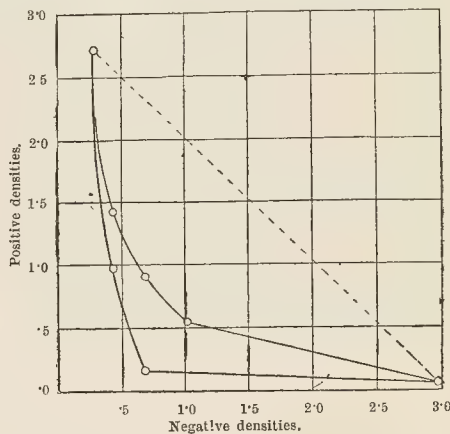


Fig. 2.

in which, by the minimum of exposure and the maximum of development (together with judicious chemical reduction), the relative contrasts are exaggerated. By such means one is enabled to render visible in the positive or subsequent engraving those particular characteristics which would otherwise remain merely records apparent to the eye of the individual privileged to examine the original negative.

It must, however, be evident that no matter what care is

taken, or how expert an individual may become in the handling of copying processes or reducing solutions, used either locally or in "flat" reduction, the resultant positive cannot but (under the circumstances) be utterly false in its relative photographic light values. The result is, that except for "form," the new negative or positive is neither a record of visual nor photographic relative intensity.

Further advance along the line of photographic plates does not promise a betterment of these conditions, because no matter

be suggested. This is more particularly the case where a photograph purports to be a record of scientific accuracy, in which relative photographic intensity holds a prominent place.

The alteration in the ratios existing between the densities of a photographic negative due to chemical reduction, was pointed out definitely in the classical research of Hurter and Driffield;<sup>1</sup> it is desirable, however, that a record be obtained embracing the gradual action of the reducer upon the p

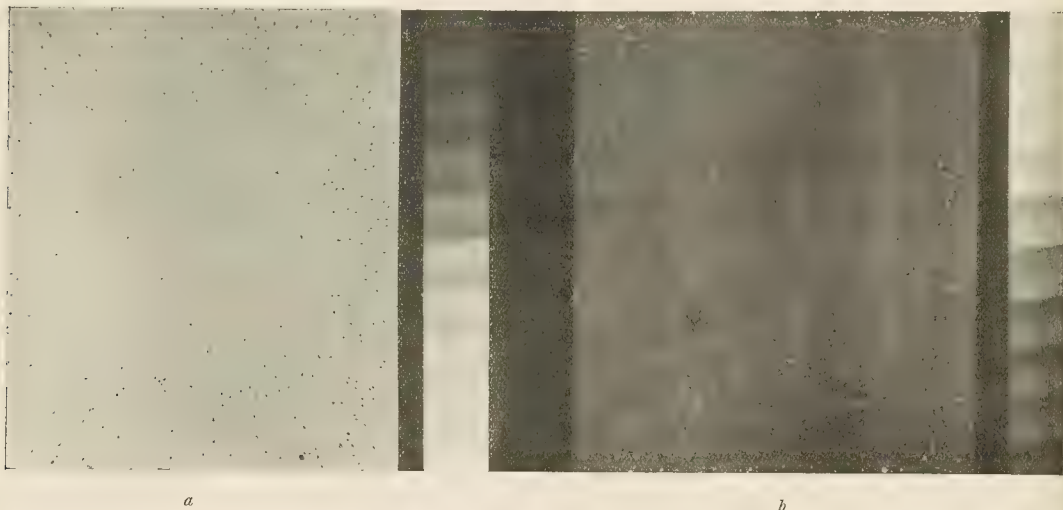


Fig. 3.—Black Hole in Milky Way. (R. A. 19h. 38m.  $\delta$   $10^{\circ}46'5''$ .) Change in relative light-values with increase in contrast.

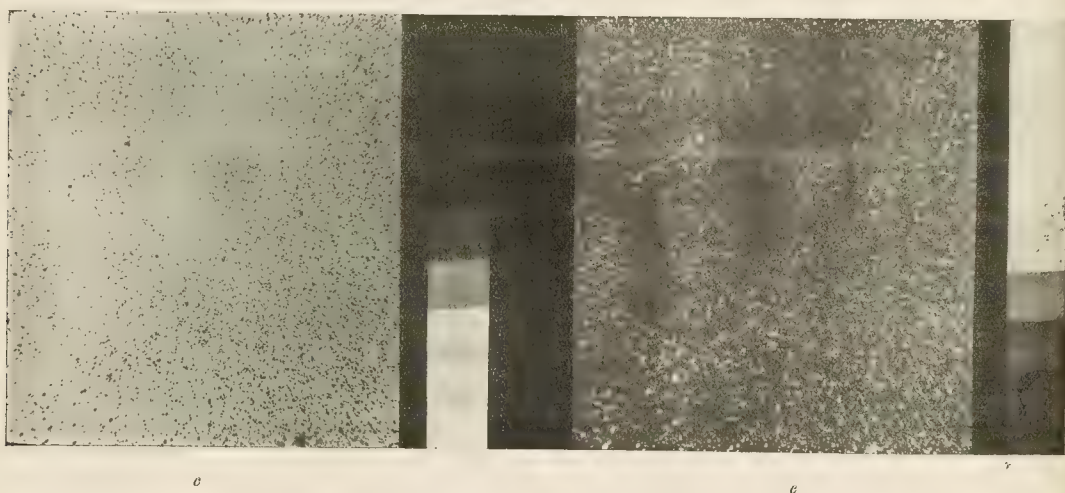


Fig. 4.—Black Hole in Milky Way. (R. A. 19h. 38m.  $\delta$   $10^{\circ}46'5''$ .) Change in relative light-values with increase in contrast.

how much they may be improved, or rendered more adaptable, there will always be nebulous structure, or faint lines, which lie at the extreme limit of the under-exposure portion of the characteristic plate curve, while astronomical negatives continue to be made.

Under the assumption then, that conditions in this direction indicate a fair degree of stability, it is advisable that some method of estimating the change in the photographic light value between the later illustration and the original negative

under conditions approximating actual use in astronomical work. A negative was therefore made by development of exposure in the revolving sector-disc machine, and after measurement in the spectrophotometer its curve was plotted. A standard reducing solution<sup>2</sup> being then made up, the plate was placed therein, and rocked for 2 min. 30 sec.; it was then

<sup>1</sup> "Journ. Soc. Chem. Industry," May 31, 1890, p. 462.

<sup>2</sup> Potassium ferricyanide and sodium hyposulphite in proportion of 1:10,200 combined solution used at a time; size of plate  $3\frac{1}{4}$  by  $1\frac{1}{4}$  inches.



ashed, dried, and again measured and plotted. Subsequent reductions and measurements were now given in three steps 2 min. each, followed by two further reductions for 3 min. each, and one action for 5 min. The reducing solutions were made up fresh for each operation, and the film was always washed and dried before measurement. The resultant curves are shown in Figure 1, where the heavy continuous line indicates the original negative, and the dotted lines show the action of the reducing solution for the times indicated. The appearance of the lower densities will be readily marked. If there should be placed in position adjoining the original supplementary small negative containing a scale of densities, this scale-plate be impressed on all subsequent copies, negative or positive, undergoing precisely the same treatment does the body of the plate, then the measurement of the scale upon the last plate of the series will, in conjunction with the original, give a difference which represents the value of the photographic light change.

Calling the densities of the original  $D_1$ , and those of the

Examination of these resulting negatives showed a wide difference in relative contrast and density, which was further accentuated by reduction with ferrieyanide and hypo. Absolutely no local reduction was given, but the action of the solution was allowed to proceed evenly upon the respective plates, and, of course, acted equally upon the adjoining scale-plates. The inclusion of positive plates  $e, f$  (which are exposed and developed to reproduce as exactly as possible tones truly the inverse of those in their accompanying negatives), merely serve to illustrate the values obtained.

From measurements of the original scale-plate, and also of that resulting in the secondary and tertiary positives, the accompanying curves were plotted, Figure 2. This method of plotting was first suggested by Hurter and Driffield,<sup>4</sup> wherein the ordinates represent densities of the *positive*, while the abscissæ correspond to the *negative* densities. As is obvious (and pointed out by these investigators), if the positive densities be truly the inverse of the negative, then the curve would be represented as a straight line. The amount of departure

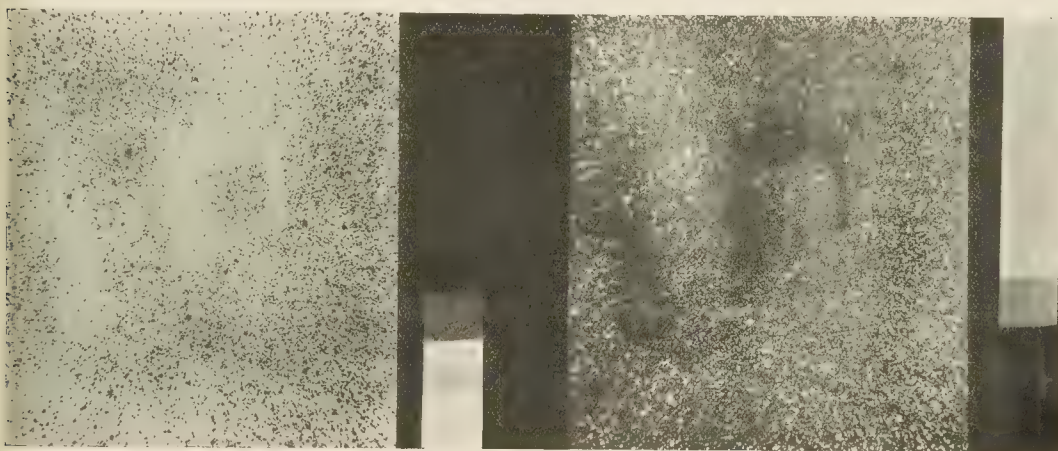


Fig. 5.—Black Hole in Milky Way. (R. A. 19h. 38m.  $\delta$   $10^{\circ}45'5''$ .) Change in relative light values with increase in contrast.

the negative after reduction  $D_2$ , then the change in the ratios is tabulated thus:—

	$D_1$	Ratio.	$D_2$	Ratios.
...	1318	.....	.....	.....
...	3086	.....	.....	.....
...	5624	1.0	0780	1.0
...	8720	1.55	2736	3.51
...	12800	2.27	5454	6.99
...	18554	3.30	9906	12.7
...	26354	4.69	15184	19.5
...	53956 (?)	9.57	20644	26.5
...	.....	.....	24954	32.0

the densities of the reduced negative proportional to the original, then the ratios would be similar no matter what the values of the densities.

Referring to the actual employment of the method, there is shown in Fig. 3 (a), the original negative<sup>3</sup> and the original plate, together with a positive reproduction of the same. From this positive were made the secondary negatives  $d$  and  $e$ . For the production of negative  $c$  a Seed "23" plate made use of, while negative  $d$  was made upon a Cramer transparency plate, being pushed to the practical limit of its action.

from the straight line condition indicates the value of the difference.

So long as this method of reproduction is utilised, then, tremendous shortening of the tone-scale will inevitably follow. Making use of a different type of reducing solution (ammonium persulphate, for example) is not allowable on work of this class, because one should then undo a very considerable amount of the effect which was striven for in the exposure and development of the subsequent plates from the original—viz., increase in the under-exposure portion of the characteristic curve of the plate. We are purposely and intentionally altering the tone-values because it is just that alteration which is desired. It remains, however, that it would seem advisable that there should be some means of indicating just what change has taken place in the light values, and it follows that such change should be capable of expression, and, further, that every illustration serving as a record of scientific data which is printed from other than the original negative, should bear in such reproduction a copy of a tone-scale showing both the "before and after" effects, and thus point the way for correction to true values when the knowledge of such values is needful.

ROBERT JAMES WALLACE.

Thanks are due to Mr. F. W. Jordan for the use of this negative.

<sup>4</sup> Relation between photographic negatives and their positives. "Journ. Soc. Chem. Industry," 1891, p. 100.

## SOME DISCURSIVE NOTES ON LENSES.

It appears to me, judging from the replies I am constantly seeing in the "Answers to Correspondents" column, there are many amateurs, as well as some professionals, who do not seem to understand—even superficially—the properties of the tools they employ. It is for this reason I venture to pen the following few notes. This I propose to do in such a simple way that they may be fully understood by those who have no knowledge of optics. Notwithstanding all that has been written in the form of replies in this and other journals, there are evidently many who are still ignorant on several points, and I am therefore warranted in assuming that some misconceptions exist on the subject.

### Angle of View.

One point that occurs to me is the query, often repeated, with reference to wide angle, medium angle, and narrow angle lenses. It does not seem to be understood by every one that one and the same instrument may combine the whole of the three properties, and may be serviceable for all of them. A wide angle lens, it may be explained, is simply one that will cover a large plate, although its focal length is but short. For example, lenses are made that will include an angle of 90 deg., and even more. The largest aperture of a wide angle lens proper is about  $f/16$ , but if the full size of the picture which they are listed to cover is required to be quite sharp to the edges of the plate they may require to be still further stopped down, when, of course, they will become very slow in action. I need not here dwell on the fact that no experienced photographer would think of using one of these lenses at its full capacity except on extreme occasions—in very confined situations, interiors, and the like. He would not use such an instrument if he could use a longer focus one, getting further back, so as to include the same amount of subject, and for this reason:—With the very short focus one, the perspective, though strictly correct, would be violent, and, consequently, very displeasing.

It has just been mentioned that the same lens may be a wide angle one, a medium angle, or a narrow angle one, a statement which may require a little explanation. Let us suppose we have a wide angle lens, made to cover, say, a  $10 \times 8$  plate. Such a lens will have a focus of about  $5\frac{1}{2}$  in., but if we use it for a quarter-plate it then at once becomes quite a medium angle one, and the angle then included will be about the same as we get when using the ordinary "quarter-plate" lens, the angle included being less than 50 deg. If this same lens be employed for a still smaller plate than the quarter size it then becomes a narrow angle one. The disadvantage of employing what is supplied as a wide angle lens as a medium or narrow angle one is that by reason of its small fixed diaphragm it cannot be used for rapid work. The rapid rectilinear lenses of our best makers will, when stopped down, cover a plate the next size larger than that for which they are listed, and with still more stopping down, often two sizes larger. This is particularly true of anastigmat lenses. When so employed they become more or less wide angle lenses.

The angles included by lenses of different focal lengths, on different size plates, do not seem to be so well understood by many as they might be. If the base line of the picture is equal to the focal length of the lens, the angle included is 53 deg. If it measures one and a quarter the focus, the angle is 64 deg. If one and a half it is 82 deg., and if it is twice the focal length the angle included is 90 deg. It therefore follows that when it

is necessary to include this angle the lens must be capable of covering a plate the base line of which is twice its focal length, and when such a lens is used one must, without a moment's consideration, expect to get violent and unpleasant perspective, which is frequently looked upon as being "distortion," although it really is not, for if the picture be viewed at a distance equal with the focal length of the lens, no so-called "distortion" will be seen.

### The Single Lens in Modern Work.

Of late years very little has been done with single lenses, many seem to be under the impression that to obtain good results a double or compound is indispensable, as, indeed, they are, if very rapid exposures are necessary. It is true that one of the components of a compound, say of a R.R., is sometimes used as a single lens, but it requires considerable stopping down in order to get good definition over a moderate size plate. Some of our old workers rightly tell us that for pure landscape work no equals the old form of single landscape lenses that have disappeared to be made for some few decades now. These are quite difficult to construct from the single lenses of a R.R. compound. They are of deep meniscus form, whereas the former are plano-convex, and much larger in diameter, in proportion to their focal length, and they do not require so much stopping down, consequently are quicker in action. These, as made by the late Mr. A. Ross, have an aperture of about  $f/15$ , at which aperture they will cover well the sizes listed. This aperture seems to be nowadays, but if enlarged to  $f/11$  the lens still gives fair definition.

The original form of landscape lens is really very useful for general purposes—much more so than many think, and sometimes be met with for about as many shillings as its original cost pounds. There is a prejudice against single lenses because they do not give straight lines in the picture, but this is not apparent when, say, the lines of a building are shown at extreme edges of the plate, and not otherwise. For instance, two straight lines, at right angles to each other, be photographed in the centre of the plate, even if it be the full size, neither will be in the slightest degree distorted. These old instruments, with their full aperture, are excellent for outdoor group work, on reason of their comparatively great depth of focus. It may be thought by some that, by reason of the small fixed diaphragm they would be very slow, but in practice they are not so. For example, we employ, say, a R.R. for a group, it has to be stopped down to about  $f/16$ , or less, to get figures in different planes in fair focus. With this aperture the R.R. is really the slowest of the two, as it has four reflecting surfaces, while the single lens has but two. I know an experienced photographer who always uses the old form of landscape lens for outdoor groups in preference to any other. I also know a firm that do a good deal of copying that always employ these lenses for copying small pictures, as the operators find that with them they get more brilliant negatives than with compound lenses. Of course, they take care to use only those of long focus in proportion to the size of the pictures to be reproduced.

These elementary notes on facts which must be perfectly familiar to many readers of the "Journal" will, it is hoped, be of service to the many whose acquaintance with photography is but short, and whose knowledge of the tools of the old days which can still be used with advantage is necessarily slight.

H. M. PELWIT

**CINEMATOGRAPH FIRE.**—During a matinée performance of a cinematograph entertainment in Hengler's Circus, Glasgow, last week, a film caught fire. An explosion followed immediately, the flames

shooting up as far as the side galleries, and causing great alarm. The manager assured the audience there was no danger, but it left the building



## GOODS READY WHEN PROMISED.

If we believe our contemporary the "Bulletin of Photography," the American professional needs to be moved by satire to see the swiftness of his ways, as witness the following cartoon (with apologies to George Ade) and letterpress. The article suggests that with all we hear of the "go" of a few American photographers, the rank and file are not on a level with their fellows in Europe.—Eds.

Upon a Time a certain man wished to get Rich Quick because he needed the Money to Put into the Bank. Opportunity Knocks once at Every Man's Door," said He, "and make sure She doesn't miss me. I'll sit up and answer the Bell." He waited nearly twenty minutes, but She didn't come. "No more," said he. "So I'll go out and look for Her." He looked around briskly and saw a Vacant Lot.

Finished product would be Ready the Day it was Promised. People set their watches by the way Goods were Ready. The Photographer was as Sure as the Seven o'clock Whistle.

His fame travelled fast. People came all the way from out of town to Patronise him. One man came all the way in from Evanston on the L. And that's going some. Some time. The Illinois Central built a special Track to the Studio.



At last," he exclaimed, "my search is ended. My efforts are rewarded." With these words he built a Photograph Gallery, or Studio, as the name may be, and hung out a sign saying that all goods would be ready when promised. It revolutionised the Photograph business! People were aghast at the novelty! When a Man had his picture taken he knew Positively that the

The first month the Photographer cleared one million dollars, the second month two million, and so on ad valorem until the proprietor's daughter began to think of marrying a title.

### MORAL :

Photographers, Dressmakers, Printers, and Laundrymen, Take Heed.

## THE EXPORT PHOTOGRAPHIC TRADE WITH SOUTH AFRICA.

British and South African Export Gazette," in its current (last) issue, remarks upon the rapid growth of photographic in South Africa. It cites, as an indication of the recent expansion of this branch of business, the returns for last year, which show the value of imported photographic material at £37,225. Our temporary proceeds:—

Seen, in nearly all countries where clear atmosphere and strong are special features—say, that broad belt of the world contained between 45 deg. of north and south latitudes—importers will fail to find a large call for photographic materials. In most of the countries, South Africa being a notable instance, the demand is high-class, or at least medium, goods, the rubbish which some managers to find a sale in England and in some parts of the continent being held in little favour in Colonial, Indian, and South African markets. It is satisfactory to know that only a very small portion of the cheap and nasty goods is of British origin, and that the United Kingdom, therefore, enjoys a high reputation for quality photographic lines. For example, as much as 70 per cent. of South African importations of photographic material are manufactured in the United Kingdom. The only other countries which have any share in the trade worth mentioning are the United States and Germany, the former with 21 and the latter with 8 per cent. Equally noteworthy is the position held by British goods in the Indian and Chinese markets, but in Central and South America the importations are largely from the United States, while Germany monopolises the market for these lines in the Far East.

### ON MERCHANTING NOVELTIES.

In nearly all countries there is an active demand for novelties, and these are forthcoming in such numbers that importers and dealers

often find they are expected to supply new ideas in photographic goods in greater variety than it would be profitable to stock. Such demands upon the importer are unreasonable, and it has been suggested that a way to meet a somewhat sore point with manufacturers would be for the latter to send out consignments of new goods which they have confidence would readily sell on the principle of sale or return. Once a photographic line gains a vogue in a market, especially among amateurs, its popularity is assured; but it is just as true that really excellent novelties might make no impression in a particular district. If some such system as that suggested were adopted, it might be accompanied by monthly or quarterly payments, with statements showing quantity sold, until the particular line gained an established position. In South Africa alone there are considerably more than 100 firms who now make a specialty of importing photographic materials.

### REQUIREMENTS OF PROFESSIONAL PHOTOGRAPHY.

With regard to the requirements of professional photographers, of whom there are some 250 in South Africa, and it is to be presumed, although exact figures are not available, proportionally as many in others of our Colonies, a regular demand exists for high-class goods of all sorts, increasing every year. Photo-block making processes are not practised to any considerable extent outside Europe and the United States, but there is nevertheless a tendency in this direction in such countries as Japan, Australia, and South Africa, in all of which the larger publishing establishments have now their own plants for undertaking work of this kind; and in many instances photographic reproductions of pictures are made at least equal to those produced at home. There can be no doubt that considerable developments will take place along this channel in the immediate future, necessitating valuable business in the supply of plant and materials. Altogether, the prospects of the trade in photographic sundries are

exceedingly rosy, and there seems to be no reason why goods of British origin should not be even more to the fore than hitherto. The only desiderata for successful business are careful study and constant attention to the prevailing vogues of the markets, and recognition of the fact that in nearly all inferior goods have hardly any chance, and that in many the best only are tolerated.

## Photo-Mechanical Notes.

### Multi-Colour Prints from a Single Plate.

A METHOD of colour-printing in which a single plate of special structure is used in connection with a series of "make-readies" has been patented by G. R. Hildyard, of Dresden House, Nether Street, Finchley, London, N.W. According to the complete specification (No. 16,236, 1907), the process consists first in subjecting zinc or other suitable metal to a treatment whereby a peculiar structure is imparted to the surface corresponding to the different shadows or tones, this structure being of such a character that whilst these parts are rendered very responsive and adaptable in the printing process the liability of the surface to become clogged is prevented or greatly reduced, so that the plate can be run for a considerable time with little or no requirement for cleaning and without detriment to the quality of the work. Moreover, the method by which the different shadows or tones are produced is extremely simple and straightforward as compared with the ordinary methods of manufacture.

In order to produce the peculiar structure above mentioned, a semi-resist film is applied to the plate at the drawing in or production of each tone on the plate, and the plate thus prepared etched with acid, washing off after each etching. The various tones being drawn in or applied with a full resist at each stage of the preparation, prevent the acid from etching the parts to which they are applied for this particular stage, whereas the semi-resist allows the acid to attack the plate in such a way that the other parts of the surface are broken up into the peculiar structure before referred to. The procedure is repeated for each tone or shade, so that in practice the portions of the plate corresponding to the successive tones will be broken up a number of times corresponding to the number of times that particular portion has been placed under the semi-resist. It will be understood that the full resists with which the outline and succeeding tones are drawn in remain on the plate and are unaffected by the etching through the semi-resists.

To make the plate the procedure may be as follows:—

After first preparing the zinc, or other plate, in the usual way (in an alum bath for example), the outline is traced on or applied in the ordinary way. Then all "solids," outline or otherwise, are drawn on with any suitable absolute resist ink. At this stage it is much preferable to put the plate into an acid bath for a sufficient time to bite down practically its whole surface very slightly, so as to slightly raise the "solids" above the general surface. The plate is then washed and thinly coated or rolled up with a suitable semi-resist film; this may consist of a varnish, such, for example, as that which is known as litho middle varnish, with which a little Chinese blue may be mixed. The plate is now placed in a bath of dilute nitric acid, say of about 20 per cent. strength, and is kept still, the surface being watched through a magnifying glass. As soon as a spongy or honey-comb-like pattern appears, the plate is taken out and the acid removed from the surface as quickly as possible. In some cases it is preferable to dip the plate again in the acid for a short time. The plate is now washed off and dried. Next the nearest "solid" parts are painted in with absolute resist, and the plate is again coated all over with semi-resist, and subjected to the acid bath; then it is washed off as before. This procedure is repeated for each tone or shade until the lightest tones have been produced.

When examined through a microscope, the printing surface of a plate thus made appears to be made up of a succession of rounded or undulating elevations and depressions quite different from the sharp, pitted appearance of ordinary plates.

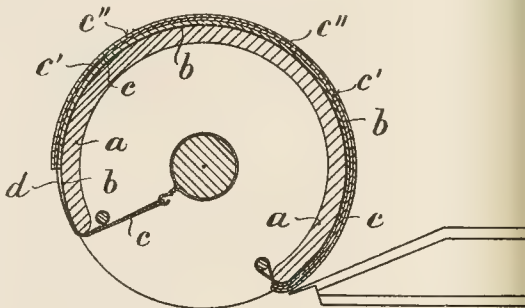
The broken up printing surfaces of plates made as above described appear to possess an absorbent property with regard to printing ink, and if they are rolled up with ink, although the ink is applied to the whole surface, yet the broken up portions retain the ink to such an

extent that they will not transfer it to paper simply placed in contact with them. It is believed that it is this structure which imparts to the plate its peculiar properties of responsiveness and adaptability as regards depth of tone printing under varying pressure, and a small liability to clog in printing.

As a modification of the method of producing the plate, photography may be employed. For example, an ordinary fish-glue or gelatin film may be formed on the plate and exposed under a negative for a short time, just sufficient to insolubilise the outline and solids. The soluble gelatine is then dissolved and washed off. The plate, being preferably bitten down slightly to raise the outline and depressions above the remaining surface, is coated with a semi-resist as before explained and subjected to an acid bath to break up the remainder of its surface as before mentioned. The semi-resist being removed, the plate is covered with another film and the negative is again exposed in careful register and exposed for a rather longer time to insolubilise the soluble parts of the gelatine being again dissolved off. Then a further semi-resist is applied, and the plate is again subjected to the acid bath, and so on until the lightest tone has been produced.

In accordance with the invention, a special and separate make-ready is used for each colour. These make-readies are attached to the cylinder or other impression surface in a yielding or resilient manner.

The drawing shows the impression cylinder in section. The first attached to the impression cylinder *a* in the ordinary manner is a blanket *b* of stout paper or other suitable material, and to the blanket one end of a sheet of the flexible cardboard *c*. To the other end of this sheet is glued a strip of stiff linen or buckram *d* to which are attached a series of elastic hoops *e*. The loops *e* are attached



hooks on the cylinder axle or other suitable part, so that the sheet *c* is resiliently applied upon the cylinder. The sheet *c* is then rolled up to form a make-ready by gluing a suitable number of other sheets of cardboard *c* <sup>11</sup> thereon.

The plate being placed in the machine, it is best to first to pull on a separate sheet of paper to see that the plate is in the proper position.

The plate is now rolled up with the first colour, say yellow. An impression is taken on the make-ready. The plate, of course, prints a yellow picture. Where the given colour, say yellow, is to appear, the operator cuts out card from the make-ready cylinder. The impression surface being thus lowered at these points there will not be sufficient pressure to cause the ink to be transferred and the plate will no longer print there. Similarly, in places where the colour is required to be softer or lighter in tone, all that is necessary is to rub down, or slightly depress the make-ready at these points and as this can be done by hand direct on to the actual impression on the make-ready, it will be seen that the procedure is extremely simple, accurate, and practical. To get heavier tones, on the other hand, the plate may be painted at the required parts with a suitable varnish or the like—for example, gold size, preferably containing a little colouring matter.

The impressions in the first colour having been taken, the make-ready is removed from the cylinder and another plain make-ready substituted. An impression of the plate is taken on this, and any superfluous parts may be removed or rubbed down, or the plate painted with varnish to locally deepen the tone of the colour according to requirement as before, and so on with the colours in succession, a fresh make-ready being prepared and used for each colour. Light and dark colours of a similar nature are to be printed



ple, pink and red—one make-ready can be used for them, the colour being first printed, and then those parts which do not under the dark colour next to be printed are cut out of the make-ready, so that they do not print in the succeeding impression.

In preparing each make-ready, it is preferred to take a pull or impression of the whole plate on a sheet of paper, right over an impression of the colour or colours so far completed. The operator has only to compare this with the original, to see at once which of the successive make-readies should be removed, modified, or red.

Binary litho or printing ink or any other suitable ink may be employed. As is known, printers generally dilute the ink with turpentine. For the purpose of the invention it is preferred not to do but to dilute the ink with a suitable oil. For example, a mixture of 1 part of good lubricating oil, such as sperm oil, to about 5 parts of turpentine, 6 parts methylated spirits, and 1 part strong ammonia of, say, .880 sp. gr. It is of advantage even to wash the plate with this mixture before painting on the size, so as to ensure a fine surface.

When gold size is used for painting portions of the printing surface to get heavier tones as above mentioned, and remains on the surface for some days, as frequently happens in long runs, it is somewhat difficult to remove the size from the plate by ordinary means. It can be readily removed by rubbing the plate with a mixture of 2 parts of turpentine, 6 parts methylated spirits, and 1 part strong ammonia of, say, .880 sp. gr. It is of advantage even to wash the plate with this mixture before painting on the size, so as to ensure a fine surface.

It will be seen that the method of printing above described is the opposite of that usually employed in colour printing. In these make-readies are progressively built up to produce the deeper tones, whereas in the present process the make-readies are, so to "built down" to produce the lighter tones.

#### PHOTO-MECHANICAL PATENTS.

The following patent has been applied for:—

**TYPE-SETTING.**—No. 15,626. Improved process for making Autotypes and apparatus therefor. Eugen Albert, 28, New Bridge Street, London.

## Patent News.

*Process patents—applications and specifications—are treated in the Mechanical Notes.*

The following applications for patents were made between July 27 and August 1:—

**COLOUR PHOTOGRAPHY.**—No. 15,937. Apparatus for copying colour plates. John Henry Smith and Waldemar Merckens, 40, Chancery Lane, London.

**REFLEX CAMERAS.**—No. 15,951. Improvements in foldable reflex cameras. Optische Anstalt C. P. Goerz Akt.-Ges., 31, Bedford Street, Strand, London.

**LIGHT FILTERS.**—No. 15,963. Improvements in or relating to light filters. Friedrich Albin Schanz and Karl Stockhausen, 111, Hatton Garden, London.

**SCREEN-PLATE COLOURS.**—No. 15,983. Improvements in screen-plate colours for colour photography. Harold Frederick Smith, 33, Chancery Street, Peterborough.

**PRODUCING MEANS.**—No. 16,084. Improved means for producing distance copies of drawings, photographs, writings, and the like. John Jarl Waddington, 47, Lincoln's Inn Fields, London.

**RELATING TO FILMS.**—No. 16,114. Improvements in or relating to the manufacture of film for cinematograph and like apparatus. Société Anonyme des Plaques et Papiers Photographiques, A. Lumière et ses Fils, 111, Hatton Garden, London.

**RELATING TO FILMS.**—No. 16,115. Method of renovating or re-etching worn cinematographic films. Société Anonyme des Plaques et Papiers Photographiques, A. Lumière et ses Fils, 111, Hatton Garden, London.

**DEVELOPING MEANS.**—No. 16,203. Improvements in means for developing photographic plates. Ralph Emerson de Lury, 33, Cannon Street, London.

**PACKING MEANS.**—No. 16,206. Improvements relating to the packing and

development of flat photographic films. James Worms, Birkbeck Bank Chambers, Southampton Buildings, London.

**COPYING.**—No. 16,272. Improvements in apparatus for reproducing at a distance pictures or designs. Edouard Belin, 5, Lord Street, Liverpool.

**PRINTING.**—No. 16,277. Improvements in or relating to the photographic reproduction of images. Frank Wordsworth Donisthorpe, 7, Southampton Buildings, London.

**PRINTING.**—No. 16,294. Improvements in or relating to the photographic reproduction of images. Edmund Seal Donisthorpe, 7, Southampton Buildings, London.

#### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

**LIGHT-FILTERS FOR SCREEN-PLATE EXPOSURES.**—No. 23,738, 1907.

The present invention relates to the yellow filter which is applied near the lens when making exposures upon a photographic sensitive surface, between which surface and its support a polychrome intermediate layer is situated, as, for example, in the Lumière Autochrome plate. The filter usually consists of a plate or disc, the front and rear surfaces of which are plane and parallel to one another.

According to the invention these filters are only modified with a view to rendering them available for a second purpose. As already known, in exposures upon the sensitive surfaces above mentioned, light has to penetrate the polychrome intermediate layer before it reaches the photographic sensitive surface. The support of the sensitive surface is therefore given a position in the camera the reverse of that obtaining in ordinary photography, so that the surface lies at the back of the support, that is to say, on the side remote from the lens. In exposures either a filter of any thickness is to be placed in front of the lens and the distance between the latter and the support (obtaining in the case of ordinary exposures) reduced by a certain amount which is somewhat smaller than the thickness of the support; or a filter having about double the thickness of the support is to be set behind the lens. In the latter case, the reduction in distance between the lens and the support is dispensed with, as the effect of the thick filter is to restore the coincidence of the image plane and the sensitive surface.

When the first of these two methods is followed, in focussing by shifting the lens according to the ordinary scale of distance a final shifting has afterwards to be made. In focussing by means of a ground glass screen it is necessary that this screen has the same thickness as the support of the sensitive surface and is placed the reverse way in the camera, so that the ground side is remote from the lens. When the second method is followed, the lens has only to be shifted according to the ordinary scale or the screen used in the ordinary way. In spite of its apparent simplicity, the second method—setting the yellow filter behind the lens—is seldom made use of, because the insertion of the filter into the interior of the camera is particularly troublesome and causes a loss of time.

By the present invention the filter placed in front of the lens is invested with the advantage hitherto only possessed by the filter set behind the lens, viz., that the ordinary methods of focussing remain in use. According to the invention a yellow filter is made use of which has not as hitherto the effect of a homogeneous plano-parallel plate, but that of a weak dispersive lens, by virtue of one or several (external or internal) surfaces being spherical. In consequence of this filter-lens acting in co-operation with the objective, the focal length of the latter is, as it were, increased a little, which increase corresponds to the backward displacement of the sensitive surface.

The increase in the focal length of the objective incidental to the filter-lens should amount to about two-thirds of the thickness of the support, that is 1 mm., when this thickness is 1.5 mm. If the focal length of the lens proper be 150 mm. a negative focal length of the filter lens of 22.5 metres would just bring about this increase. The same filter lens would also suffice for objectives of 145 mm. and of 155 mm. focal length, without the position of the image being so much displaced relatively to the sensitive surface as the casual differences in the thickness of the supports would amount to. In

general, the greater the focal length of the objective the greater must the focal length of the filter lens be chosen.

The displacement of the image due to the influence of the filter lens is not independent of the distance of the object to be taken, but the variations in displacement for the ordinary distances at which photographs are usually taken, and which represent a high multiple of the focal length of the objective, are again smaller than the chance differences in the thickness of the supports. Ernst Wandersleb, Carl-Zeiss Strasse, Jena, Germany.

**FILM-HOLDERS.**—No. 23,973, 1907. The invention provides a rectangular frame of metal or other suitable material whose horizontal top and bottom members are curved in plan, while its vertical members are formed with grooves for the reception of a film. The flat photographic cut film to be developed is placed in the frame by being directed vertically downwards in the grooves of the vertical members and on to a ledge provided on the bottom member, the film thereby being caused to conform with the curvature of the frame, which curvature has the effect of preventing any buckling or curling of the film during the processes of development.

A number of these curved film holders may be used in conjunction with a known bath consisting of an outer casing provided with a removable internal frame formed with vertical grooves for the reception of the film-holders, when a large number of films can be treated simultaneously, thereby effecting considerable economy of time and expense. Benjamin Thomas Akers, 1, Wells Road, and John Edward Wilson, "Dunholm," King's Road, both of Ilkley, Yorkshire.

**STEREOSCOPIC PRINTS.**—No. 9,260, 1907. The invention relates to a method of taking stereoscopic negatives on separate plates or films

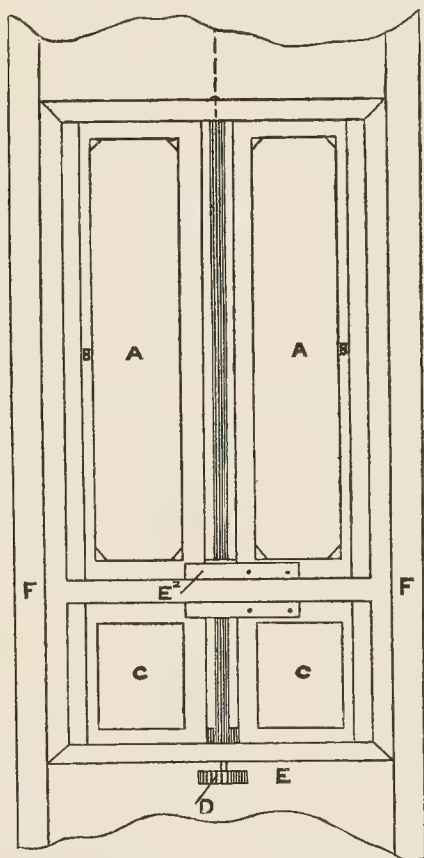


Fig. 1.

in such a way that the negatives can be immediately printed from on single pieces of sensitive paper. No portion of the picture is

photographed which is not necessary for the true stereoscopic effect. The invention also allows for the different angles of view according to the distance of the object photographed; in other words, nearer the object then the wider are the plates separated from one another, while, on the other hand, the more distant the object nearer the plates, thus giving a converging movement similar effect to the converging movements of the human eyes. The apparatus does not interfere with the interdistance of the lenses, this interdistance controlling the relief effect. Any distance between the lenses may be used, the plates being afterwards adjusted to the reflection on the focussing screens from the lenses.

A camera is used provided with a dark slide capable of containing in two separate chambers (one holding each strip) two strips of plate or sensitive film side by side in a perpendicular position. This slide is adapted to move downwards and repeat so as

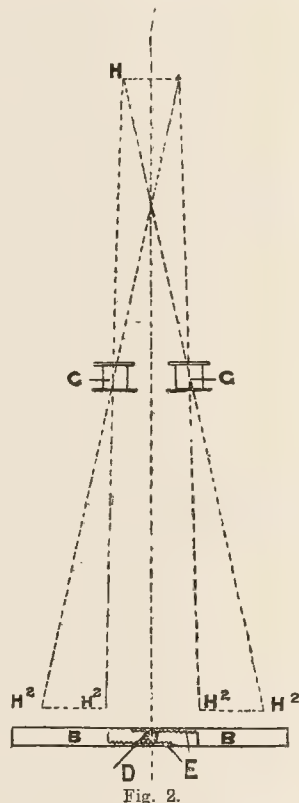


Fig. 2.

allow stereoscopic pairs of photographs to be taken to the full length of the strip. The strips of plate or sensitive film are widened apart from each other until exactly the same field of view is obtained on both plates. In this manner the centre of the object photographed is exactly reflected in the centre of the plate. By this means the trimming previous to mounting has hitherto been necessary for stereoscopic prints is unnecessary.

The arrangement of strips of plate or film has the further advantage that it does away with the inconvenient method hitherto usual of printing one negative and then by a movement printing another, or printing one pair of negatives (a stereoscopic slide) then printing other subjects. The plates or films of this invention may be developed and printed, thus affording a means of producing stereoscopic photographs in quantities without separating pictures.

Figure 1 shows the back view of the dark slide with back removed so as to show the position of plates and the means of separating the strips of plate or film. A, A are the strips of plate held in the carriers BB. CC are the focussing screens, which move in grooves and are adjusted by the pinion D and rack



h simultaneously adjusts the plates A A by racks E2 E2 until image coincides, which image is brought into register by having or more lines perpendicularly drawn across the ground glass the same position on each. Then when any elected parts are ed by these lines the images must correctly register and cover same field of view. F F are the rebates at side of camera in h the slide repeats downwards any number of exposures, and e lenses retain the same position any optical centres or distance een may be used.

ure 2 shows the movement of the plates as applied to the al system. G G are the lenses projecting the object H photo- ed at H2 and H2. The plate carriers B B and the back F ional sectionally viewed shows how the plates are widened

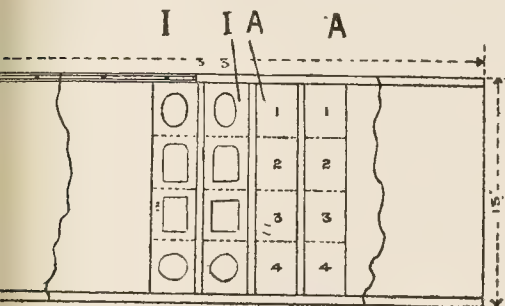


Fig. 3.

they are covered by a coincident picture in perfect register to edges.

ure 3 shows the printing frame with back removed; A A being negatives reversed as to their relative position. I I are border ives with opaque centres and stereoscopic borders, such as a, garden windows, or any other thing that may leave a clear r edge in centre. This centre being opaque, the border prints copic effects on the sheets of paper as it passes after having rted on from the negatives A A, which are masked to a white margin. The resulting print gives effects such as a n a frame, the whole being stereoscopic with no blurred or pping edges where the printings meet. The oblong shape of gatives A A keeps the picture truly parallel as necessary for copy. Gilbert Dyas, 9, Mary Street, Dublin.

FROM BOOKS.—No. 6,275, 1908. Protection is claimed for a s described as follows:—Sensitised paper (bromide paper) is e face downwards on the page to be copied; a back or under- of some stiff material, such as cardboard, thin sheet metal, s is arranged under the page, and the sensitised paper and e together pressed against this back with the help of a cover of glass or other suitable transparent material. In the f paper or pages written or printed on one side only, the of the back or under-layer is not of importance, but with containing also printed or written matter on the rear side, been found advisable to use only black or non-actinic colours r, red, green, or black (and the like) for the back or under r a glass plate covered with tinfoil or a colour filter may be

pressing the glass cover-plate tightly against the under-layer qualities can be removed, so that the intimate contact of the ed surface with the paper or page to be copied, which is rry to secure a sharp copy, is ensured; this is of especial nce in the case of old and creased books.

also essential, more particularly for copying from old and ooks, that the book cover lying under the sheet to be copied e placed somewhat higher in the middle on a supporting e like, in order to better place the transparent pressing hich easily becomes curved when the book is fastened up. y also be mentioned that in the photographic printing pro- ore particularly in making copies of old prints, etc., in which ed paper is placed beneath the print to be copied and the ed through the print on to the paper, better results are d if the under layer is of non-actinic colouring (yellow, red, or black).

The invention includes a printing or copying device consisting of a plate or support for the book, which plate may be arranged on legs, and against which plate the book with the sensitised paper is pressed with the help of the glass cover-plate in conjunction with suitably arranged screw-clamps, levers, etc. Carl von Arnhard, 16 Wilhelmstrasse, Munich.

The following complete specifications, etc., are open to public inspection before acceptance under the Patents Act, 1901:—

DEVELOPMENT.—No. 15,657. Photographic developing and fixing solutions. Jeannot and Bremner.

COLOUR PHOTOGRAPHY.—No. 15,937. Apparatus for copying colour screen-plates. Smith and Merckens.

## New Trade Dames.

BROMOIL.—No. 303,988. Photographic papers. John J. Griffin and Sons, Ltd., Kemble Street, Kingsway, London, W.C., photographic paper and apparatus manufacturers. June 17, 1908.

"CARLEENCO."—No. 304,209. Photographic mounts, Christmas cards, albums, almanacs, and other similar articles of paper or cardboard, all being goods included in class 39. Carl Ernst and Co., 27 to 31, Earl Street, Finsbury, London, E.C., mount manufacturers. June 25, 1908.

## FORTHCOMING EXHIBITIONS.

September 11 to October 24.—Photographic Salon. Entries close August 31. Sec., Reginald Craigie, 5A, Pall Mall East, London, S.W.

September 17 to October 24.—Royal Photographic Society. Entries close September 1. Sec., J. McIntosh, 66, Russell Square, London, W.C.

December, 1908, to January, 1909.—Kiew International Photographic. Sec., S. T. Horovitz, Technical Society, Kreshtchatik, 10, Kiew, Russia.

1909.

January 6 to 27.—Northern Photographic (Manchester). Entries close December 11, 1908. Sec., S. L. Coulthurst, Broad Oak Road, Worsley, Manchester.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### The Finish of a Hundred Yards' Race.

I do not think that there can be any doubt (writes Mr. Adolphe Abrahams in "Photography and Focus" for August 11) that the ideal position from which to take the finish of a race is as nearly straight as is practicable. One naturally desires to secure the figurez as large as possible, and therefore one stands as near to the tape as width of plate and number of runners allow. I would here point out that if the photographer is not sufficiently generous regarding margins, it is always a runner on one of the extreme sides who re-pays him by coming in first and spoiling the photograph. The problem, therefore, is how to stand in the middle of the track, pretty close to the runners, and yet without a mishap. The consequences of an eleven-stone man with a velocity of ten yards a second crashing into the camera and its operator are not pleasant. Yet the correct position is easy to adopt.

The strings which separate the sprinters are attached to upright poles close to the finish. Starting at one of the two centre uprights, one should walk straight back to the distance selected. When the men finish, they will run easily right and left past him. I have often seen a big field camera erected in such a position without anything untoward occurring.

If it is compulsory to take a picture from one side, it is well to try to find out on which side is the likely winner, and then to select the side opposite to him.

Exposure is made, of course, as the winner breaks the tape. The

duration of the exposure will depend on the proximity of the camera to the finish. If one is as near as the width of field will permit, 1-400 sec. will give a sharp image with a little blurring of the feet; probably 1-800 sec. will give perfect sharpness.

### Photographic Dish Stains.

One kind of stain (says a writer in "The Amateur Photographer and Photographic News" of August 11) comes in a most aggravating way, and that is in developing gaslight papers, with a metol-hydroquinone developer. A certain amount of reduced silver, of the black form, of course, is thrown down, and this adheres to the dishes with extraordinary tenacity. Metallic silver is easily dissolved by concentrated nitric acid, and it is this re-agent which must be used in order to cleanse the dishes. The commercial form of nitric acid is quite good enough, and should be used with caution, a little being poured into the dirty dishes, and the latter rinsed out with it. The acid at once removes the stain, and the dish should then be filled with water in order to dilute the acid before it is poured into the sink. Sapollo or some similar soap will enable one to get off these silver stains, but the acid is far preferable. Most developers containing alkaline carbonates, and more especially M.Q., deposit a rough substance on the sides and bottom of a dish which water will not touch. This stuff, however, is immediately soluble in weak acid, and dilute hydrochloric or nitric acid may be used. It is only by keeping one's dishes scrupulously clean that the minimum of trouble can be assured, and developing dishes more especially should receive constant attention.

## New Books.

"Anleitung zur Photographie." By G. Pizzighelli. Thirteenth edition. Halle: W. Knapp. M. 4-50.

The fact that twelve previous editions of this general text-book of photography have been exhausted should render unnecessary any other recommendation of ours. The arrangement and production of the volume are excellent in every way, and the supplemental half-tone plates which are collected at the end should be an encouragement to the reader in his aim at striking, if not invariably pleasing, results. The handbook is written solely for the person who desires practical success; the theoretical considerations which figure so largely in many German works do not for man appreciable portion of it. If, as we may suppose, the technical advice represents the present practice in Germany, we may express surprise at one or two of the procedures advised. Thus among processes of sulphide toning of bromides the only bleaching formula is a mixture of potassium bichromate and hydrochloric acid, a bad prescription for a workable sepia-toning process. Ozobrome and carbograph are included among pigment processes, but the year-old oil process does not appear to have yet impressed the Teutonic worker, who, we believe, continues to find in "gum" all the opportunity for riotous control which he desires.

A GERMAN HANDBOOK OF RETOUCHING. — A third edition of the "Anleitung zur Positiv und Negativ-Retouche," by Carl v. Zamboni, has been issued by Herr Knapp, Halle, at M. 2-40. It deals with the retouching of both portrait and landscape negatives, although the former naturally receives the lion's share of the writer's treatment. The working up of prints and enlargements in black and white, with chalks and in colours, is also the subject of two chapters. The volume, which throughout seeks to give the reader practical instruction, contains a series of useful plates showing examples of retouching.

EDER'S "REZEpte AND TABELLEN." — The seventh edition of the photographic tables and formulae, collected and edited by Dr. J. M. Eder, reaches us from the publisher, Herr W. Knapp, of Halle a/S, by whom it is issued as a cloth-bound volume at M. 3. The formulae have evidently been brought up to date since the last edition, as witness the inclusion of the Autochrome prescriptions and directions for sepia sulphide toning as worked out in this country, and doubtless practised with equal success in Germany, though to a less extent, we believe, than here. The footnotes to many of the formulae giving references to more lengthy information on a particular subject are a

commendable feature of the compilation. The contents, it should be added, embrace both photo-mechanical and photographic processes and are systematically arranged under appropriate headings.

ERRATUM.—In the review of "The Study of Stellar Evolution" our issue of July 31, the price was wrongly given as 10s. 6d. net. It is 16s. 6d. net.

## Dew Apparatus, &c.

The "Tella" Reflex Camera. Sold by the Tella Camera Co., High Holborn, London, W.C.

The reflex camera, introduced under the name of "Tella," recently been submitted to us for examination by the company, is certainly an instrument of particularly notable qualities. Advantages of the reflex principle are sufficiently widely recognized by all classes of photographers to make it superfluous to dwell upon them, nevertheless, the great convenience and certainty of focussing have the drawback that bulk and weight are ali-

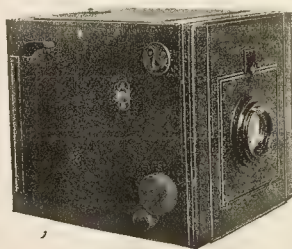


Fig. 1.

inevitably the accompaniments of a reflex camera. The "Tella" been specially designed to reduce both size and weight, and success, which has attended these efforts should be sufficiently obvious when we say that the instrument before us, which takes picture of quarter-plate size, measures 5 x 6 x 5 inches, although is an apparatus of the double-extension type, giving an extension all of twelve inches. As regards weight, the camera, together with the lens, weighs 2½ lbs., and when carried in the hand makes weight felt less than a good many cameras even of the ordi-

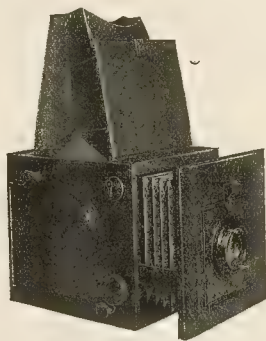


Fig. 2.

pattern. The worker, therefore, who may have been deterred from availing himself of the reflex advantages would be well advised to inspect the "Tella" camera before taking it for granted that its objections of size and weight are insuperable in his case.

As regards the movements of the camera itself, we would first point out that it possesses the great advantage of a rise of front of 1 equal to one-third the vertical height of the quarter-plate. Extension is obtained, first of all, by direct racking out of the bellows, which gives a distance from lens to plate of 10½ inches; the additional inch and a half is then obtained simply by removing



sliding the lens panel, which carries a collar just over one inch. On the panel being reversed this collar projects, and the lens is then screwed into the front of it the total long extension is increased, as shown in the third illustration.

The lens panel is leather-covered on both sides, so that at full extension, it will all be in the normal position, the finished appearance of the camera being preserved. The focussing rack and pinion are placed on the right side of the instrument and the shutter release on the left, the latter being only adjustment on that side of the camera, a plan which prevents any accidental mistake, even by the beginner. The adjustments of mirror and shutter are very nicely contrived. The mirror works wonderfully lightly, and, as we have found in our own experience, with freedom from vibration. The shutter is kept at constant tension, and the speeds obtained by altering the width of the aperture which is done by winding the shutter until the bottom aperture is level with the lower side of the reversing back; the shutter winding-key, B in the drawing, is then pressed in and the shutter is wound until the desired shutter speed is obtained as shown in an indicator, G, on the other side of the camera. The shutter also provides for time exposures. The reversing back is made of detachable pattern, and has one good feature which should not be overlooked, namely, that in the position for vertical pictures the

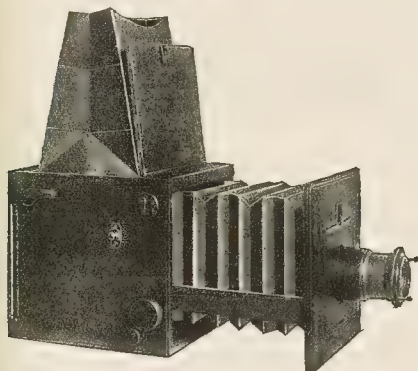


Fig. 3.

slide is inserted from the bottom of the camera so that the back of the pull-out dark-slide is shielded by the camera itself from direct sunlight, the slide being, in fact, upside down while in readiness for exposure in the camera. This is but one point which shows the care taken in the designing of the instrument, and the camera altogether impresses us as a suitable instrument for the tourist, or indeed general, work. Its price is ten shillings with six single dark-slides in quarter-plate size, or £14 15s. Ross "Homocentric," Series III., f/6.3. A tropical model of the camera built of polished teak and brass-bound and screwed at every joint, is made for climates where extremes of heat and damp may be reckoned for. This camera only with six slides, is sold at £15.

Watkins Bee Meter and Compass, made by the Watkins & Co., Imperial Mills, Hereford.

The combination of the popular Bee meter with a compass in such a way as scarcely to increase the size of the instrument, should surely be appreciated by photographers, who can often make good use of the latter accessory. A knowledge of the compass bearings will often enable the photographer to predict with certainty when the sun will be in the position to give the best lighting. A record of the point to which the camera lens points will be of assistance in obtaining a second negative of clouds for printing purposes, and in record work of any kind compass bearings are necessary to make the record complete. In addition to all this, the use of a compass in finding one's way about a strange country is obvious. The price of the "Bee Compass-Meter" is 3s. 6d.



## CATALOGUES AND TRADE NOTICES.

**THE FOLDING RUBY CAMERA.**—Two supplementary lists or pamphlets issued by the Thornton Pickard Manufacturing Company give particulars of this well-designed hand-stand camera and of the Beck "Isostigmat," Ross "Homocentric," and Ross-Zeiss lenses, which can be fitted to it. The lists convey some useful lessons in the way of the value of range of focal length and great covering power.

**"A BETTER ARGUMENT."**—Messrs. Raines and Co., of Ealing, compel our admiration by the thoroughness with which they do all their work, not excepting that part of it which informs the professional photographer of the many-sided "Raines Service." Their latest publication in this direction is entitled "A Better Argument," and logically points out the power of the double business lever (quality and promptness) which Messrs. Raines operate from their well-appointed works at Ealing. A piece of reading which is quite worth applying for.

**KENNGOTT SHUTTERS, TRIPODS, ETC.**—A new list, issued by W. Kenngott, 64, Rue de Saintonge, Paris, and 45, City Road, London, E.C., describes in French, German, and English the many special manufactures and other high-class goods handled by this firm. Specially worthy of mention is the great variety of folding metal tripods and similarly popular photographic accessories. The various patterns of the Kenngott "Koilos" shutter are also a feature of the list, which also lists and describes full series of folding, reflex, and other cameras, lenses, finders, etc. Those interested should apply for a copy.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

SATURDAY, AUGUST 15.

United Stereoscopic Society. Outing to Kew Gardens.  
Manchester Amateur Photographic Society. Excursion to Lichfield.  
Southampton Camera Club. Ramble, Christchurch and its Priory. S. G. Kimber.

WEDNESDAY, AUGUST 19.

North Middlesex Photographic Society. Affiliation 1907 Competition Slides.

## Commercial & Legal Intelligence.

**NEGATIVES OF TAPESTRY.**—At the Buckingham County Court last week, Percy Edgar Smith, trading as Varney and Co., photographers, Bridge Street, Buckingham, sued Lewis Edwards, of The Dingle, Cookham, fine art dealer, for £8 8s. for work done in photographing tapestries in Stowe House, and supplying prints of the same.

Mr. Law, for the plaintiff, stated that on the 7th of March last the defendant, who lived at The Dingle, Cookham, Berks, and was a fine art dealer, called on the plaintiff at his studio in Buckingham and requested him to take some photographs of five pieces of tapestry in Stowe House. The plaintiff told him that he must have authority to take the photographs before he could execute the work, and permission would have to be obtained of Mr. Morgan, agent to the Baroness Kinloss. Defendant said he would see Mr. Morgan and obtain the permission required. Defendant said he wanted good photographs because he was going to send them to experts in order to ascertain whether the tapestries were genuine. The plaintiff went over to Stowe House and photographed the five pieces of tapestry separately, and sent three prints of each to the defendant and one print of each and the negatives to Mr. Morgan. The five prints sent to Mr. Morgan, he presumed, were as an acknowledgment for the permission given to take the photographs. There evidently had been some conversation between Mr. Morgan and the defendant respecting the negatives, and the defendant told the plaintiff that the negatives must be destroyed. And now he had to add that after the tapestries had been photographed and the work further attaching to the execution of the order was in progress, Mr. Morgan called at the

studio of the plaintiff and said that the negatives must be sent to him at Stowe, and that the defendant would pay the plaintiff his bill. It was on that statement that the negatives were sent to Mr. Morgan, together with one print each of them.

The bill was sent into the defendant. No price had been mentioned, and the plaintiff charged the reasonable sum of 8 guineas. He had no reply, and after waiting about a fortnight he sent in another bill to account rendered, and a letter was enclosed stating that as the defendant had no ledger account with the firm he was asked to give references. After waiting a reasonable time and no reply being received the plaintiff wrote another letter stating that unless there was a settlement of the account within seven days he should place the matter in the County Court. No reply was received, and the plaint was placed in the County Court, and not until that course had been taken did the defendant move at all in the matter.

Leonard Varney said: I live in Buckingham and am a retired photographer, and for forty-one years carried on the business in Buckingham. I know what work was involved in photographing the tapestries at Stowe House, and I consider the charge of 8 guineas very reasonable. I should have charged 2 guineas each plate, or if I was allowed to have retained the negatives the charge would have been one guinea each. Where I gave up the negatives I always charged a double fee. In this case twenty prints were supplied. I should charge 3s. for unmounted and 3s. 6d. if mounted for the size prints supplied by the plaintiff. That would be £12 15s. altogether. That would be very reasonable indeed.

Guy Hughes said: I am a photographer carrying on business in Baker Street, London. I have had experience in all kinds of photography. I have seen the statement of claim, and considering the work and labour involved I consider the 8 guineas charged to be very reasonable indeed. It is very much lower than I should have charged for the work, especially as the negatives were handed over. I have had as much as 5 guineas for a negative.

By the Judge: They are excellently taken. It is far more difficult to photograph tapestries, which are fixtures, than oil paintings, because the latter can be placed on an easel and moved about in order to procure the proper light. The negative of these tapestries would be a valuable asset in the business.

Lewis Edwards said: I live at The Dingle, Cookham, and my occupation is that of a fine art dealer at the present time, and prior to that my occupation was that of a practical photographer. In pursuance of certain communications I went to Stowe House and saw Mr. Morgan. I saw the tapestries and I expressed the belief that I could procure a customer for them, but before I could do this I said I must have photographs of them. Mr. Morgan said he believed that Varney and Co., of Buckingham, possessed negatives of the tapestries. I saw plaintiff, and he said he had no negatives, and that if I wanted the tapestries photographed I must gain permission of Mr. Morgan. I told him that 8½ in. by 6½ in. would be sufficient for my purpose, but he suggested that they should be the larger size, and I agreed to it, but I told him that he was not to make them too expensive. . . . The next I heard about it was when I received the fifteen prints, that was three each of the five pieces of tapestry. I did not receive the negatives. They were to be sent to me with the prints, and one print each of the five pieces of tapestry were to be sent to Mr. Morgan. The reason why I stipulated that the negatives were to be sent to me was that no more prints should be issued, so that no copies of the tapestries could be taken. If that was allowed the designs of the tapestries would become common. It was hardly likely I should pay 8 guineas for fifteen prints. The negatives were sent to Mr. Morgan without my knowledge or permission. The price of 8 guineas for fifteen prints is simply absurd. I know what photography is. I told the plaintiff that the negatives would have to be destroyed.

Harry James Wilson, carrying on business in Harrow Road, a photographer of forty years' standing, stated that he considered the charge of 10s. each plate would have been ample payment. That would have been £2 10s. for the whole charge. It was only four miles out of the town. He would like to keep on at that price all day long. He thought an oil painting far more difficult to photograph than a tapestry. He had not had any experience in photographing tapestries. His price of 10s. per tapestry included the negatives.

The jury found a verdict that the plaintiff was entitled to the amount he claimed. They considered that the charge of 8 guineas was a fair price, seeing that the plaintiff had given up the negatives.

The Judge said the verdict was in favour of the plaintiff, with costs.

**A BRISTOL BANKRUPTCY.**—At the Bristol Bankruptcy Court on Friday the public examination of Ralph Winter Thomas, carrying on business at 69, Stokes Croft, Bristol, as a photographic dealer, was declared closed.

**LIMITED PARTNERSHIP.**—Parrish and Berry, photographers and dealers in photographic requisites, 3, Waltham Street, Hull, have registered a partnership for seven years from April 1, 1908. General partner:—Mr. R. W. Berry, 3, Waltham Street, Hull. Limited partners:—Mrs. E. C. Berry, 100, Alliance Avenue, Hull, contributing £500 cash, and Mrs. E. Parrish, 547, Anlaby Road, Hull, contributing £425 cash.

**LIABILITY FOR CANVASSER.**—At the Greenwich County Court last week Arthur Denny, a clerk, of Burwash Road, Plumstead, sued the Greenwich Fine Art Academy, of 97, Woolwich Road, for £1 ls., paid for an enlargement of a photograph which had not been delivered. Defendant admitted receiving the small photograph for enlargement, but denied receiving the guinea sued for. Plaintiff said that the person who received the photograph was allowed that sum. The judge held that the defendants were bound by the acts of their agents, and found for the plaintiff with costs.

## News and Notes.

**DEATH OF MR. F. H. WENHAM.**—At the moment of going to press, we very much regret to hear of the sudden death, at the great age of eighty-four, of Mr. F. H. Wenham, one of the first photographers of the old days, and perhaps better known to the photographic passing generation than to the present. We must postpone until next week a fitting reference to the optical and other inventions of the deceased gentleman, and to the almost romantic story of his life.

**"URBANORA" AT THE PALACE THEATRE.**—There has just been included in the "Urbanora" exhibit at the Palace Theatre a full series of animated pictures of what cannot be regarded other than as the most memorable Cowes week—alike from a national, a social, and a sailing point of view—that has ever been celebrated on the Solent. The scenes, which were expressly taken for this theatre by the Urban operators and are singularly clear in definition, include views of "Shamrock," "Germania," "Cicely," "Britannia," "Creole," "Carina," and other racers in all classes, as well as the splendid cruiser "Indomitable," and a delightfully intimate picture of their Majesties on board the Royal yacht.

**GLASS BOTTLES.**—The world's largest bottle factory is at Düsseldorf; and in his report on the trade of the district (Westphalia and the Rhenish Provinces), Mr. Consul Koenig (No. 4059, Ann. Series) gives some particulars of the company which is, conjointly with other German and Continental manufacturers, introducing "Owen Patent Glass Bottle Machine." The latter will, says the Consul, revolutionise the manufacture of glass bottles in all the factories, and he expects that the art of blowing glass bottles by hand will have become extinct in about ten years' time. The export trade of the Düsseldorf glass works is very large. The Rhenish Westphalian Coal Syndicate was unable to supply the Düsseldorf glass factory with sufficient coal last year, and the board of directors was forced to import very considerable amounts of coal from the United Kingdom at enhanced prices. There is now a regular trade of coal from the United Kingdom, chiefly from Newcastle, up the Rhine to Düsseldorf.

**DEATH OF M. JOSEPH MAES.**—M. Joseph Maes died at Antwerp on August 4 at an advanced age. He was one of the pioneers of photographic mechanical printing, and probably the first person to do collotype work on a cylindrical machine. He had a large establishment in the Bourse, and only a short time ago produced an excellent illustrated booklet on "Maritime Antwerp." M. Maes retired from active business life some time since. He was the author of the article on "Antwerp as it is," which he wrote expressly for this year's handbook of the Photographic Convention on the occasion of its cent visit to Belgium. He was president of the Antwerp section



"Association Belge de Photographie," and was present not only at the opening of the Brussels meeting, but also at the option given to the members by the Burgomaster at Antwerp on 10th ult. M. Maes was a kindly and courteous gentleman, and death has caused widespread regret among all who had the pleasure of his acquaintance.

**HOLIDAY BOOKLETS.**—The St. Catherine Press, Ltd., 8, York Buildings, Adelphi, London, W.C., have recently issued a series of illustrated booklets dealing with the districts of Frinton-on-Sea, Lytham, Lanark, and Peebles. These little guide books are tastefully got up and of convenient size, being easily carried in one's coat pocket. They supply the visitor with information as to hotel accommodation, etc., facilities for sport, and a brief description of the objects of interest in the towns and surrounding districts. Copies may be obtained free on application to the respective town clerks.

A DENVER READER of the "B. J.," Mr. J. Collier, who for many years past has conducted a business in the Colorado capital, sends us a book of views published by himself from his own negatives. The plates, particularly the interior views—the Courts of Justice, Government House, and other Denver buildings—are fine examples of technical photography, and secure very good reproduction at the hands of the block-maker and printer.

## Correspondence.

*Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*

*We do not undertake responsibility for the opinions expressed by our correspondents.*

### A FRAUD ON PHOTOGRAPHERS.

To the Editors.

Gentlemen,—The man who called upon your correspondent, "H.," is probably nearly related to a man who called upon me in November, 1905. He brought a card of introduction from a friend of mine (although how he obtained possession of it has always remained a mystery). He said he was a farmer about to leave the country, and then held, and wanted a number of 12 x 10 photographs taken, especially to please his wife, who was much attached to the place. He was a shortish man, about 45, and his general get-up made him very much like what he professed to be. He gave the name of Henry Forrester, and his address as Church Hill Farm, Ivinghoe, Bucks. Tring.

It was arranged that I should go and take the pictures the following day, and he was to meet me with a trap at Tring Station, and come to his place at Ivinghoe. Up to this time there was nothing to arouse suspicion, except perhaps that he had not inquired at the approximate cost would be. Just before he left, however, he mentioned that he had been to the cattle market that morning and run himself quite out of money. When I showed no inclination to rise to the occasion, he casually observed that he had a friend at the Temple who would give him a cheque for any amount, so I suggested that he had better go there and get it. It would not take long, and if he would allow me I should be pleased to lend him the money to get there. He hesitated, then expressed his willingness to show the amount, and I handed him sixpence.

The next day, I found it would be impossible for me to go on the day arranged, so wrote and suggested the following Monday. On Thursday afternoon I received an unsigned postcard (which had been posted in London) saying my visit must be postponed for the present, and on the Friday morning my letter was returned from Ivinghoe marked "Not known."

I shall try and induce the next farmer who calls upon me with a similar yarn to give me a sitting; perhaps then your correspondent may be able to exchange notes.—Yours truly,

F. A. BRIDGE.

1, Dalston Lane, London, N.E., August 8, 1908.

## Answers to Correspondents.

\**All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.*

\**Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.*

\**Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., 24, Wellington Street, Strand, London, W.C.*

\**For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.*

### PHOTOGRAPHS REGISTERED:—

Charles S. Harris, 77, London Road, Dover. *Photograph of the Tableau of the Final Performance, Dover Pageant.*  
John Pryce Blair, 19, Lavant Street, Petersfield, Hants. *Two Photographs of Haslemere Town Band.*

**CHROMIUM INTENSIFIER.**—I find that the chromium intensifier, when applied to some negatives, produces dark stains, which fade away if the negative is immersed for some time, but meantime the deposit may be more than desired. Please explain this.—ENTHU.

From your description of the stains, they are due to applying the process to imperfectly washed plates. If the stains are permanent, imperfect fixing is indicated; if they disappear by long soaking in the bleacher, then washing is imperfect, and traces of hypo remain in the film. When the stains appear strongly it is best to apply a fresh bleacher, as the solution is materially affected and exhausted by hypo.

**FIXING BATH, ETC.**—1. Will you kindly inform me if the hardening fixing bath recommended in "Blisters on Bromide," in your issue of the 31st ult., has any advantage over Prof. Namias' formula with acetate of soda which you gave in an issue some considerable time ago, and whether ordinary alum or chrome alum will do equally well as potash alum, and if not why not? 2. Can you recommend another intensifier than Lumière's pyro-nitrate of silver for Autochromes? That is so messy and stains so, and, moreover, often acts too quickly; I suppose more water with it would remedy this? Generally speaking, I think Autochromes are softer, more pleasing, and colours less crude and garish without intensification; but sometimes it is necessary. 3. I find that I can develop my Autochromes under the dark-room light without fogging—have got some excellent ones so done, but have difficulty in telling when to stop development. Can you tell me how to judge the plate by its appearance to know when to stop? If developed too much, I fancy the reversing bath eats too much away to get good results, and destroys detail (and colour) in high-lights, particularly whites and light blues. A friend tells me that in his experience it is difficult to over-expose the plates too much, and that the great thing is to give a full exposure and not to carry development too far. He, too, takes his plates to the light soon after developer is on, but, of course, does not expose them unduly to it. I use rodinal.—F. C. BRAY.

1. There are many fixing and hardening baths available, and we should not care to say which have special advantages. Chrome alum will probably do just as well as the other. 2. You can use a mercury intensifier, mercury and ferrous oxalate being the best. But we prefer the silver intensifier to any. Your troubles are probably due to allowing it to act too long. It should be thrown away as soon as it begins to appear yellow in colour. Our experience is that the majority of Autochromes require intensification, but that it is easy to overdo it. 3. We have no experience of judging the development by inspection, as we prefer working in the dark by time. We do not agree with your friend that it is difficult to over-expose the plates, as we have lost many from that cause. The best results are, however, to be obtained by full exposure and short development. This is the best way to obtain good whites. Of late

we have produced very satisfactory results by using Watkins' Autochrome meter, taking the speed of the plate as 2 and developing for 2 minutes instead of  $2\frac{1}{2}$ . One worker is very successful in producing landscapes with clouds, and his method is to give double the "correct" exposure and develop for half the usual time—that is, for  $1\frac{1}{4}$  minutes. These times are for the Lumière pyro-ammonia developer.

**AMIDOL.**—We use a large amount of amidol for developing bromides, and should be glad to know of anything that will allay the intense irritation of finger-tips caused by this developer.—P. C. L.

We are afraid we cannot prescribe a remedy, for such trouble is usually cured only by abandoning the developer. But the following are means of mitigating the suffering: Rub hands daily before commencing work with lanoline ("Burroughs Wellcome") so as to keep them soft. Well wash after work and again rub in lanoline, using also at times a lotion made as follows: Carbolic acid, 1 drim.; Wright's coal tar solution,  $\frac{1}{2}$  oz.; glycerine, 3 drims.; water, 12 ozs.

**SPECIMENS.**—Will you kindly inform me, through your "Answers to Correspondents," where I could secure some really high-class photographic specimens of portraiture, cabinet-size and whole-plate Imperials?—SPECIMEN.

We know of no firm which makes a special feature of supplying specimens, and possibly some would have compunction as to complying with such a request. You might try one or two of the enlarging and printing firms who work for the profession. See our advertisement pages.

**DYE PROCESS.**—Is it practicable, after staining a film of gelatine with pinatype dyes, sensitising with bichromate, and printing from a negative in place of a positive, to wash out the dye from the unaffected portions of the gelatine, and leave the hardened portions still stained. For my purpose I wish to proceed as above, but if impracticable I do not wish to waste time in experimenting.—H. F. S.

The process you suggest is on opposite lines to that of pinatype, in which process the dye stains the unexposed parts of the gelatine film. We advise you to state your requirements as to dyes to Messrs. Meister Lucius and Brünig, Hoeschst a/M., Germany, who will be able to advise you.

**J. T. T.**—Our own preference is certainly for A, since it is quicker in printing and less liable to breakage. The only advantage of V is the great equality of the light; for large negatives it would be better, but for all-round purposes the A system should give you more satisfaction.

**DEXTRINE MOUNTANT.**—Will you kindly help me, through the medium of your "Answers to Correspondents" column, in the following matter? I have recently been using a dextrine mountant made by boiling dextrine (pure white) in water, and then adding about 20 drops of oil of wintergreen to 30 ozs. of mountant. The result is generally acid, and will not keep more than a week. Should it be made alkali? If so, what is most suitable, and what preservative is most effective? Has a dextrine mountant made as above (acid), and used within a week, any ill-effects on keeping qualities of prints?—DEXTRINE.

You should use, say, three times the quantity of the oil of wintergreen. If the dextrine, through faulty manufacture, has more than a trace of acidity, the mountant should be neutralised with a little solution of carbonate of soda. We should hesitate to use acid mountant, such as you describe for P.O.P. prints, but we should not expect it to affect developed (bromide or gaslight) prints, provided they were properly washed free from hypo.

**OSBORNE, M/C.**—1. Yes, if you confine your work to bust portraits and three-quarter figures. Eighteen feet six is too short for groups and full-lengths unless a very short focus lens be employed, then the perspective will be very violent. 2. As shown in the sketch, it will if standing figures be attempted. It may, however, be somewhat ameliorated by using a diffusing screen of thin muslin at some distance from the figure 3. Buff or blue blinds will be suitable.

**J. E.**—We should recommend you to try the three following firms, who are wholesale manufacturers of this class of article: Arundel and Marshall, 27, Penn Street, Hoxton, London, N.; E. J. Brad-

street and Sons, 41, Chiswell Street, London, E.C.; Johns, Scott and Watts, Limited, 40-8, City Road, London, E.C.

**BOOK ON RETOUCHING.**—Will you be good enough to inform me the name of a small book published on retouching, finishing, and colouring; also price and where obtainable.—"FINISHER."

"Retouching," by Arthur Whiting (Dawbarn and Ward, 14, or "Retouching Negatives and Prints," by R. Johnson (Marion and Co., 2s.).

**MOUNTING ENLARGEMENTS ON THICK PAPER.**—We have had some 24 by 18 bromide enlargements made on thick rough drawing paper. We ordered them to be unmounted, as we considered the firm's charges for mounting were excessive. We have attempted to mount them ourselves with starch, but cannot get the picture to stick, since when laid on the mounts and well rubbed down they begin to rise at the edges after a few minutes, and then go off the board. Can you tell us how to do the work, as we do not care to send the pictures back to the enlargers?—A. G. AND CO.

Enlargements on thick drawing paper are not so easy to mount as small prints on thin paper, which explains the enlargement charges. However, you can do it for yourselves as follows: Make some thick starch paste and apply it evenly to the back of the picture with a sponge, rubbing it well into the paper. Allow it to rest for a few minutes to soak into the paper, and thoroughly expand it. Then apply a second coating, taking care that the edges are well covered, and lay on the mount, and well pressed contact, as in mounting small prints.

**D. V.**—Impossible for us to say, not knowing how well and how quickly you can do the things you mention. We may put it roughly at from 20s. to 25s.

**PRINTS.**—Formulae for the process have appeared in our issue of January 11, 1907.

**EMBOSSA.**—We do not know any firm, but should advise you to write Hyde and Co., 30, Duke Street, Chester, or write Messrs. Marion and Co., 22-23, Soho Square, W.C., with regard to obtaining one in Paris.

**X. Y. Z.**—We are sorry we cannot give you the address, beyond that it is in Germany. So far as we can ascertain, it has no agent in this country.

**O. O. O.**—Makers of lenses fix their own prices for them, and it is not within our province to comment upon them. You should recognise that anastigmatic lenses cannot be produced at the same price as ordinary R.R.s. Since the expiration of the Goerz patent some cheap forms of anastigmat have been put on the market, and very good they are, or such of them as have passed through our hands. Their price is moderate, and some of the dealers are in a position to allow a few days' trial of them before purchase.

**J. SIMCOX.**—From your somewhat vague description we are unable to locate the source of your trouble. If you send us two or three of the negatives we shall, no doubt, be able to assist you.

**CONSTANCE.**—Collodio-chloride prints may be blotted off with fear of injury, as the surface is as hard as that of albumen prints. They may also be dried before the fire, as there is no risk of film running. However, the prints should not be made absolutely dry, if they are dried by heat, as there may then be danger of the collodion film cracking.

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## SUMMARY.

measurement of the focal length and working aperture of a lens by a method of inspection only is the subject of an article by C. Whiteley, who describes a new method and apparatus devised by him. The method can be practised by anyone, and the test requires only a minute or two. (P. 638.)

On p. 635 some notes for the encouragement of the mentally-minded worker. As is pointed out, such work can be made interesting, and the labour of entering notes of the results greatly lightened, by employing a system of codifying the notes.

E. König in a note which he sends to the "B.J.," draws attention to the advantages of the pyrocatéchine developer and to its simplicity in use. (P. 636.)

The usefulness of manipulation in regard to bromides to be sulphidised is the subject of a note on page 634.

late Mr. F. H. Wenham. We publish an account of the many inventions of the late Mr. Wenham. (P. 641.)

Austrian workers have published some results of examining photographic plates, both as to the amount of silver contained in them and as to their relative tendency to solarise. (P. 640.)

Developmental calculators, developing tanks, printing screens, cinematographs are among the patents of the week. (P. 647.)

and a half per cent. off P.O.P. Mr. G. Watmough Webster figures for the saving effected by recovering silver from fixing-liquors and wash-waters. (P. 644.)

F. C. Tilney, in an article on page 636, points out the importance of photographers (who value the fitness of their premises) of the study of antique furniture. He draws attention to the opportunity now offered at the Franco-British Exhibition of studying styles in furnishing. (P. 636.)

Photographs for the two London photographic exhibitions should be sent in within the next few days. (P. 634.)

## EX CATHEDRA.

### The Two Exhibitions.

The receiving days for the Photographic Salon and Royal Photographic Society's Exhibition are close enough upon us to deserve a final word of reminder to those who are sending to Pall Mall and the New Gallery. The only day for delivering frames by hand to the Salon is Monday, the 31st, from 10 a.m. to 6 p.m. at 5A, Pall Mall East. If this cannot be done the pictures must be sent properly packed to Messrs. W. Whiteley, Ltd., Queen's Road, Bayswater, W., by Thursday, the 27th, at the latest, marked outside, "For the Photographic Salon." In the case of the Royal this year exhibits are to be delivered by hand, not to the New Gallery as hitherto, but to Messrs. Bradley and Co., 81, Charlotte Street, Fitzroy Square, W., on Wednesday, September 2, between 10 a.m. and 6 p.m. Parcels sent by rail and carrier must arrive the day before, viz., Tuesday, September 1, also at Messrs Bradley's.

\* \* \*

### Trade Censorship of Postcards.

We are glad to see that a Postcard Printers and Publishers' Protection Association, which has been recently formed at Blackpool under the presidency of Mr. Edwin Bamforth, of Holmfirth, has been quick to place upon its list of agenda the question of prohibiting vulgar or indecent picture postcards. It suggests a preventive policy in place of—or say as an auxiliary to—the present punitive measures taken by the police. It proposes that when copyright is applied for, cards should be subjected to censorship, the grant of copyright giving the right of sale throughout the country. This proposal implies, of course, the creation of a new office akin to that of the Censor of Plays, who is, by the way, not regarded with universal favour in the theatrical world. Unfortunately, the suggested scheme breaks down in the case of cards in regard to which no application for copyright is made. Apparently, therefore, the only result would be the issue of cards of an objectionable character unprotected by copyright. In other words such cards may be copied indiscriminately, and the evil would thus be propagated.

\* \* \*

### Mounting with Gutta-percha.

A writer in a contemporary, Mr. E. R. McDonald, a short time ago advocated a method of dry-mounting prints with gutta-percha tissue, which method seems to have met with approval, seeing that some dealers are now stocking tissue for the purpose. The process is very simple, and we found it work admirably at our first attempt. Whether it is advisable as a permanent method is another question that only time and experience will determine. Indiarubber as

st. a mountant has not been a success, and whether gutta-percha is superior or not remains to be proved. The method is as follows:—A piece of thin tissue is cut slightly larger than the print, and smoothed out on a pad of damp blotting-paper, all wrinkles being rubbed out with a dry cloth. The print is laid upon the tissue face upwards, and over all is placed a sheet of clean paper rather larger than the tissue. All is then ironed down firmly with a hot flat-iron. On lifting up the print the tissue will be found firmly attached to the back, while its edges are attached to the paper cover. The margins of the print can easily be seen through the tissue, and the next step is to trim the whole just at or inside the margin, cutting through tissue, print, and paper. The paper cover is then loose, and can be removed, and all that remains to be done is to lay the backed print down on the mount, put a fresh piece of paper over it, and iron all down until the print is firmly adherent at every point. There is no trouble anywhere in the process if the instructions are followed, and the total time occupied is very short. As already pointed out, the permanency of the process has to be proved, but at the worst it is a useful quick method of mounting for prints that are only of temporary importance.

\* \* \*

#### Spots and Markings on Bromides.

In the "Information" column of the "St. Louis and Canadian Photographer," a letter from the Kodak Company attributes certain spots on some re-developed bromide prints to fixing the prints face downwards in the hypo bath. When in this position air-bells may cling to the film side and escape notice, and then various unfixed spots are left which reveal themselves if the print is subsequently treated with a bleaching solution. The application of a bleacher such as potassium ferricyanide and potassium bromide is a very good test for perfect fixing and washing, and, we may add, for finger marks due to overmuch handling of the printing paper. Very often when using the processes of sulphide toning or re-development we come across unmistakable evidences of careless manipulation of the prints, especially in the fixing bath. Spots due to air-bells are common, almost as much so as beautifully detailed finger prints. Often, too, the print shows rectangular markings, proving that it has been protected from the full action of the fixing bath by the corner of another print that has adhered to it. A most certain way of spoiling bromide or gaslight prints is to fix a number one after the other in a shallow dish containing the hypo. This is especially the case with gaslight prints, for they are made and developed so quickly that before one is fixed another is thrown in on the top of it. This is a very common cause of markings, and also of development stains. If a number of prints are to be treated a deep dish is essential, and each print should be slipped under the fixer face upwards. When the next print is ready it should be treated similarly, the previous one being turned over face down. In this way we can be certain that the film of a partially fixed print will never come into contact with a second one fresh from the developer.

\* \* \*

#### The Product of Sulphide Toning.

Many references have been made lately to the fact that the brown deposit formed by ordinary methods of sulphide toning is a colloidal compound soluble in hot water. A solution made by boiling toned images in distilled water is a deep brown in colour, and passes readily through any ordinary filter paper. Even if filtered with the aid of a pump through the hardest and closest makes of filter

papers obtainable, very little solid matter is retained, a dark brown solution is obtained that very slowly deposits silver sulphide on standing for a long time. Sheppard, in his Bolt Court lectures on "The Chemistry and Physics of Colloids," referred to the fact that earthenware filters of the kind used in bacteriology may retain the colloidal particles of a hydrosol, therefore we thought it worth while to try the effect of such a filter on a sulphide solution. We took a solution that had already been passed through a double thickness of hard filter paper and filtered it again through porcelain, with the result that a somewhat lighter coloured solution was obtained. Whether this filtrate contained any silver is not known. There is much silver than in the original solution, so that it is evident that the porcelain filter has stopped a good proportion of the colloidal particles. The colour of the filtrate may be partly due to colloidal sulphide, but it is probable that it is mainly the effect of the oxidation products of the developer originally used. On evaporating the solution to dryness a red-brown mass is produced. On treating this with nitric acid, again evaporating, and then treating with distilled water and filtering, a reddish solution is obtained which contains extremely minute traces of silver nitrate. Though small in quantity there is no doubt of its presence, therefore it appears that some of the colloidal particles must be very minute indeed.

\* \* \*

#### A Moral for Trade Photographers.

The "Fine Art Trade Journal" mentions an incident which has its parallel in the photographic trade. A picture framer received in the usual way of business some two prints for framing. They were duly framed and not called for at the time appointed. More than a month elapsed and they were still unclaimed. The framer exercised his moral, although not legal, right, and offered them for sale, for the purpose of recouping himself the cost of the framing. One of the two prints was sold, and a day or two later the vendor received a letter from a firm of publishers demanding damages for several piratical copies of a copyright picture. Of course, in such circumstances only nominal damages could be recovered, but there is all the annoyance of possible litigation and the resulting bill of costs. The moral of the story is obvious. If you do decide (as you may do) to take the law into your own hands in regard to a picture frame, an enlargement, or a miniature, beware of a worse legal pitfall.

\* \* \*

#### 'The Hon. Sec.'

The naïve suggestion is made by the Hon. Sec., that all secretaries who have been, say, ten years in office in a club of good standing should be granted the fellowship of the R.P.S. From the fact that many secretaries of provincial societies are not members of the R.P.S., and therefore cannot receive the fellowship, it may be suggested that even those who are members will probably be expected to show other qualifications than the fact that they have been secretaries of some one society for ten years. A very experienced secretary may have made no contribution to photographic knowledge, done nothing to disseminate it, and made a complete failure as a photographer. He may be an expert at organising Saturday outings, at collecting lecturers together for the winter session, and at persuading his committee and fellow members generally to follow him in all things; but these gifts are no qualifications for the fellowship of the R.P.S., even if practised



twenty years. Another suggestion is that good secretaries should receive an honorarium to induce them to retain their posts. This is as objectionable as the other suggestion is absurd. A paid secretary is one thing—he is a luxury that very few societies can afford—but an elected honorary secretary with an honorarium is a different thing altogether, and one that societies in general are wise to taboo. A point that seems to be lost sight of is the fact that it is not necessarily a good thing for a society to have the same secretary for anything like ten years. If there is only one man in the society capable of filling the post the best thing to do is to wind up the society. dependent on one man it is not worthy the name of the society or club. Two or three years is quite long enough for one man to hold the post. Longer periods work the honorary principle to death, and usually ruin the society.

## RECORDING THE RESULTS OF EXPERIMENTS.

IN spite of the many important instances of "applied photography"—and scarce a week passes but there is recorded some fresh way in which the camera is harnessed to the service of industry or of science—there are still many people who practise photography for love, not of the results they obtain, but of the processes they employ. We are prepared for the suggestion of some cynic of the "pictorial" school to the effect that in the nature of things this must be so, since the photographic product of the labours put forward by our man of processes cannot by any remote chance be of a kind to excite the admiration even of its creator. Letting the aspersion pass, it is nevertheless a cause for congratulation that there are still some whose enthusiasm is not for art, not even for a technically good photograph, but for the ways and means by which these latter are produced. We admit that in comparison with the old days his species is rare enough. The haste for prints and the short cuts by which they are obtained has turned the young generation in other directions, and the "photographer" used in the amateur sense now means something quite different from its signification, say, twenty-five or even ten years ago. Nevertheless, many of the steps towards the present state of facility were made possible—although they were rarely contemplated—by the workers whose chief interest in photography centred in the opportunity for experiment and in the fascination of obtaining a certain effect by a certain modification of the then existing methods. We would not wish to see this section of the photographic public become extinct, or swept within the walls of factories, there to work their right designs solely for commercial ends. Photography as an industry, we venture to think, is bound to suffer by the withdrawal of independent experiment, and our present object, therefore, is to drop a hint or two, solely on the practical side, which may encourage such experimental work because suggestive of means of carrying it out and recording it with less labour.

We are now writing of purely photographic experiment such as any one without systematic chemical training may well do, and therefore it will be understood that much of it will consist of treatment of various kinds applied to negatives or prints. Our first hint may, therefore, be that much labour in the way of recording what is tried and found will be saved by using some system of code by which one or two numbers pencilled on the back of the print will fully describe what has been done to it. Thus let us suppose, by way of example, that we are making experiments on sulphide toning with various leathers, various "sulphiding" formulæ, and possibly

other variations of the standard process. We will, therefore, denote one bleach formula by B1, another by B2, whilst similarly our sulphide mixtures may be denoted by S1, S2, and so on. Thus a given method of treatment is quickly pencilled on each print, thus, B2 S1, or thus, B1 M S2, this latter case corresponding, say, with the use of an intermediate bath of metabisulphite, or, if the effect of varying time of washing be in course of study, the entry may read B1 W15 S2.

A very good example of the convenience of some such system as this may be found in the paper by Mr. R. J. Wallace on orthochromatic sensitisers which we printed some month or two ago. Mr. Wallace used a key system to plan out a set of experiments conveniently, and to mark the test plates and to record the results quickly.

As regards the actual negatives to be made, the best plan, no doubt, is to make use of a graduated test strip obtained by exposure in a sector machine. But the treatment of such test strips is, perhaps, hardly the finest inducement to prosecute experimental work, and therefore we recommend a combination of a negative and test strip obtained by making each graduated patch a complete negative or positive in miniature. This can be very conveniently done by mounting a few short strips of cinematograph film on a glass plate, selecting positive or negative according to one's requirements in the plates or prints to be printed from them. The series of tiny pictures—sixteen will go on a quarter-plate—are then made of different opacity by masking with tracing paper or papier minéral, a number being written on each patch. This supplies a useful and at the same time interesting test plate from which to print off negatives or positives for treatment. If a suitable subject be selected, the pictures in, say, 10ft. of cinematograph negative or positive film may be taken as of uniform density.

As regards the actual marking of plates according to the code suggested above, perhaps the best method of all is to allow the light to impress the necessary figures at the time of the exposure. This may be done by interposing between the test plate and the sensitive emulsion a thin film of celluloid with the numbers and letters written thereon in ink. The plate is thus indelibly marked, and more easily than by writing on the film. There is, of course, no particular merit in adopting this or any other method: our reason for suggesting it is that it is quick, certain, and avoids the tedious writing on plates by hand when in the dark-room.

An alternative form of test plate that is at times very useful can be prepared with the aid of a repeating back that will produce, say, twelve small images of the same subject on a quarter-plate. A graduated series of exposures can be given, so that each image represents a different effect of exposure. Prints or copies from the resulting negative will then show the various effects of under- and over-exposure, and will be very useful for the trial of various toning methods to test the kind of negative best suited to the process.

A negative made up from cinematograph films, as before described, but without the overlay of tracing paper, is also very useful for preparing enlargements. These can afterwards be cut up and the different prints can be submitted to various methods of treatment for the sake of comparing effects.

In conclusion, we would impress all would-be experimenters with the necessity for keeping full and complete records of their experiments with the results. Too often no record is kept, especially when only unsatisfactory results have been obtained, then later on the work has either to be done again or the experimenter is tempted to rely on a vague memory of results that as often as not is quite deceptive.

## THE PYROCATECHIN DEVELOPER.

I SHOULD like to draw the attention of photographers more closely to the little-used pyrocatechin developer. Pyrocatechin, chemically is a dihydroxyphenol of the formula  $C_6H_4(OH)_2$ ; that is to say its composition is identical with that of hydroquinone; but the two compounds differ in their constitution, the relative position of the OH group in the benzene nucleus being different. Used in conjunction with potash carbonate or soda carbonate, pyrocatechin works with moderate energy as a developer, but when compounded with caustic soda or potash its action is vigorous. If one only of the hydroxyl group be saturated by addition of the correct proportion of caustic soda, a developer is obtained which behaves exactly like one prepared with the carbonate of soda or potash. If, however, the two groups are replaced by sodium or potassium by further addition of the respective caustic alkali, the action of the developer is as strong as can be desired; in fact, in the majority of cases, too powerful. Considerable experience with the developer has led me to the use of the following formula, which may be strongly recommended. An important point in compounding it is to use the caustic alkali in *exactly* the proportion given. It is better to add the caustic soda from a solution of known strength, such as is commercially obtainable. Thus, for the caustic potash solution of 32 per cent., 87.5 gms. solution is taken in place of 28 gms. of the pure (100 per cent.) solid alkali. Commercial solid caustic potash is never 100 per cent.

A. Pyrocatechin.....	55 gms.	480 grs.
Sodium sulphite cryst. ....	35 "	300 "
Water to make.....	500 ccs.	10 oz.
B. Caustic soda 100 per cent .....	28 gms.	245 grs.
Sodium sulphite crystal.....	150 "	3 oz.
Water to make.....	500 ccs.	10 oz.

The volume of each separate solution should thus be 500 ccs. To make up the developer the following proportions are taken:—

A 10 ccs.	B 10 ccs.	water 150-250 ccs.
or, A $\frac{1}{2}$ oz. (fl)	B $\frac{1}{2}$ oz. (fl)	water 4 to 6 oz.

Using the smallest proportion water given above (150 ccs. 4 ozs.) greater density is very easily obtained.

The chemist will readily see that in this developer the hydroxyl group of the pyrocatechin is entirely, and the other half, saturated. If a weaker acting developer is required, the following may be made up:—

A 15 ccs.	B, 10 ccs.	water 200 ccs.
or, A $\frac{3}{4}$ oz.	B, $\frac{1}{2}$ oz. (fl)	water 10 oz.

the composition of which, when applied to the plate, corresponds with the formula  $C_6H_4(OH)(ONa)$ . On the other hand, a more energetic developer is produced by taking solutions as follows:—

A 10 ccs.	B 15 ccs.	water 200 ccs.
or, A $\frac{1}{2}$ oz. (fl)	B $\frac{3}{4}$ oz. (fl)	water 10 oz.

This developer approximately corresponds with the formula  $C_6H_4(ONa)_2$ .

The chief advantages of the pyrocatechin developer are the excellent keeping qualities of the separate solutions, its quick action, its freedom from fog, and its ready adaptability to the constraint with potassium bromide.

Any required degree of density can be got by varying the time of development and the strength of the developer.

For the development of lantern-plates more water than indicated above should be added.

A last point which must not be lost sight of is that the sodium sulphite must be divided between the two solutions, for the reason that if too concentrated a solution is prepared an insoluble compound with the pyrocatechin is formed.

Photographers who try the above formulæ will find the pyrocatechin possesses great "Abstimbarkeit" (as we say in Germany), that is, adaptability for restraint by variation in the amount of alkali and the addition of potassium bromide.

DR. E. KÖNIG

## ANTIQUE FURNITURE AS A STUDY FOR PHOTOGRAPHERS.

WHEN the proper background has been rolled down, the armchair wheeled into position, and the balustrade effectively placed, the average portrait photographer may think he has done enough for his money in the way of the "setting" of his figures. He can scarcely be expected to throw in with "half-dozen cabs." the representations of genuine antiques in the furniture line; nor could it even be expected of him that such accessories as do appear upon his prints should be guaranteed trustworthy in all respects. Nevertheless, there is something in "style," and since artistically furnished reception rooms and studios are the fashion, it is wisdom to avoid solecism and anachronism as much as possible in these matters, lest some sitter who knows should fall foul of a Wardour Street nondescript. Everything should be cultivated that is likely to make a favourable impression upon the emotions of sitters. Clients should be made to feel interest and pleasure in their visits: they should go away with the "do it again" feeling at high pressure.

The appointments of the studio are largely concerned in the invoking of this feeling; but it by no means follows that those appointments must be costly and rare. All that is required is decent taste leaning toward the simple side, and some rudimentary knowledge of furniture and interiors historically considered. Even the history need not extend far back; but there should be knowledge enough to ensure a fitting harmony. It gives one a

shock to find an oak chest purporting to be Jacobean flanked by a gimcrack three-legged bamboo flower-vase-stand from Tarragona. If polished wood furniture is used it is as well to keep the "fumed oak" out of it altogether; and the modern "new art" contrivances will look abhorrent beside Chippendale chairs and Victorian turned work. When these objects figure in the photographer's prints the question is more important than ever. The oak chest may quite fittingly appear upon the same print as the baronial window background; but the "new art" writing-desk with heart-shaped holes sawn out of it, looks silly standing before the pictured column and looped curtain, with the thunder-cloud and lake in the distance. As a rule, when the realisation of walls, panelling, or furniture is attempted in distemper, the result is beneath criticism. These matters are a by-interest of the photographic profession, and therefore do not always receive the consideration they deserve. That there are not a few portraitists who do display a keen interest and a profound knowledge of architectural styles, in antique furniture and objets d'art, nobody denies; but as a rule the photographer is content to take on trust the baronial windows, panelling, and so forth, just as he receives them from the makers of this valuable "property," and answers the questions asked."

As to property balustrades, sundials, garden seats, and the curious pedestal arrangements which in the seventies were used



the long-suffering sitter to droop his weary hand over: all these shams, if cleverly made, may be as good photographically as the genuine things; but they are nothing for the photographer to boast about. He cannot "spread himself" about them in the lecturer's well-known way:—"Ah! I'm glad you like that. It's a fine old example of . . . There's a curious history attached to that. It caught my eye once in . . ." And so on. Supposing, however, that the object in question were an authentic appendable mahogany urn, such as may be seen at the Franco-Italian Exhibition, he might excusably enlarge upon its parts. All who are interested, or who are anxious to be interested, in a fascinating subject, might do worse than keep it in view when they are at the Shepherd's Bush exhibition. They would, of course, do infinitely better at the Wallace Gallery, and later still at South Kensington; but people do not seem to resort to those places unless they are either school children, foreign tourists, or pedantic specialists. All the world goes to "Franco," however, and therefore a special point is here made of the loan collection of furniture, which offers a fairly representative survey of historic styles.

People who have recourse to the furnished interior as a background, and who wish to know something more of the subject on the background-artist divulges, can see here the genuine modelling of a "Georgian" room; a Queen Anne room; and a William and Mary room; the last having also some real Grinling Gibbons carving *in situ*. That fact calls to mind that in another case some genuine Grinling Gibbons carving is laid out for inspection upon the floor, over a modern Oriental carpet. Such aicism would not be permitted in a continental exhibit; and it shows the difference between the rough and ready British, and more tactful Franco departments. Messrs. Hamptons atone this by their excellently carried out model—copy, rather—at scale of two-thirds, of the great Banqueting Hall at Hatfield. This is the feeling and colour of the monumental style of a past is quite convincing. It suffers only in one respect perhaps, namely, that the genuine pieces of furniture which it sets off, of course, not at two-thirds scale, and, therefore, the Hall itself, spacious and lofty as it is, looks like a good sized room with *petite* Tudor embellishments. Among other reproductions of worth examination are the work-table of Louis XVI. and "Tenture" of Marie Antoinette; that is, the tent-like hangings that were disposed longwise over the couches and beds of this period, and fell from a crown arrangement above the head on the right side and over the feet on the left. The historical interest of some of the loan exhibits should not make them worth a visit to people concerned with pictorial matters. Such are the immense chairs of the "masters" of certain city companies; the Knole chair, wherein James I., most dread Sovereign, sat for his portrait, as well as other pieces remarkable for grace of form, ingenuity of construction, or striking associations: the gun of Alexander Selkirk for example.

There are five priceless Gobelin Tapestries, of the time of Louis XIV., almost worth their weight in gold, and "d'un goût ravissant," though perhaps in these advanced days their assessment is a little elusive. But the modes and methods of the romantic past are not only charming and interest in themselves. To photographers who are concerned with pictorial representation, either in theatrical photography or for the mere love of the art of the past, they are a never-ending study. Such students will find this part of the exhibition of distinct value. The lighter and fanciful rococo, the heavier "baroque," both disposed to kick over the heels at times, but charming in their wantonness; the seemingly propriety of "renaissance" of all kinds, of which differing expressions may be compared in some of the buildings in the grounds, and the little bit of real stuff in the Georgian room; "Queen Anne" style, with its tapestry upholstery, and its politude which had not arrived at Georgian grace; the

"William and Mary" style, revelling in surface decoration and japanning; the mighty "Stuart," just the reverse of Stuart costume, which was frivolous; all this is highly educative, and to go through it with a purpose in view is far less fatiguing than to adopt the too common museum slouch which says so eloquently "all this old stuff doesn't interest me."

When once the Rubicon is crossed the subject becomes fascinating. Surely it is of interest to know, for example, that the Greek chair with its legs curving out, upon which our professional beauties so often disport in so-called classic garb, owes its design to the elephants' tusks which originally served it for legs. It is *sui generis*, the legs of the couches of this period being invariably turned and of short proportion. Would it not surprise some to learn that we were importing Norway pines and Oriental carpets in the thirteenth century? In those days there were no banks, so the treasure was kept in chests. Upon these chests folk sat, ate, slept, worked, and played. No wonder there are still plenty about, for they held on till much more recent times. In the very old days there was little else in the way of furniture, except wondrous bedsteads and tresselled dining tables for the wealthy. By the development of a back the chest became a settle; by developing legs it was becoming a cabinet. The amateur who photographs in cathedrals occasionally sees large semicircular chests. Does he guess that these are cope-chests in which the bedizen copes were spread out flat one over the other? It will have been noticed that woodwork was embellished with architectural design—window tracery in Gothic times, and later, all the elaborations of classic architecture. When this is understood the Wardour Street chip-carving antique will be suspicioned.

With the renaissance and its imitation architectural façades in furniture, sculptured figures came into fashion, and the sixteenth century saw the culmination of the beautiful art of sculptured wood. Venice set another fashion, that of gilding furniture, and marquetry flourished under William and Mary. But the most astounding feats in cabinet work were performed under the patronage of Louis XIV., who established the "Gobelins" tapestry factory and pressed all the available talent and skill into his service for the production of great and exquisite work. The name of Boulle is famous for the employment of tortoiseshell and brass in the manufacture of tables, consoles, and armoires. Boulle work did not supplant the oak of Tudor time until a century later in England, where the carving of Grinling Gibbons and the architecture of Wren were contemporary. The former is remarkable for its absolutely sure cutting of immense swags of fruit and flowers, in soft wood, with a precision and ease and dexterity that will perhaps never be surpassed. The seventeenth century in France brought a new development. This was the Rococo (*rocaille coquille*), a style of ornament suggested by the shapes and curves of rocks and shells. Its lowest and latest debasement may be seen in the decorations adopted by a well-known firm of restaurateurs, and there is much of a bad sort in the bandstands and similar erections at Shepherd's Bush, where its first cousin, the Baroque, is also rampant. But let not these wholesale conglomerations of nondescript curlywigs be thought proper examples of the rococo. It has been the fashion ever since the formation of the Morris cult and during the reign of the arid "new art" to turn with repugnance from everything that flourished under Le Roi Soleil, and rococo has been the pet abomination of every one aspiring to "culchar." The attempt to design a piece is a wholesome corrective of this nausea. The style has certainly been frightfully abused, because it is so easy of abuse. Its inconsequence and want of "growth" has made it anathema at South Kensington, where ornament is only recognised as such when it pretends to be a vegetable. The finest rococo work has a grace and charm, and a freedom from logical obligations (which are millstones) unsurpassed by any pure system of ornament since the days of savagery, when ornament was purest of all. Its curves and conformations display to the best

advantage the heavy, thick, and pure gold with which it was covered in the days of Berain. The eighteenth century gave us Chippendale, Sheraton, Heppelwhite, the brothers Adam, and others, the characteristics of whose work are fairly well-known. These times produced craftsmanship which it seems hopeless to look for again. The wood they employed, the taste and grace displayed in design, the perfection of workmanship, the lightness

and strength which appears to defy time, the marvellous ingenuity of construction that permitted surprises and acrobatics almost automatically on the part of a piece of furniture and the smoothness and firmness of all such action: these are the most obvious characteristics of cabinet work of a past day when the labourer loved the work of his hand and made of it veritably a fine art.

F. C. TILNEY

## A SCALE LENS METER.

In the "B.J." for April 17 I described a very simple method of measuring the effective diaphragm aperture with the aid of a graduated scale laid across the lens hood, but the article had no sooner appeared than it became evident to me that this method of using a scale was capable of amplification, and that by the use of scales both in front and behind the lens it should be possible to measure not merely the effective aperture, but also the  $f$  number of the aperture and the focal length. The principles upon which this method of measurement depend are as follows:—

In Fig. 1 *L* is a diagrammatic representation of an objective, and against its hood is placed a broad divided scale *H* of the type described in my former article. The edges of the stop aperture *ss* can be sighted along the lines *a* and *b* in the manner described before, and thus we can determine the effective aperture to be a little over 1.7 inches, say 1.72. The scale can be

division on the first scale *C* and the fifteenth on the second, *D*, will appear to be in alignment with the right hand edge of the aperture. Similarly, when we sight along *b*, the 43rd division on *C* and the 36th on *D* will appear to be in alignment with the left-hand edge. We can therefore see 43 - 8, or 35 divisions of the scale *C*, and 36 - 15, or 21 divisions, of the second scale *D*. In other words, we see 14 divisions more on the first scale *C* than on the second *D*.

If from *o* on scale *D* we draw the line *or*, parallel with *np*, this will intersect *C* at *r* at the 29th division, and the distance *rm* is then 14 divisions, or equal to the difference between the amounts of each scale that we can see through the lens. It is obvious that the angle *mor* is then equal to the angle *ofp*, that is to say, *mor* is equal to the angular aperture of the lens. If, now we know the distance between the two scales *C* and *D*, and into this distance divide the distance *mr*, we obtain the

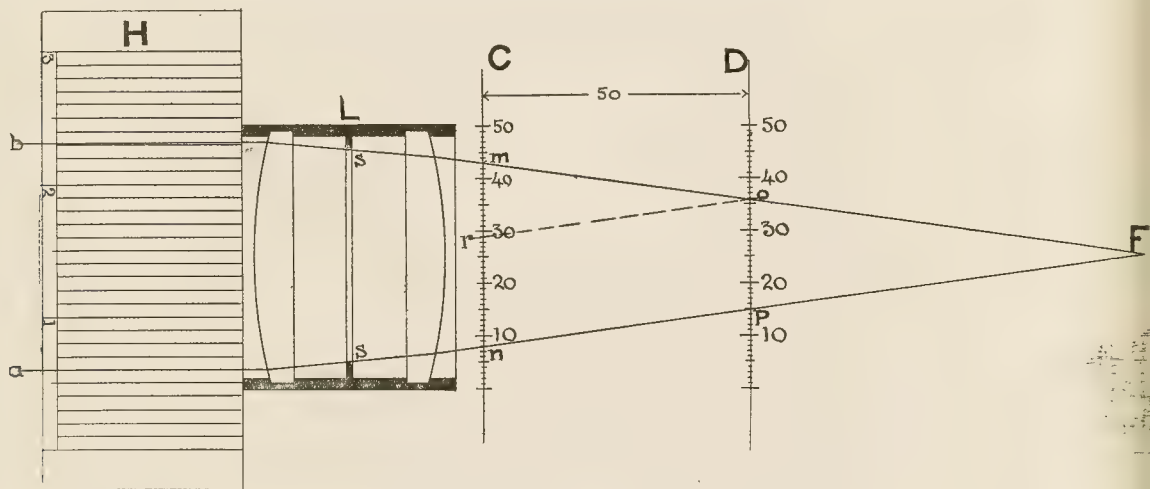


Fig. 1.

assumed to show inches and tenths, and it is evident that the aperture extends from the .6 division to a little beyond the 2.3 division, say 2.32, so that the total width is  $2.32 - .6$ , or 1.72 in.

Now, from the first principles of a lens action, it is clear that when we are looking along the lines *a* and *b* we are directly sighting the principal focus, *F*, of the lens. That is, if we put a point at *F*, it will appear directly in alignment with the edges of the stop aperture when we sight along *a* and *b*. The lines or rays along which we are sighting appear to be continuously parallel, though they are actually refracted by the lens so as to converge on to the point *F*.

Suppose we place at *C* and *D* behind the lens two exactly similar equally divided scales *C* and *D*. It is evident that the converging lines of sight will intersect *C* at *m* and *n* and *D* at *o* and *p*. We shall therefore see more of the first scale than of the second. When we sight along the line *a* on scale *H*, the eighth

number of the angular aperture. In the diagram the separation of the scales is equal to 50 divisions on either of them, therefore

the  $f$  number is  $\frac{50}{14}$ , or 3.57.

We have already measured the effective aperture on scale *H* and found it to be 1.72 inches. If we multiply this by the  $f$  number, we obtain the focal length, which works out at 6.3 inches in our example.

It is clear that there is a small error here. We are finding the focal length by multiplying the effective aperture not by the  $f$  number of the effective aperture, but by that of the angular aperture. These are not necessarily exactly the same, but in ordinary cases the difference is so small that it can be neglected quite justifiably. The error, if any, is in focal length only. The  $f$  number of the angular aperture is correct, and this



most important factor that we want to know. In fact, when apply any one of the various well-known methods of finding focal length, we only do so with the idea of ultimately finding the  $f$  number of the effective aperture, which we only obtain more or less approximately. The angular aperture is of greater importance, and by the method described in this article we obtain this in the first instance, and with a very close degree of accuracy.

On these principles we can devise a very simple and compact apparatus for measuring lenses, and the two next diagrams suggest

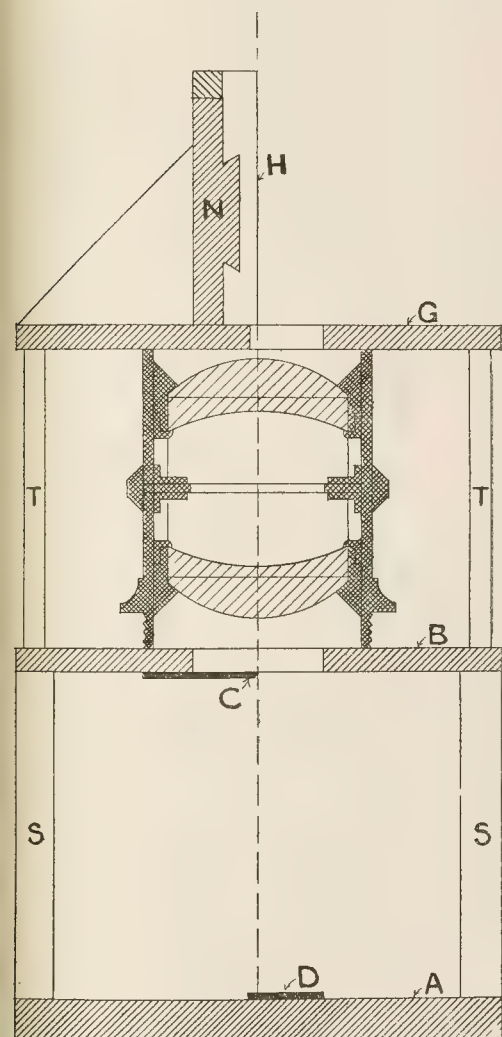


Fig. 2.

at a form which could be constructed very easily and at small cost.

In Fig. 2 we have a section of the lens meter. A is the base-board carrying the scale D, and scale C is mounted on a table B fixed at a definite known height above A and carried on vertical supports, SS, fixed at the angles. G is a second table, fixed on SS, TT, that telescope into SS. The distance between G and B can thus be regulated to exactly fit the objective, which is placed between them as shown.

Slots are cut in G and B, so that we can sight right through them past the scale C on to the scale D, and the scale H can be fixed vertically above the slot in G.

In Fig. 3 the apparatus is shown more fully in isometrical projection, and here a V is shown fixed to the upper side of B and the under side of G, so as to enable the objective to be exactly centred over the edges of the scales. The scale H is fitted with a vernier to permit accurate reading of the effective aperture, and the arrangement is rather more complex than the simple scale before described. E and F are two blocks that slide along the board N, which is fixed permanently at right angles to G.

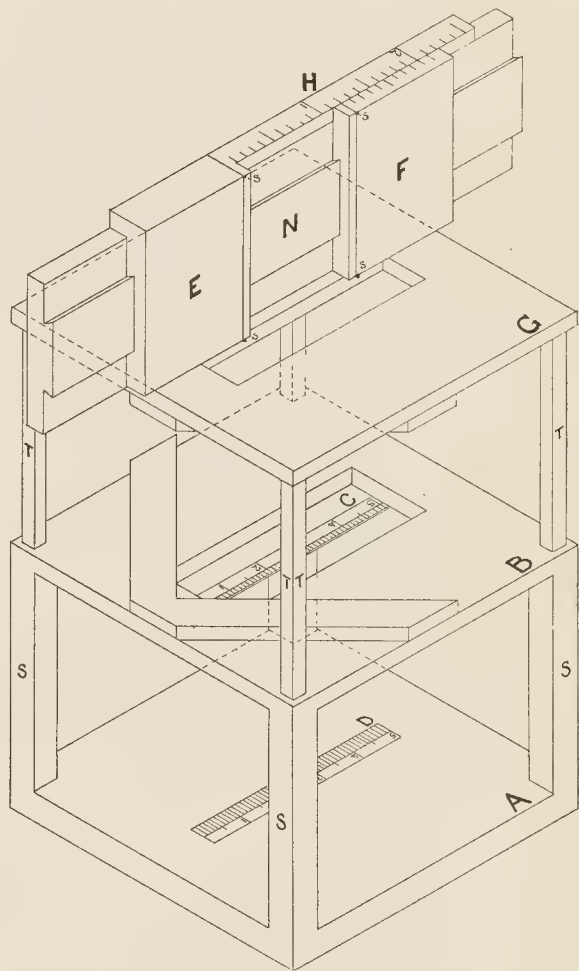


Fig. 3.

The scale H is attached to E, and moves with it, while the vernier is on the edge of F. The edges of the aperture are sighted along the lines ss ss, which can have small point sights at both ends, and if we first adjust E to bring ss in alignment with the edge of the aperture, and then similarly adjust F, the effective aperture can be read directly off the scale and vernier. The apparatus can be used in an upright position, as shown, and a person with good near sight will find no difficulty in reading the scales beyond the lens. If, however, such a difficulty is felt, it can be got over very easily by using a simple magnifier or reading lens. The scales C and D can be very finely divided, especially if a magnifier be used.

C. WELBORNE PIPER.

# SILVER IN COMMERCIAL DRY-PLATES AND THE LIMITS OF REVERSAL OF MODERN PLATES.

[Under this title we translate two papers which appear in the current issue of "Photographische Korrespondenz."—Eps. "B. J."] In the course of examining a so-called reversal-free plate it was observed that the ordinary rapid plate used for comparison with that of the special make showed much less tendency to solarisation than that specially prepared for the purpose. On repeating the experiment with a comparison plate of other origin it was found that in this case the reversal-free plate solarised at a later point than the ordinary plate. The limits of reversal of the two comparison plates must therefore be very different, and on a suggestion of Dr. J. M. Eder experiments were made with various commercial plates, in order to discover the number of meter-second-candles necessary in order to produce a clearly graduated reversal.

In a previous paper on reversal phenomena Eder has emphasised the fact that the amount of light necessary to cause reversal varies with different plates.<sup>1</sup> These numbers are, in fact, so widely separated in the case of seven different makes of plate that they fall between 15,000 meter-second-candles and 247,000. These numbers are only approximate, as time did not permit of an absolutely correct estimate, and further, such exact figures are of little interest, in view of the very great differences observed. It is to be noted that among the various rapid plates it is not the most sensitive which solarises most easily. Differences in the limits of solarisation must evidently be ascribed to something else than the sensitiveness. The dyes added to the emulsion no doubt play an unimportant part in the instances noticed, as the plates were not at all, or very weakly, dyed; at any rate non-orthochromatic in the ordinary sense. The emulsions with the smallest and highest solarisation limits were not sensitised according to the spectroscopic tests, their deep yellow colour being due to a high percentage of soda-iodide. The observation that silver-iodide favours solarisation of gelatinobromide of silver emulsions is in agreement with the experiments of Schumann.<sup>2</sup> We found that addition of potassium iodide to the emulsion before coating favoured the reversal of the image.

The exposures were made by means of a Welsbach burner and a Chapman Jones sensitometer. The Welsbach burner was found to be burning quite constantly during a time of two days. Its actinic value was obtained by comparison with a Hefner amyl-acetate lamp, and was found to be in two experiments 322 candles. The absolute light value in the different portions of the Chapman Jones sensitometer was ascertained as follows:—

(<sup>1</sup>) "Photographische Korrespondenz," 1902. Page 645.  
(<sup>2</sup>) Eder's "Jahrbuch," 1898. Page 391.

## ON THE QUANTITY OF SILVER SALTS IN COMMERCIAL DRY-PLATES.

In the course of the above experimental work it became of interest to us to ascertain the proportion of silver salt to gelatine in the modern highly sensitive emulsions, which data may possibly be of interest to others. Very few particulars as to the proportion of silver bromide to gelatine in commercial plates are to be found in photographic literature.<sup>4</sup> Hurter and Driffeld give the proportion of silver bromide as from 26 to 49 per cent. It appeared to us, however, of importance to consider whether the highly sensitive dry plates may not contain either too little or too much silver bromide. In order to obtain a negative of full density in the case of a plate containing very little silver halide there is the obvious necessity of a thick coating of emulsion. We have, however, observed that plates differ very greatly in the amount of emulsion which they carry. These variations, in the case of commercial plates, have amounted to from .425 to .627 gms. of emulsion per 100 sq. cm. An appreciably less proportion of silver bromide in the emulsion would not be compensated for by increasing the proportion of emulsion upon the plate in similar degree, and the plates would necessarily give weak nega-

(<sup>4</sup>) Eder's, "Handbuch der Photographie." Vol. III. Fifth edition. Page 76.

Half of a plate was exposed with the Scheiner sensitometer to the standard benzine lamp at a distance of one-third meter to one minute; the other was likewise exposed to the same lamp but behind a Chapman Jones sensitometer at a distance of half meter for 20 minutes. The following equal densities were then obtained—

Chapman Jones .....	15	...	14	...	13	...	12
Scheiner .....	12	...	10	...	8½	...	7

The absolute light values obtained by means of the Scheiner sensitometer in the various areas are known<sup>3</sup>, and by comparison of the corresponding densities the absolute light values of the respective areas of the Chapman Jones sensitometer were ascertained. This was confirmed as follows. Two different experiments gave approximately co-incident results. For a Hefner amyl-acetate lamp, the actinic brightness of which was 13.1 times as great as the Scheiner benzine lamp, the absolute light intensities of the various areas of the Chapman Jones sensitometer correspond to a distance of one meter and a time of exposure of one minute, that is as follows:—

Batch No. ....	16	15	14	13	12	11	10	9
Meter-second-candles .....	0.10	0.15	0.2	0.3	0.4	0.6	0.8	1.2
Batch No. ....	8	7	6	5	4	3	2	1
Meter-second-candles .....	1.6	2.4	3.2	4.8	6.4	9.6	12.8	19.2

The comparison plates were exposed to the Welsbach burner for one hour at one meter distance, and the reversed results, as well as the neutral effect, observed. The results obtained are given in the following table:—

Description of Plate.	Patch of Chapman Jones Sensitometer in which Reversal Begins.	Light (in Candle-meter-seconds) required for Reversal
German Plate I. ....	10	15,000
German Plate II. ....	2	247,000
Austrian Plate I. ....	6	62,000
Austrian Plate II. ....	9	23,000
English Plate I. ....	10	15,000
English Plate II. ....	7	46,000
French Plate. ....	6	62,000

From these figures it will be seen that the limits of reversal of the different plates now obtainable commercially show such great differences that attention may well be given to the technical means which can be used for the avoidance of this property in plate.

DR. H. TAPPEN.

(<sup>3</sup>) Eder's "Handbuch." Vol. III. Fifth edition. Page 215.

tives. For this reason the comparatively small proportion of silver halide given by Hurter and Driffeld appeared improbable in the case of the modern plates.

On the other hand, we have noticed in many experiments that emulsions which contain a large proportion of silver salts decompose extremely easily on long digestion by heat, to such an extent that the characteristic grain disappears, whilst emulsion with less silver bromide show a similar change less easily. As the modern ultra rapid plates are no doubt the result both of longer digestion and a higher temperature than formerly, it would appear that a very high proportion of silver salt is inadvisable in practice, apart from the fact that the dry-plate maker is anxious on the question of expense to use as little as possible of the silver salt.

The above anticipations have been confirmed by analysis. We found in the case of seven different varieties of commercial plates a proportion of silver halide of from 40 to 46 per cent; only one plate of Austrian origin had 36 per cent. This was evidently coated by hand, and had .346 gms. emulsion per 100 sq. cm.; it thus differed markedly from other makes.



All the analyses of the plates were carried out in the same way. About 200 ccs. of the emulsion was carefully measured and weighed when air-dry. It was then dried for two hours at 105 deg. C, in order to estimate the percentage of water, and then heated to 70 or 80 deg. C in a mixture of 100 ccs. of water and 10 ccs. nitric acid of 1.4 sp. gr., until the whole of the silver salt had precipitated. This precipitate was then dried on a Gooch crucible, washed with water and alcohol, dried at 140 deg. C to a constant weight. The following were the results obtained:—

Description of Plate.	Area in sq. cms.	Emulsion gms.	Water gms.	Silver halides gms.
French Plates.....	229.6	1.0043	0.0783	0.4261
English Plates I.....	230.3	0.9777	0.0812	0.3715
" ".....	231.2	1.0186	0.0881	0.3902
" ".....	178.0	0.8490	0.0808	0.3199
English Plates II.....	174.9	0.9398	0.0770	0.3729
German Plates I.....	232.5	1.1247	0.0983	0.4157
German Plates II.....	211.7	0.9155	0.0800	0.3358
Austrian Plates I.....	195.3	1.2248	0.0984	0.4893
Austrian Plates II.....	231.8	1.1870	0.0816	0.4743
Austrian Plates III.....	229.1	0.7934	0.0761	0.2610

Description of Plate.	Emulsion per 100 sq. cms. gms.	Per cent. of water in air-dry emulsion.	Per cent. of silver halides in dried emulsion.	Remainder gelatine. Per cent.
French Plates.....	0.4373	7.80	46.00	54.00
English Plates I.....	0.4248	8.30	41.44	58.56
" ".....	0.4406	8.65	41.93	58.07
" ".....	0.4770	9.52	41.64	58.36
English Plates II.....	0.5373	8.19	43.22	56.78
German Plates I.....	0.4838	8.74	40.50	59.50
German Plates II.....	0.4325	8.74	40.19	59.81
Austrian Plates I.....	0.6272	8.03	43.44	56.56
Austrian Plates II.....	0.5121	6.87	42.91	57.09
Austrian Plates III.....	0.3463	9.59	36.38	63.62

The fact that so few varieties of plates from the great number upon the market have been chosen may, perhaps, be remarked upon. We have, however, chosen the best-known and most widely used rapid emulsions, and it may perhaps be assumed that in general the proportion of silver salts in the modern dry plates lie between the limits above given.

H. TAPPEN.  
TH. REKASCHOW.

## THE LATE F. H. WENHAM.

the person of Francis Herbert Wenham, whose death we recorded in our last issue, the scientific world loses one of the most notable and original workers of the last century. For Mr. Wenham, well known as he was in scientific circles fifteen or twenty years ago, had largely outlived his reputation, though his sudden death at Folkestone early last week will have come as a shock to many who were intimately associated with him before his retirement from active life.

Born in Kensington in 1824, the son of an army surgeon, Mr. Wenham in boyhood developed decided mechanical tastes, and as a boy experimented with various devices. At the age of fifteen, after the death of his father, he entered a marine engineering firm at Bristol as a pupil, where he remained for five years. His introduction to engineering was with a firm which undertook the forging of the crank shaft of the steamship "Great Eastern," one of the earliest steam vessels in the Atlantic trade. It was a fact that the aid of James Nasmyth was called in, for this was the first work, to install a steam hammer in place of manual labour, and to an introduction of Nasmyth to Wenham, resulting in a friendship which lasted until the death of Mr. Nasmyth forty years afterwards. During this time Mr. Nasmyth took great interest in many of Mr. Wenham's later inventions.

Mr. Wenham's first work on the completion of his time at Bristol was a series of experiments on high pressure steam in tubular boilers for marine engines. The outcome of this was that he designed and, with the assistance of two mechanics, himself built a small steamer, on a backwater of the Thames, working at a pressure of 300lb. per square inch instead of the average maximum of 60lb. adopted at that time. He also adapted to the little steamer a greatly improved type of marine engine. The little vessel proved productive of some notable photographic results, for the late Mr. F. Frith, of Reigate, the founder of the well-known view publishing house which still bears his name, entered into an arrangement with Mr. Wenham to use the vessel out to Egypt, and make a trip up the Nile as far as the Second Cataract. This was in the year 1853, and the two travellers, accompanied by two other friends, were thus the first to undertake the taking of a series of photographs of Egyptian tombs and scenery by the wet collodion process, then first introduced by Scott Archer. It says something for the rapidity of Mr. Wenham, and his confidence in the newly introduced vessel, that he himself, with one assistant, sailed it by the Thames and the Woking Canal to Southampton and

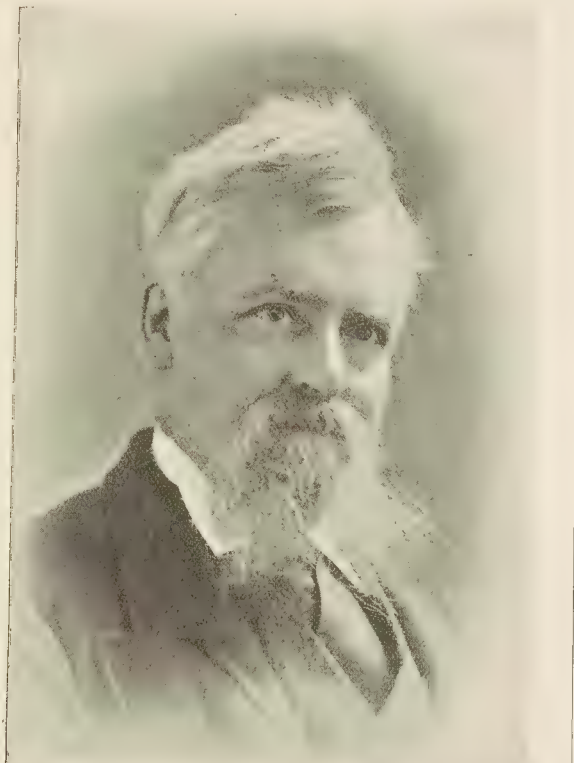
thence around the Lizard to Liverpool, where it was shipped on board a Mediterranean steamer to Alexandria. The voyage up the Nile included a visit to notable places of interest, and afforded plenty of opportunities for an inventive genius such as Mr. Wenham was. Thus many of the dark tombs were lighted by means of mirrors, which reflected and re-reflected the outside daylight to an extent which allowed of the inscriptions on the walls being photographed. Not only that, but the very food of the party had at times to be provided by Mr. Wenham, who years afterwards was accustomed to relate how his shot-gun and rifle found food for his companions, who were often glad to consume tough ducks and even curried young crocodiles. The present luxurious user of Kodak films and dry-plates can have little idea of the labours of the early collodion worker who, for example, would find his work stopped by a bottle of collodion evaporating with a short rapid fizz in a hot climate such as Egypt. On the return of the steamer to Alexandria, the reigning Pasha, Mohammed Ali, on hearing of the exploits of the steamer, offered to purchase her, provided that the vessel was certified as safe and reliable by the Pasha's Scotch engineer, and that the cabin door was enlarged sufficiently to allow the Pasha, an enormously stout man, to enter. The second condition was more easily fulfilled than the first, for the 300lb. pressure marine boiler was such an innovation at that time that great difficulty was found in convincing the engineer of its safety, which, however, was finally accomplished.

The photographic tour was prolonged to the Holy Land through the Desert by way of Mount Sinai, and afterwards through Jerusalem and Damascus to Beyrout. The series of photographs of both Egypt and Palestine, on their publication in London, had a large sale, and possibly were the first photographs to be publicly issued from collodion negatives.

On his return to England, Mr. Wenham was made director of the Panopticon of Science, an institution of popular recreation, which had a very short career owing to disputes among the proprietors. It was here that, amongst other photographic work, he constructed a special apparatus for enlarging, a method which at that time was practically unknown. The Panopticon stood on the site of the present Alhambra Theatre in Leicester Square.

Mr. Wenham next entered into partnership with a well-known engineer in Battersea, where he designed a gas-engine, which is believed to have been the first engine of its kind in

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this country. On the patent for this invention being found to conflict with a prior engine, the manufacture was discontinued, and Mr. Wenham then worked out and patented a hot-air engine, which, on discontinuing his partnership and entering into business on his own account, he raised to a high pitch of perfection. Several of these engines are still in use for pumping purposes. The next important invention was that of the compound principle in marine steam-engines, by the use of an auxiliary cylinder for superheating steam. The system was a great practical success, and enabled steamers trading between the South American States and the Clyde with cotton to travel twenty miles per hour instead of fifteen or sixteen as formerly, and to thus serve as blockade-runners at the time of the American Civil War. Unfortunately, it was discovered that a method somewhat similar in theory had been



THE LATE F. H. WENHAM.

published in the early part of the century by another inventor for a different class of vessel; and Mr. Wenham, who throughout his life would never take disputes as to his inventions into the law courts, turned his attention to other branches of applied science.

Whilst still engaged in his engineering pursuits, purely scientific studies, and optics in particular, had interested him for years previously. Many instruments and accessories, more especially for microscopic work, such as the binocular microscope, the paraboloid, etc., were now invented by him, and were described in numerous papers read before the microscopical societies. Perhaps the most important of Mr. Wenham's inventions at the time was the binocular microscope and the replacement in microscope objectives by single front, of the triple front as had been used previously. Mr. Wenham was at

this time engaged in constructing a 1-50th inch objective finding great difficulty in making a triple front of such minute size for this objective, it occurred to him to use a single front, and make the necessary corrections in the positive and middle combinations. He was greatly surprised at the result, but he found that it was absolutely necessary the single front should be of a specified thickness to obtain proper corrections of the whole of the objective. This was the first time that thickness had formed an element in correcting objectives. Mr. Wenham generally brought his inventions before the Microscopical and Optical Societies; but opticians of that time were chary in adopting new systems until an eminent firm became convinced of the simplicity and superiority of Mr. Wenham's inventions and publicly adopted them. All opticians followed suit, and in a very short time the triple objective fronts were obsolete, and binocular microscopes were highly popular in England and America, and remained so until the great change in microscopes introduced by Professor Abbe.

During this period he occupied the position of Vice-President of the Microscopical Society.

It may be here stated that the now popular oil immersion which has been brought to such perfection by the great German of Professor Abbe, was originally brought to the notice of the Microscopical Society by Mr. Wenham. He actually showed one of their meetings an objective which he termed a homogeneous lens, i.e., a lens attached to a threefold objective the cover glass of the object kept in contact with this lens by means of cedar oil. Mr. Wenham showed the object angulatum brilliantly defined by this oil-immersion objective, but, unfortunately, he did not at the time realize the great importance of the oil-immersion system in the matter of yielding greatly increased numerical aperture. A few years afterwards oil immersion was brought to the notice of the late Professor Abbe by the late Mr. Stevenson, with the result that the great mathematician worked out the perfect immersion systems now so universally adopted, and they for many years past entirely superseded water-immersion lenses.

In 1870 Mr. Wenham withdrew from the engineering business and on the death of Mr. Thomas Ross in 1870, being urged by his old friend Mr. Shadbolt, accepted the position of scientific adviser to the firm of Ross and Co. He here made many improvements in the microscopes and accessories produced by that firm. But his connection with Ross will perhaps be better remembered by his introduction of the once well-known Portable Symmetrical lenses. These lenses were an adaptation of Grubb's well-known Landscape lenses, produced by reducing the diameters, combining the lenses as doublets, and by using thickness as an element in their correction, thus obtaining diaphragms in close contact with the lens and giving great angle of view. These lenses were produced in a series of all fitting the same flange, and became exceedingly popular with landscape photographers; in fact, they entirely displaced the old single lenses of that period. Mr. Wenham never claimed anything original in the construction, always giving credit to Mr. Grubb for the main invention of a lens in which the flint was placed outside. He simply claimed that he brought the same lens out in a doublet and more portable form.

At this time Mr. Wenham entered into controversy with another well-known optician in regard to the Aplanatic lens which had been claimed as an English production. In his pages Mr. Wenham made it perfectly clear that this lens was a production of Steinheil of Munich, and that the English production was absolutely similar, except that it was composed of slightly different glasses.

Mr. Wenham remained as scientific adviser with Ross and Co. for about ten years, and on his retirement was replaced



Mr. Schroeder, the inventor of the concentric lens (the first of the modern anastigmats). While with Ross and Co. Mr. Wenham invented the well-known Wenham Shadowless (downward burning) Gas Lamp, which attained great success, not only in England, but in Europe and America. This lamp held the field in gas lighting until it was practically superseded by the electric light and the Welsbach lamps which came on the market some years afterwards.

It may also be stated that Mr. Wenham, while on the Council of the Aeronautical Society, of which his old friend Mr. Glaisher, F.R.S., also president of the R.P.S., was president, wrote many important papers on aeronautical subjects, and made many designs of aeroplanes, adopting as his model the flight of birds. It was very gratifying to him

a short time ago to receive high commendation from distinguished Americans engaged in aeronautical pursuits, to the effect that his writings and designs were being much discussed and followed up in America.

Mr. Wenham, finding his health somewhat shaken, and having private means, retired to Woking, where he devoted himself to mechanical experiments, including an improved piano-player, which he designed long before the American piano-players were thought of. Many notes and letters from his pen appeared in the scientific and mechanical Press during this period. His advice and help were constantly at the disposal of his fellows.

Mr. Wenham's health had for some time past been impaired, and his death, at Folkestone, on August 11, was due to heart failure. He had reached the ripe old age of eighty-five.

## THE SIZE OF STEREOSCOPIC PRINTS.

[The Permanent Commission of the Congress of Photography has been attacked by M. Chapellier recently in the "Photo-Revue" with a proposal to modify the recommendations made in 1891 relative to the size of stereoscopic prints. M. Chapellier observes that the apparatus actually used gives images of a very different size from those to which these recommendations apply, and that, therefore, these latter should be revised. In the following paper Dr. Moritz von Rohr, of Jena, who is a member of the Permanent Commission of the Congress and is, moreover, the greatest living authority on the optics of stereoscopy, has communicated in the "Photo-Revue" the following reply to M. Chapellier.]

With regard to the question of the form which should be prescribed for stereoscopic prints or transparencies, it is advisable first to take a brief glance over the history of the development of the stereoscope. So far as concerns the earliest period, it can be said that it commenced to be interesting about 1851, at the time when J. Duboscq first devised, in accordance with the wishes of Sir David Brewster, a really useful stereoscope. The problem which he sought to solve in this instrument was that of fitting two relatively large images by making use of the effect of prismatic deviation of lenses acting excentrically. He attempted to do this in a convenient manner and without obvious defects, and in these conditions no limit was imposed on the sizes of the images. Under the influence, however, of the English photographers, who at that time were extremely active, the size of  $8 \times 8$  cm. was fixed as the standard for the stereoscopic picture, dimensions which involved between homologous points at an infinite distance a separation of at least 80 mm., the minimum corresponding to the case where one exactly superimposed the inside edges of the two elements. Duboscq adopted as eye-piece lenses of 80 mm. focal length, and was thus able to attain the double purpose which he had in view. This is not the place to refer to the heteromorphic effects inevitable under these conditions and common to the majority of stereoscopic prints.

The size of the image not being limited by theory, it happened at departures were made from the above dimensions either by separating one or other of the two elements or by making them larger than 80 mm. (a distance of 105 mm. has been reached between homologous points), or, what amounted to the same thing, the English dimensions were strictly adhered to, but eye-pieces of shorter focal length were employed, at any rate in England. But this led inevitably to an increase in the defects which the prismatic effect necessary for the assemblage of the images involved, that is to say, distortion by the prisms and chromatic aberrations of the single lenses.

It was only much later in this early period that opposition was made to the form given by Brewster to the stereoscope. This opposition took into account not only the optical defects of the system, but also the unnatural character of the sensation obtained (distortion in the impression of depth or of length). Towards 1860 there was an unconscious and progressive return to the suggestion made by Charles Wheatstone in 1852. According to this, the eye-pieces should act centrally in such a way that the centres of the single images of the eye-piece and of the eye

(or more particularly the centre of rotation of the eye) should all lie in the same line at right angles to the plane of the picture, that is to say, in fact, the optical axis of the eye-piece.

Unfortunately the putting into practice of this perfectly correct idea is rendered difficult by the fact that the distance of the eyes varies greatly among observers, the extreme limits being about 52 mm. and 72 mm. According to measurements of M. A. Gullstrand, who writes with authority on this subject, it can be said that the highest values of the inter-ocular separation are met with in Teutonic countries, whilst the lowest are in England and America. In any case, however, the separation is a variable quantity, and one is therefore logically led by the principle of Wheatstone to the following conclusion:—If the stereoscope is to be used by observers not having the same separation of the eyes as the possessor of the instrument it is necessary to give up the idea of the correct solid representation of the elements of the stereoscopic image and to adopt an arrangement similar to that of the double Verant.

The Commission obviously could not take into consideration such instruments as the latter, as they are of a special character, and for the great body of amateurs there is no doubt that it is the prismatic stereoscope of Brewster that is to be considered. On the other hand, the innumerable stereoscopic prints are made for this type of stereoscope, the two prints can be conveniently arranged on a single support, and, lastly, the union of the pictures is obtained most easily by persons having different separation of the eyes and using different portions of eye-pieces more or less excentric.

Therefore, it is quite permissible for the Commission to endeavour by its recommendations to reduce, as far as possible, the defects strongly marked in this very popular type of stereoscope.

There is thus reason to adopt for the separation of homologous points of objects at infinite distance, that is to say, for the breadth of the separate prints when these latter are exactly juxtaposed, a maximum of 80 mm. If one drops below this distance, say to 72 or 75 mm., the prismatic effect of the half-lenses of Brewster will be reduced, and the quality of the image will gain thereby. As for the height, the aberrations of the usual lenses will not allow of its exceeding 80 mm., or with the square form of  $80 \times 80$  may be taken as the extreme dimension of the print. One can, therefore, in principle admit all sizes which can be inserted in the square space formed by the juxtaposition of two squares having a side of 80 mm. The homologous points

of infinitely distant objects being in no case further apart than 80 mm., and being preferably less widely separated. The lenses should be mounted in such a way that the separation of their optical centres correspond to that of the homologous points, that is to say, a maximum of 80 mm., or if it is variable it can be placed at this value. For the sake of persons of small ocular separation the diameter of the half-lenses should not be too much reduced.

The focal length of the eye-pieces should not be too short, particularly if a picture of the maximum size, 2 x 8 x 8, is being

observed. A minimum of 160 mm. may be fairly taken. Under these conditions the excentricity for eyes of 64 mm. separation

is  $\frac{80-64}{2} = 8$  mm., and it seems that for a separation

average eyes a relative excentricity of  $\frac{8}{160}$  or  $\frac{1}{20}$  cannot

advantageously exceeded.

MORITZ VON ROHR

## QUICK METHODS OF TAKING OFF PRINTS.

[A useful reminder of the methods which may be used when preparing prints at short notice is contained in a recent article in the "Wiener Mitteilungen," where the author, Herr Max Frank, feelingly remarks upon the necessity of having such facilities, not only for press work, but on such occasions as the taking of a wedding group, where proofs are required to be submitted before the responsible for the order take up their departure to an unknown address.—Eds. "B.J."]

In the choice of rapid methods for the making of prints the photographer must naturally be guided by his requirements, that is to say, whether he requires one or several prints, and also whether the print is required only for temporary purposes or whether it should be permanent. If only one print is required perhaps the best plan is to develop the plate in the ordinary way, to rinse it carefully, and then to place it at once in a 3 to 4 per cent. solution of acetic acid. In the meantime, a piece of bromide paper is placed in water to soften, and is then brought in contact with the unfixed and still wet negative by aid of a few light strokes from the squeegee in order to remove air bubbles from between the two surfaces. The paper is then exposed to light in the ordinary way, except for the fact that the exposure must be from three to four times as long as that usually given, the silver bromide left in the film naturally obstructing a good deal more light. The bromide paper can then be immediately taken off the negative and developed, fixed, and washed as usual, and dried by the aid of spirit, all within a few minutes. The exposure of the negative to light being for such a short time, there is no need to fear any fogging action upon the unremoved silver bromide, particularly as the bulk of the developer is removed by rinsing, and any traces left in the film rendered inert by the action of the acetic acid.

Several copies may be made by the above method, but it is to be advised in that case to first fix the negative and thoroughly rinse it. In order to obtain the most rapid fixation the quick-acting fixing bath recently placed upon the market, which owes its properties to the addition of ammonium chloride, may be employed, or the following formula, recently given in "La Photographie des Couleurs," may be adopted:—

Hypo (anhydrous) .....	113 gms. ....	4 ozs.
Ammonium chloride .....	75.5 gms. ....	2½ ozs.
Potass metabisulphite .....	11.5 gms. ....	½ oz.

This mixture should be dissolved in 5 parts of water, or, if to be

used for bromide paper, in 8 to 10 parts.\* This fixing bath has advantage, not only of rapidly fixing the plate, but also rendering easier to remove the last traces of the fixing compound in the wash water. An aid to the rapid removal of the hypo may also be found in one or other of the hypo eliminators.

Among the most convenient and easily controlled hypo eliminators is the little used permanganate of potash. A 2 per cent. solution is made up, and about ten drops or so added to one litre of water, giving a pink solution, which is applied to plates or prints once, twice, or three times, as may be necessary, so long as the pink colour is discharged. As soon as the solution, on remaining on the negative or prints for one minute, retains its colour the photographer knows that the hypo in the prints has been destroyed, a short rinse in water is then only necessary to complete the process.

Another means of taking off prints rapidly from the negative consists in the use of thin celluloid, such as is used in the manufacture of roll-film. A sheet of convenient size is laid upon the negative, pressed down with a squeegee, when prints may be taken off on bromide paper, which is laid in contact with the upper side of the protected celluloid film. The latter, after printing is finished, is at once removed without having injured the negative in any way. In this, as in other methods of printing from the wet negative, attention should be given to drying, with a soft duster, the glass side of the negative, otherwise markings and spots are liable to occur in print, owing to the adherence of drops of water.

In cases where a fair number of prints are required, and where also time permits, it is perhaps more satisfactory to wash and then the negative before printing from it. For this purpose the well-known method of drying in spirit for a few minutes and then putting on a current of air to dry may be adopted, and the same process can, of course, be applied to the prints themselves.

MAX FRANK

\* As given by the author the above formula is meaningless, since it is direct dissolve certain specific weights of the constituents in a number of "parts" of water. However, the above bath may be made up by dissolving the quantities of chemicals given in 500 cc.s., or 20 oz., according to the system of weights and measures adopted.—Eds. "B.J."

## ARE SILVER RESIDUES WORTH SAVING?

SINCE I first set the residues ball fairly rolling, by an exhaustive article on the subject which I contributed to these pages nearly forty years ago, the processes of commercial photography have undergone such a radical change that the above question is nowadays frequently put, and, in very many cases, treated as though a negative answer were the only one possible, and this is rather remarkable, for at the time I speak of profits were comparatively large, and many professional photographers did not think it "worth while to bother about residues." Yet, at the present time, to show a balance on the right side is no slight difficulty in a very large number of what were once highly profitable businesses. In the early seventies the sheet anchor, both of the portraitist and the view producer, was albumenised paper, while P.O.P. and collodion

paper hold the field of silver printing at the present day. I propose to show figures of actual working to enable anyone to form his own judgment on the question. First, let me draw attention to the fact that my knowledge of the working of a large number of studios which I may at once say is unusually extensive—I have had correspondence from all parts of the kingdom, apart from personal interviews—enables me to assert that in the large majority of studios during the whole of this long period of time the waste of uncollected silver has been absolutely appalling. One of the largest users in London, if not absolutely the largest, told me himself he never worked up his old hypo baths, he simply "sent them down the sink," and his annual purchases of albumenised paper were counted by hundreds, not scores, of pounds. In most stu-



print washings have been collected in more or less perfunctory manner, the principal paying little attention. I know one firm in Africa, doing a most extensive business in developing and printing, who, the manager informed me, permit the operators to keep residues as a kind of perquisite—an establishment where a bath containing two or three tubes of gold is at once thrown down the sink if it does not seem to be working right—when it would be no trouble worth speaking to obtain the whole of gold back again.

To get to actual figures, I will give the results of some weighing of residues actually obtained in the daily working of P.O.P., first dealing with the washings from the prints before they are printed. Here let me interject the remark that the prevailing opinion that in the use of P.O.P. the milkiness in the washings (if hard water is used) is largely due to baryta washed out of paper is entirely erroneous. I have not once, in many trials with different makes of paper, been able to discover any baryta, after washing unduly prolonged.

carefully collecting all the wash waters from nearly a quire of paper printed, and throwing down with hydrochloric acid (commonly called "milk of lime") is quite good enough for the work-room) which is the deposit to settle more quickly than does chloride of silver. I found, using one make of paper only, each sheet to contain 3.45 grains of chloride of silver, equivalent to 2.599 of metal (2.6 grains) or 62.4 grains of silver for each quire of paper. In words, if the washing waters are most carefully saved the value of the silver collected from a quire of paper, or 384 cabinet prints, taking silver at 2s. 6d. an ounce—a value rarely lost of late—would be 49d.

Now, to spent "fixing solution" used for gold-toned prints, and throwing the silver down as sulphide, 7.76 grains per sheet was obtained, equivalent to 6.98 grains of metal, or 167.52 grains per quire, worth about 10½d., still taking silver at 2s. 6d. per ounce. The total product from the residues from a quire of P.O.P. prints is 1s. 3d., which, if we reckon the paper bought in quantity at 10s. per quire, comes out at 12½ per cent. on the bill for

this is not all. Used-up toning solutions are thrown into the vat, at least have always been at my studios, and this with comes into the hypo from the toned prints very materially increases the value of the metal obtained when reducing the silver. When the residues are sent to the refiner he allows a price for the metal so obtained because of the gold it contains. I have received cash at the rate of 3s. 9d. per ounce for metal obtained from mixed chlorides and sulphides.

It has to be considered the question as to the value obtainable from print cuttings and spoiled prints. The proportion of weight of precious metal to that of the paper being so very small, no experiments such as those detailed above were feasible; but, being the most trustworthy method of arriving at practical results, I collected a batch of this kind, and, first reducing it to ashes, to avoid heavy carriages and expense of reducing (the refiner's charges being so much per pound weight of waste entrusted to him), I sent the ashes on to be reduced. The result was most interesting—I was not prepared for it, and the refiners' note runs thus:—

1b. 1 oz. paper cuttings (ash) producing:—

oz.	oz.	dwt.	grs.
70 F.G.....	—	1	12 at 2s. 8d. per oz.
F.S. ....	11	16	—

1s. 10d.,

silver at the time being worth 24½d. per oz., so that all I need for over two pounds' weight of waste prints and cuttings is less than 2s., which was more than swamped by the refiners' price for reducing.

Conclusion.—Do not collect silvered paper for burning, but throw it into the waste fixing solution, and then throw down the silver as sulphide.

I think I have provided quite sufficient data to show whether it is worth while to collect residues—a minimum saving of 10½ per cent. off the paper bill (possibly over 15 per cent.) is conclusive. The best method of going about the work it would prolong the article too much to describe it; but if it prove to be of sufficient interest I may deal with it on a future occasion.

G. WATMOUGH WEBSTER.

## THE AMMONIUM PERSULPHATE REDUCER.

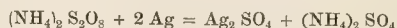
ALTHOUGH this reducer is by no means of recent introduction it still continues to attract considerable attention, both from the practical and theoretical points of view, particularly on the Continent. Herr Braun, in "Photographische Kunst," deals more particularly with the practical side. He points out that the first point to decide is whether the salt is fit to use, which can be easily ascertained by holding the vessel in which it is dissolved to the ear, when, if in good condition, slight detonations will be heard. The solution acts differently according to the plate, the developer, and the time that has elapsed since the former was fixed.

It is essential that the plate should be free from hypo. The latter may be eliminated with potassium permanganate, but the author prefers to render some of the persulphate solution alkaline with ammonia and flood the negative with this, pouring it off, and then acidulating the solution with a little sulphuric acid. The addition of the acid should be made as quickly as possible and the solution always tested with litmus paper for acidity; about 7-10 drops of ammonia or pure sulphuric to every 100 ccs. is about the quantity. It is not advisable to rock the dish until the solution begins to get milky, or a white deposit appears on the negative. The plate should be examined about every ten seconds, and, when the reduction is sufficient, should be placed in a 10 per cent. solution of sodium sulphite for five minutes and then well washed.

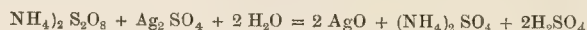
If the developer was not pure or the fixing bath contaminated with silver bromide, the reduced negative may be brown, and not black, and the dense parts may not be reduced more than the shadows. Black spots are due to traces of hypo.

Herr Pinnow deals with the persulphate reducer in the "Zeitschrift für Wissenschaftliche Photographie" rather from the theoretical point of view, and comes to the following conclusions:—

1. A small quantity of silver sulphate is formed by the action of persulphate on metallic silver, according to the equation



The silver salt and the persulphate react and form silver oxide—



The three latter products give fresh silver sulphate, and the action begins again; only the process must take place in half the time, since the quantity of silver salt is doubled by the reaction. The silver salt acts catalytically.

2. In ammonium persulphate there are small quantities of Caro's acid, as can be proved by adding to a very dilute solution of potassium iodide and starch, a few drops of sulphuric acid and some thiosulphate. If 2 per cent. of decinormal silver nitrate solution be added to the persulphate Caro's acid cannot be detected. Hydrogen peroxide is not formed, but ozone. The evolution of ozone or ozonized oxygen from Caro's acid is considerably hastened by the addition of a silver salt. If, therefore, a little silver salt is formed from the metallic silver and persulphate it can catalyse Caro's acid; the ozone forms silver peroxide with the metallic silver. The formation of Caro's acid is accelerated by the increase in acidity, and its decomposition accelerated by the increase in silver salt. Most likely the two processes run concurrently. That this is probably the case is proved by the formation of small gas bubbles on the film when it has been previously treated with a silver salt.

3. According to R. Kempf persulphuric acid oxidises ammonia to nitric acid under the influence of silver salts, and silver peroxide, the actual oxidising agent, is first formed.



Persulphuric acid itself does not act on ammonia. Nitric acid may thus be first formed by the action of the silver salt and then clear up the plate.

A considerable quantity of silver goes into solution when reducing with persulphate, and this is generally the cause of the numerous spots. As a rule, the average amateur has not distilled water at his disposal. The dissolved silver is precipitated by the chlorides of spring or tap water as silver chloride, and where a cloud of silver chloride forms, the reduction is accelerated and a spot is formed. For reducing with persulphate distilled water is absolutely essential.





the drawings, figs. 1 and 2 illustrate, diagrammatically and plan, means whereby the films or screens may be produced, and 3 illustrates a contact printing frame for use with a granulated or screen. In figs. 1 and 2, *a* represents a camera, *b* is the sensitive plate or film, and *d* is a suitable easel. In 1, *e* is a Levy or other similar screen, and *f* is a textured surface, which are illuminated in any suitable manner by transmitted light, which may be direct or reflected light, as will be understood. The positions of the screen *e* and textured surface may be reversed, and in some cases the textured surface (or) screen *e* may be arranged near to the plate *c*, as indicated by the dotted lines at *e*<sup>1</sup>, instead of upon the easel. In fig. 2, the textured surface or material *f* is arranged on the easel and illuminated from one side by natural or artificial light (an electric lamp being indicated at *g*), and the screen *e* is arranged near to the plate *c*. In all cases illustrated by figs. 1 and 2, the result pro-

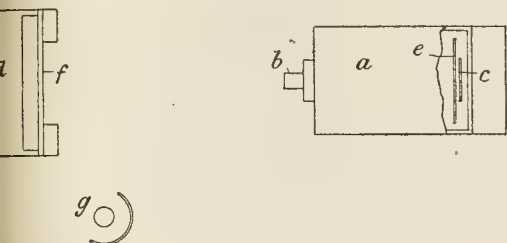


Fig. 2.

duced on the plate *c* (or a positive taken therefrom) will be a screen combining impressions of the process screen with the textured surface. In producing a textured surface screen by the means shown in figs. 1 and 2 for use with negatives (or positives reversed) which are to be taken through a Levy or similar screen, screen *e* is not employed, the photograph being made of the textured surface *f* alone.

Fig. 3 is a sectional view of a printing appliance suitable for contact printing, in which provision is made for the removal of the textured screen (and in some cases, the substitution of another) between the sensitive surface and the negative, while maintaining the accurate register. *h* is a frame, *i* is the negative, *k* is film or screen, *l* is the sensitive surface (for example, printing paper), *m* is a clamping device composed of two parts hinged together at *r* for securing one end of the paper *l* firmly with regard to the frame and the negative, the two parts being preferably dovetailed and tongued, as shown at *s*, and *n n* represents the removable back which clamps the sensitive paper in close contact with

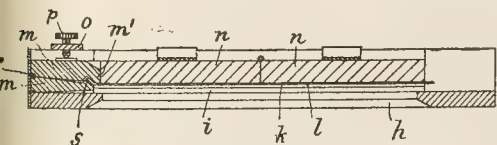


Fig. 3.

screen or negative. The clamp *m*, which exactly fits a suitable opening formed at the end of the frame *h*, may be arranged, as shown, to automatically adjust itself and the paper to the negative when the screen has been withdrawn; for this purpose the clamp is adapted to grip the end of the paper, and a projecting part, *m*<sup>1</sup>, is adapted to rest upon the edge of the screen, so that when the screen is removed the part *m*<sup>1</sup> is forced by the resilience of the bridge *o* and screw *p* on to the negative without allowing the paper *l* to alter its position with regard to the negative, thereby maintaining the accurate register.

In some cases, a piece of plain transparent material may be substituted for the withdrawn screen to ensure accuracy of register and obviate the necessity for an adjustable clamping device such as shown.

It will be understood that for printing by projected light, the screen would be held in a suitable frame which would permit of

the withdrawal of the screen, or the substitution of another, without injuring the accurate register of the image on the sensitive surface. Ernest Howard Farmer, 3, Coleraine House, Nassau Street, Mortimer Street, London, W.

**METALLIZED REFLECTING BANDS.**—No. 25,165, 1907. The claim is for an opaque cinematographic band composed of Bristol board, paper, or other analogous support, which, on the face bearing the images, is provided with a brilliant metallic coating, so that the luminous rays which it reflects produce on a screen a very luminous projection of the images. Edouard Dupuis, 36, Avenue des Minimes, Vincennes, France.

**GLASS-PLATE CINEMATOPHONES.**—No. 4,040, 1908. In an addition to Patent No. 3,987, 1908, it is wished to indicate that the special apparatus may be used for taking animated pictures directly whenever the size of the projection does not exceed the limit at which the grain of the plate would be visible upon the screen. Jean Leon Muller, 8, Avenue Berthet Sannois (Seine et Oise), and Jules Rousset, 27, Cours Marigny, Vincennes (Seine).

The following complete specification, etc., is open to public inspection before acceptance under the Patents Act, 1901:—

**TELEGRAPHIC TRANSMISSION.**—No. 16,272. Apparatus for reproducing at a distance pictures or designs. Belin.

## New Trade Names.

**PRAKMA.**—No. 304,360. Chemical substances used in manufactures, photography or philosophical research and anti-corrosives. Praktische Maschinen Gesellschaft mit Beschränkter Haftung, 77 and 78, Ritterstrasse, Berlin, Germany, manufacturers. June 30, 1908.

**RECORDOL.**—No. 304,363. Chemical substances used in manufactures, photography or philosophical research and anti-corrosives. Praktische Maschinen Gesellschaft mit Beschränkter Haftung, 77 and 78, Ritterstrasse, Berlin, Germany, manufacturers. June 30, 1908.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Figure Studies in Holland.

Personally (writes Mr. James A. Sinclair, in the "A.P. and P.N." for August 18) I prefer a camera with an accurate small finder, in which the picture may be perfectly composed, and with a shutter working, say, from 1 second to 1-100th second. If taking subjects with figures, I estimate the distance at which I want to take an advancing figure, put the pointer on the focussing scale at that distance, and hold the camera by my side in waiting. Supposing a suitable figure or group advances, I quickly bring the camera to position just before they reach the desired spot, see that level and finder are correct, and press the trigger.

As a rule, this can be done so quickly that the objects are quite unconscious that they have been taken. If heterodox about cameras, I am equally so regarding plates. No plate is fast enough for me, and my allegiance is always at the service of the maker who can give speed without fog. Slow plates tend to hard results; orthochromatic ones seem to sacrifice breadth, and, apart from this, are usually slower. I am no convert to orthochromatics. Colour-correct plates may give results which are scientifically correct, but skies taken with them seem to lose the idea of luminosity. To-day I favour the Ilford Monarch, and always use them backed. They give detail with minimum exposures, and density can be secured with sufficient development. When an equally good plate of double or even ten times the speed is made, then I shall use it.

### Photographs of Golfers.

It is all a question of hand and eye (George W. Belknap is quoted in the "Photo-Miniature" as saying) as in any other game, but two things are most necessary—a camera with a full-sized finder and a

focal-plane shutter, and a knowledge of the golfing swing. In other words, the camera artist must be a golfer. The fact that when the button is pressed the full-sized reflector springs up and releases the focal-plane shutter, really helps the operator to time more perfectly. There is only a fractional part of a second between the pressing of the button and the releasing of the shutter; the reflector has to spring up to get out of the way and release the shutter. Hence I soon found I had to allow for this and press the button just before I wanted to. This short space of time, in my opinion, just fits in with the golfing swing, and also compensates for the difference there would be between the eye seeing and the hand pressing. I therefore watched the wrists working and not the club-head, and I soon found that practice gave me the necessary knowledge when to press. I seemed to know when one had been mis-timed, and immediately took another of the same stroke. When taking a great number in one day I seemed to get set, as one does at cricket, and could then be certain of my efforts being absolutely timed. The top of the swing, of course, requires more timing than the finish, but the most ticklish is to catch the ball at, or immediately after, impact in the drive, so as to show the ball and driver on the plate. Of course, in such a case there is considerable movement of the club and the ball, but this gives a better idea of the pace at which they were travelling, especially when it is remembered at what speed the shutter was working, 1-1000th to 1-1250th of a second.

## New Books.

**PHOTOGRAPHING OUTDOOR SPORTS.**—No. 91 of the "Photo-Miniature" is very opportunely devoted to this branch of photography, and collects within a small space the experience and advice of a number of expert workers in the different branches of press and sport photography. It is only natural that the most useful counsel which can be given the photographer of such subjects does not concern the actual photographic practice, but takes the form of hints from experts in the various sports as to the most essential features of the game which should appear in the photograph. In other words, the successful photographer of sporting events of any kind must also be a sportsman; if not a practised player of the game, at any rate, so frequent a spectator of it that he can instantly appreciate good and bad play, and is prepared to bring his camera into action at the right moment. The "Photo-Miniature" rightly treats its subject from this standpoint and may therefore be recommended as a helpful text-book. (Dawbarn and Ward, Ltd., 6d. net.)

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

#### SATURDAY, AUGUST 22.

North Middlesex Photographic Society. Outing to Loughton and Chigwell.  
South Suburban Photographic Society. Excursion to Godalming. A. K. Dannatt.  
Leeds Camera Club. Excursion to Scarborough.  
Birmingham Photographic Society. Excursion to Cannock Chase.

#### MONDAY, AUGUST 24.

Southampton Camera Club. "Portraiture." W. R. Kay.

#### WEDNESDAY, AUGUST 26.

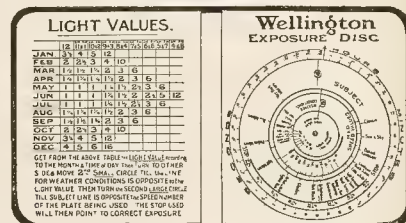
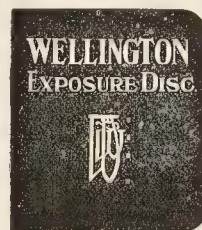
Rugby Photographic Society. Excursion to Lutterworth. G. A. Towers.  
Leeds Camera Club. Lectures by Members. Arranged by John Jax.  
North Middlesex Photographic Society. Short Papers by Mr. Hare and Mr. Rollings.  
Birmingham Photographic Society. Evening Ramble to the Lickey.

MESSRS. T. NAYLOR AND CO., LTD., advise us that they have removed from 24, Denmark Street, Charing Cross Road, to more commodious premises, at No. 5 in the same street, opposite the old address.

## Dew Apparatus, &c.

The "Wellington" Exposure Disc. Sold by Wellington and Ward, Elstree, Herts.

In the form of a cloth-covered folder measuring 4in. by 6in., Messrs. Wellington and Ward have provided users of their "Wellington" exposure calculator, which, without arithmetical computation whatever, allows of the exposures of most diverse kinds being quickly ascertained. The basis of the calculator is the table of light variations for different times of day and year which is employed in conjunction with a disc slide-rule. This latter thus requires only two adjustments to the exposure for any stop from  $f/5.6$  to  $f/64$ , and for a range



subjects from clouds (sea and sky) to dark interiors. The calculator makes provision for the use of plates of a wide range of sensitivities, adopting the H. and D. markings, in which connection it may be interesting to quote the numbers taken as the average by Messrs. Wellington for their several brands: "Xtra Speedy," 350 to 400; "Speedy," 250 to 275; "Iso-Speedy," 225 to 250; "Landscape," 150; "Ortho-Process," 80 to 100; "Lantern," 10.

The exposure disc is issued at the nominal price of 9d., and, as can say from our own use of it, may be recommended as a useful and convenient guide to exposure.

## Commercial & Legal Intelligence.

OFFICIAL NOTICE is given of a first and final dividend of 5s. 6d. to be paid to the creditors of Alfred Ernest Priest, photographer, of 21A, Prince of Wales Road, Norwich, and residing at 51, Sprowston Road, Norwich.

UNDER an agreement recently entered into, Mrs. Chas. Grove (Miss A. West) ceases to be a general partner, and becomes a limited partner in the firm of A. West and Partners, carrying on business as photographic printers, etc., at 91-98, York Street, Westminster, S.W.

A NOTTINGHAM BANKRUPTCY.—At a meeting of the creditors of a bookbinder named Robert William Clark, held at the office of the Official Receiver last week, it transpired that in September, 1907, the bankrupt commenced business as a photographer in Arkwright Street, Nottingham, taking premises there on a lease for five years at a rental of £50 per annum, and fitting them up at an expense of about £200. He stated that his business was not a paying concern, and that about February, 1907, he disposed of this concern to a wife for £80. The business is still being carried on by the bank



but apparently no alteration has been made in the trading nor was any notification given to creditors or others of any of ownership. The bankrupt stated that his wife's father had all liabilities of the business. This matter, said the Official Receiver, required further investigation.

## NEW COMPANIES.

**RIESE-GREENE PATENTS, LIMITED.**—Capital, £2,400 in £1 shares. Require the right and interest of A. Ramsay in certain patents, claims and rights comprised in an indenture between G. W. Ramsay, W. Friese-Greene, and C. J. Morris, and to carry on the business of manufacturers and exhibitors of, and dealers in, cinematographs, bioscopes, and other apparatus, etc. Private company. Number of directors is not to be less than two nor more than three. The first are:—A. Ramsay, W. Friese-Greene, and A. S. F. Ramsay. Qualification, £10. Remuneration, £25 each per annum. Registered office: 64, Victoria Street, Westminster.

## News and Notes.

**PHOTOGRAPHER'S SILVER WEDDING.**—Mr. G. H. Stanford, photographer, of Boscombe, and Mrs. Stanford, celebrated their silver wedding recently and were the recipients of numerous congratulations.

**"RAJAR" CAMERA** offered monthly by Messrs. Rajar, Ltd., Weymouth, Dorset, for the best print on "Rajar" P.O.P., has been sent to Mr. G. Elvin, The Square, Fakenham, Norfolk, his print being judged the best during July.

**PHOTOGRAPHY AND THE WATER RATE.**—At the Redruth Urban Sanitary Council last week considerable discussion ensued upon the subject of a letter from Messrs. Opie and Son, photographers, in which the Council had decided to place a water meter. The Council stated that they objected to being singled out, and considered themselves unjustly treated. Several councillors pointed out that the Council's desire was to make a test, and that Messrs. Opie would not be charged according to the amount recorded on the meter.

Should it be discovered that more water was running through the meter than was paid for, each photographer would be supplied with water.

**C. PHOTOGRAPHIC RECORD.**—That the London County Council extensive use of photography in its various municipal undertakings is a well known fact, and the following account of the work of the special photographic department, which we take from the "Illustrated London News," may be recommended to the perusal of professional photographers for its suggestions as to the work which may be done for smaller public bodies in their own neighbourhood which should keep a photographer regularly employed.

Perhaps the most interesting among the collection are those which record incidents at ceremonial events in connection with the Council's work, in which members of the Royal Family and other distinguished persons have been the central figures. For example, the collection includes some admirable photographs of scenes at the opening of Millwall Dwellings by their Royal Highnesses the King and Queen, the launching of the Thames steamboats by his Royal Highness the Prince of Wales, and the opening of the Horniman Museum by the Duke of Devon.

Another specially interesting branch of the collection includes photographs of historic London houses which have been demolished in recent years. Whenever an old London house, which is historically or architecturally interesting, is pulled down in connection with other improvements, the Council takes care to have photographs taken of the exterior and of the more interesting features of the interior.

This rule applies not merely to houses pulled down by the Council itself, but also, as far as possible, to houses demolished by private owners and by private persons. Of quite exceptional interest is a collection of photographs, nearly one hundred in number, taken by the Council in connection with the Kingsway and Aldwych im-

provement, which illustrate in vivid fashion the contrast between the squalid, overcrowded streets that once covered this area, and the noble thoroughfares that have now taken their place.

"Other photographs in the collection show scenes in the Council's various parks and open spaces, London schools with children at work and at play, the interiors and exteriors of fire stations, and other interesting phases of the Council's vast administrative activities.

"Enough has been said to show that to coming generations of Londoners the collection will be of incalculable interest, while to future historians and topographers its value will be inestimable."

**"FREE ENLARGEMENT" FRAUDS.**—In reference to this now well-known form of fraud, a correspondent writes to the "Edinburgh Evening News" recently as follows:—"Some time ago I was asked to give quotations for enlargements measuring 20 inches by 16, mounted on stout cardboard. On interviewing the man I was told that unless I could put them in somewhere about 7d. each I need go no further in the matter. Needless to say, I went no further. He even hinted of a Berlin firm having made a lower offer. The reason he gave for not closing with the magnanimous offer was that he would rather encourage his own countrymen. Perhaps he was a Tariff Reformer himself, wishing to have something for nothing out of the British working man. Framing costs but a few shillings, and even with the assistance of a cheap German moulding, the enlargement, as the cost price shows, is plainly mere rubbish. The great blessing, however, is that it will soon vanish, the purchaser having the satisfaction of possessing that for which alone he has paid or overpaid—viz., the frame."

**TO REPLACE CELLULOID.**—According to an American Consular report from Chemnitz, a German chemist has lately perfected a process which brings into competition with celluloid a new composition possessing similar plastic and elastic properties, but free from the easy and somewhat dangerous combustibility common to celluloid articles. Such hollow objects as balls, dolls' heads, and the like are now as easily prepared as from celluloid. The latest application, that with regard to cinematograph films, is among the most important. Its manifest superiority over celluloid for this purpose results from its non-combustibility. A film exposed for ten minutes to the concentrated light of an arc lamp does not exhibit the slightest alteration.

**THE THORNTON-PICKARD £100 PRIZE COMPETITION, 1908,** is now announced, and copies of the entry form and rules will be sent post free to all applicants. The competition is organised on the same lines as in previous years, but there are several new classes and also new rules, which will enable photographers of all classes and grades to compete, and those who possess any kind of apparatus made by the Thornton-Pickard Company would do well to write for a prospectus without delay, whilst those who are uncertain as to what make of camera to purchase should write for the firm's catalogue. The competition closes on October 1, on or before which date all prints must reach the company's offices at Altrincham, Cheshire.

**DEATH OF A PHOTOGRAPHIC WRITER.**—We learn from "Der Photograph" of the death, on August 7 last, of Herr Fritz Loescher, a well-known writer on photographic topics, in Germany. The late Herr Loescher was a student of H. W. Vogel and of Dr. Aarland. Perhaps his best known work was "Leitfaden der Landschafts Photographie." He had for several years past contributed the article on "Pictorial Photography in Germany" to "Photograms of the Year."

**THE LATE MR. W. C. HUGHES.**—The death took place on the 7th inst., after a long illness, of Mr. William Charles Hughes, of "Belvedere," Woodside Park, N., at the age of sixty-four. The deceased gentleman formerly carried on business at "Brewster House," Mortimer Road, Kingsland, N., as a specialist in optical projection, was the inventor of the "Pamphengos" lantern, and was well known throughout the lantern trade. Mr. Hughes had retired from business some four years ago, but the prestige of the firm in lantern matters has been maintained by his successor.

**ATTRACTIVE EXCURSIONS FROM PADDINGTON.**—An interesting programme of excursions from Paddington Station is announced by the Great Western Railway for the near future. On Saturday, August 29, a new circular day trip through the Garden of England, embracing Stratford-on-Avon (Shakespeare's birth-place), Broadway (England's most beautiful village), and Cheltenham (the Garden Town), will be run from Paddington at 8.20 a.m., and will

enable passengers to spend 3½ hours in Stratford-on-Avon, 2 hours in Broadway, and 2½ hours in Cheltenham, arriving at Paddington at 10.15 p.m. The return fare will be 7s.

Another circular day trip is also announced to the Wye Valley on Monday, August 31, leaving Paddington at 8.20 a.m., and giving passengers the opportunity of dividing the day in various ways at Chepstow, Tintern, Monmouth, Symonds Yat, and Ross. The return fare will be 7s. In addition to these, there will be many other attractive trips from Paddington.

**ROTHERHAM PHOTOGRAPHIC SOCIETY.**—This society will hold its 19th annual exhibition from October 14 to 17, 1908. There are, as usual, open classes, including one for "Photographs in colours," in which, of course, Autochromes are eligible. Applications should be addressed to the Hon. Sec., Mr. H. C. Hemmingway, Tooker Road, Rotherham.

## Correspondence.

\*.\* *Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*

\*.\* *We do not undertake responsibility for the opinions expressed by our correspondents.*

### TANK DEVELOPMENT.

To the Editors.

Gentlemen,—I have read with much interest the various letters and notes in the "Journal" re tank development and its defects. Last year, here, I experimented a good deal with it and got in every instance perfect results, and such confidence had I in it that on taking a three months' photographic trip to India last winter, I took a tank developing outfit for both ¼ and ½ plates, as it is always interesting to develop a little en route. My subjects were chiefly figures, and in many cases in or near water, and, of course, in all cases the clear, hard blue sky that is always present in India in winter.

The negatives in a great number of cases showed the serious streak effects and sky mottlings that many of your correspondents speak of, but for some time I did not suspect the tank, but put it down to atmospheric and like conditions. However, on returning to Kyoto and starting the development of the bulk of the plates I clearly traced it to the tank and reverted to tray development and got perfect results. Though no one can doubt the great convenience and speed of tank development, yet, unless some device is found to keep the tank in motion all the time, it is impossible otherwise to get negatives without these streaky defects. I send some negatives to show the extreme form one gets with figures taken against the light and in water and with clear blue skies.—Yours faithfully,

THOMAS B. BLOW.

Kyoto, Japan, June 30, 1908.

[The negatives show the curious dark streaks running from shadow portions of the negatives. We must say, however, that in a lengthy experience of tank development, we have never got such markings when taking the precaution to rock the tank every now and then. Perfectly quiescent development is evidently a necessary condition of their appearance.—Eds., "B.J."]

### DEFERRED STAMPING OF AGREEMENTS.

To the Editors.

Gentlemen,—Your reply to Y. Z., page 578, last issue, states that "If the agreement is not stamped it is of no value, and your late employee can start business just where he likes and you cannot prevent him." May I add that under certain circumstances the Inland Revenue will allow a document to be stamped upon payment of a small fine, varying from 5s. to £10.

The plan is to write a letter asking them the costs or fine, enclose the agreement, using a foolscap envelope and large size paper, foolscap by preference, and sending it either to the Commissioners, I.R. stamping department, Somerset House, London, W.C.—the postage need not be prepaid—or else the agreement and letter can be handed to the nearest post office, which will transmit it, and

will also be entitled to take the costs fee, if Y. Z. chooses the sum demanded.

Before doing so, Y. Z. should consult a solicitor to see if the agreement is legally expressed, as the writer once lost a case, owing to the word "penalty" being used, instead of "damages."

Another tricky clause is the radius embraced in which was prohibited from opening; for instance, it has been laid down that three miles from a London studio is an excessive distance whilst in the country, on a sparsely populated part, 10 miles is not considered an excessive distance. What is known as "the radius of trade" plays an important point.

The following is a good example: "That the said Y. Z. shall open in the photographic portrait business, either as principal or agent, within a radius of two miles from the market cross of the City of Worcester, neither in the townships of Little Malvern."

This any County Court judge would allow, and give judgment in favour of the plaintiff.

It is also better to have a sum stated as "agreed damages" if he has no idea of so opening when you engage him, it does not signify if it is £5 or £500, as he would never be called upon to pay the damages.

It is also well to limit the time, say within the next 7, 14, or 30 days; this influences the judge also. ARCHER CROFT.

## Answers to Correspondents.

\*.\* *All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C."* Inattention to this ensures delay.

\*.\* *Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.*

\*.\* *Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & COMPANY, 24, Wellington Street, Strand, London, W.C.*

\*.\* *For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street Strand, London, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, for two unmounted copies of each photograph must be sent with the fee.*

### PHOTOGRAPHS REGISTERED:—

A. W. Debenham, 72, High Street, Cowes, Isle-of-Wight. Two Photographs of the King, Prince of Wales, and Prince Edward of Wales on the "Osprey" and "Albert."

**HARD CASH.**—We know nothing as to the actual value of the photograph. We should not be disposed to value it too highly. We think your own instinct should be your best guide. If it is not, better to let it go than to keep it up the idea of such work.

**QUANTUM.**—The cost of a provisional protection is £1. A provisional agent's charge will be £2 or £3 if the specification does not cover a great deal of work. Apply to Messrs. Rayner and Co., Chancery Lane, E.C.

**SELLING TONING BATHS.**—Can you kindly advise on the proper matter? In addition to my work as a photographer I am venturing up a fair little connection in supplying plates, papers, and sensitizers to amateurs. Sometimes I am asked to supply a toning and fixing bath or a developer of my own making up, and my question is Can I make up and sell a combined toning and fixing bath developer and not render myself liable to prosecution, if I send my customers to a chemist for such goods? I should be glad of your reply, as I only want to do what is right.—To the Editors.

Certainly, there is no objection to your selling such preparations provided they do not contain scheduled poisons. Of the only ones which are likely to occur in any photographic preparation are (1) cyanide or (2) mercury compounds. Only a quantity



pharmacist may sell such compounds, or mixtures containing them, at a retail way.

**FERO-TYPE CANNON CAMERA.**—Can you give me the address of a firm supplying a ferrotype camera in the shape of a cannon, the length of which is about 16in. or 17in. long, and takes pictures about the size of a shilling? I am given to understand the camera has a developing and fixing tank combined, and finishes the photo in about twenty seconds.—N. HART.

The cameras are sold by an American, who is at present located at 2, York Street, Covent Garden, London, W.C. Apparently he is an agent of the Chicago Ferrotype Company.

**FERO-PRUSSIAN COPY.**—It is desired to reproduce a long roll of ferro-prussiate (blue print) same scale. Negatives if taken would be expensive. Can the original be used as a negative? If so, what process would give the best results? It will not reproduce on to other pieces of prussiate, or but faintly on to sepia.—PRINTER.

There is no satisfactory method of taking a contact copy from ferro-prussiate print. We can only suggest that a tracing be made by hand or the original obtained, and a copy taken on sepia paper.

**DEVELOPER.**—(1) I want a formula for the development of ferro negatives (children), pyro-soda preserved with nitric acid and without bromide. I wish to take one ounce of each working solution, to be used for one  $\frac{1}{2}$ -plate only, which, when developed in it, will give just the requisite density for P.O.P. by artificial light printing. Will you fill in correct quantities? Working solution: No. 1. Pyro 1 oz., Nitric Acid —, Water —. No. 2. Soda Carb. —. Negative to be cleaned with citric and alum bath. (2) What is the cause, when using standard formula, of chalky high-lights?—PRINTER.

Nitric acid, in our experience, is not a good preservative of ferro if the latter is kept in such weak solution, as it must be, as to comply with your conditions. A suitable developer for ferro-prints contains about 2 grains of pyro per ounce, that is, say, your stock solution, which is to be mixed with an equal volume of the soda solution, should contain 4 grains per ounce, which means that the ounce of pyro must be dissolved in 110 ozs. of water. You can try the effect of preserving the pyro with 30 or 30 drops of nitric acid, but do not expect the solution to keep long. The No. 2 solution should be: Soda carbonate, 2 ozs.; soda sulphite, 2 ozs.; potass. bromide, 20 grs.; water, 20 ozs. We think you are needlessly worrying yourself as to formulae. Why not use that of the makers? As to density, you must develop for the necessary time. (2) Under-exposure.

**FEEL SUPPLY.**—I enclose the postcard which is full of white spots. I feel certain the fault lies with the water meter, as I have tried another tap without the meter (same connection with main pipe) and postcards were entirely free from spots. Could I compel the Corporation to remove it, or threaten them for loss of material and time, etc.? I have tried thick wool filter, but to no purpose.—W. WARRICK.

We doubt if you can enforce the removal of the meter, but we should be surprised if the Corporation do not comply with your request to help you in the matter. We suggest you approach them.

**PRINTING PAPER.**—I saw some time ago that one of the leading professionals (I believe Hoppe or Furley Lewis) used a very thin paper, which was only obtainable in Germany. I should like to be able to get a good plain sensitised silver paper, but in any case the paper I should like should be quite thin, almost like rice paper. Can you help me with any address?—S. E.

Try Trapp and Münch, Friedberg, Hessen, Germany. We believe they are the makers of the paper used by Mr. Hoppe.

**STAMPS.**—1. Please tell me the makers of the "Primus Solito" camera? 2. Where can I purchase matting varnish? 3. Where can I get coloured oxides to be used when stamping my name on mounts?—VARIOUS.

1. Messrs. W. Butcher and Sons, Camera House, St. Bride Street, E.C. 2. From most dealers or from a maker such as the Vanguard Co., Maidenhead. 3. Try W. Harrison and Co., 6, Mincing Lane, E.C., or better consult a good local decorator, who we think could procure for you in the trade.

**PORTRAIT TO ORDER.**—Will you kindly advise me through the medium of the JOURNAL what steps I can take in the following

matter? I am a professional photographer, was requested to do a cabinet photo, enlarge same to 20 x 16, colour, and frame complete, for which my charge was 25s. Upon taking the picture to the customer the lady refused to take it, giving me no reason for her refusal other than she "did not like it"; and would not listen to my request that my work should be subjected to the opinion of an expert, remarking that the decision of fifty-five experts would not make her like it. I, however, left the picture in her possession. Trusting you will see your way clear to give me the advice I need.—CONSTANT READER.

You can sue her for the money in the County Court, and presuming that it is a reasonably good likeness of the lady, as good as could be expected from the original, you will probably obtain judgment. The fact that the portrait is retained is in your favour.

**MARKINGS ON PRINT.**—Would you kindly say what you think is the cause of the marks on this photograph? It was returned to me from a lady who has had it a few weeks with a not very complimentary letter. My opinion is that it has been caused by some insect.—B. P.

Your surmise is, we think, quite correct. We have seen similar markings on prints that were with little doubt, caused by insects. Blackbeetles and the like are very fond of gelatine, and we have known them attack carbon tissue. Ants, too, would probably work mischief.

**LENS FOR STUDIO.**—I want to buy a lens for studio use, and would feel obliged if you would advise me what to get. Whether a portrait lens such as Dallmeyer's 3B., and another one for groups; or would it be better to get a large aperture lens such as Staley's F4.5 Euryplan, or Voigtlander's Heliar, of about 11in. focus, to do for both purposes. I do not want to spend more money than is absolutely necessary, but desire to get good instruments so as to be able to get first-class results.—EXWYZED.

All the lenses named are good instruments. The first, however, is the quickest, as that only requires, with the full opening, half the exposure of the others. The others would be the best for groups. You do not mention the size pictures you desire to take, or the length of studio at your command, so that we cannot say what lens or lenses would be best for you to buy. Anyhow, these named are all good.

**DAMAGED DAGUERRETYPES.**—I have lately had two daguerreotypes in a very tarnished condition given to me to restore. I have restored them the same as I have many dozens of others, viz., with cyanide of potassium and somehow or other the treatment has left the images very faint. Could you inform me if there is any process by which I could intensify, or re-develop, the image thereon with safety, thereby bringing them to their normal condition? Your early reply will greatly oblige me, as the customer is rather anxious to see them, and I wish to improve their appearance before he has them, if possible.—A TWENTY-FIVE YEARS' READER.

There is no way of intensifying, or re-developing, the daguerreotype image when once it has been damaged. Had the cyanide of potassium been carefully employed it would not have weakened the image. Nothing can be done with the pictures now.

**USE OF NAME.**—1. Can you tell me if I can legally use the name of late employer thus:—"10 years with Jones and Co."?—B. W. C.

1. You can use the name of your late employer, provided you make his name less conspicuous than your own, or in such a way as not to lead the public to imagine the business is his, or that he is interested in it. 2. Apply to the Paget Dry Plate Co., Watford.

**LT.-COL. J. E. GUBBINS.**—It has a slight advantage as regards brilliancy of image owing to the lesser number of reflecting surfaces.

**PHOTOGRAPHING TOMBSTONE.**—I have a commission to photograph a tombstone in a cemetery close by here, but I cannot get a picture that the customer will have. The objection he raises to the pictures I have done is that the inscription on the stone does not show distinctly so as to be readable. I may explain that the stone is dark granite, and the lettering is merely cut in, and not gilded or coloured in any way, and therefore there is little distinction between the plain slab and the inscription, and very little shows in the negative. Can you kindly give me a few hints

to how I may get a passable result, as the customer is a good one, and I want to please him if possible.—TOMB.

Without seeing the tomb it is a little difficult to advise you. We should suggest you visit the cemetery at different times of the day, when the sun is shining, and note when it shows up the inscription best. A dodge that is sometimes resorted to in similar circumstances is as follows:—Get some whiting and make it into a thick paste or dough with water. Then, with a putty knife, fill in the letters with the paste, and with a duster clean off any whiting there may be on the stone. You will then have the inscription in white on a dark ground, which will show strongly in the negative. After that has been secured, the whiting can be removed by brushing it out with a stiff brush, or it may be washed out with water.

**SENSITISING ALBUMEN PAPER.**—I have been a printer for four years, and now the business has changed hands, and the purchaser, one of the old school, is going to have all the prints made on albumen paper. He got some ready sensitised and I have got on very well with it, but he says that better prints are to be got on paper sensitised at home, and that I shall have to sensitise it. As I have never done anything of the sort before, I shall be glad if you will be good enough to tell me through the "Journal" how I can lay the paper on the silver bath without causing air bubbles, as this at present gives me a lot of trouble.—AMY A.

The operation is really very simple, and there is more than one way of doing it. One is to hold the sheet by two diagonal corners, forming a curve, to lay one of the others on the solution, and then gently lower the paper first one side and then the other on the solution; of course, avoiding imprisonment of air bells between the paper and the bath. Another is to take the paper, place one edge of it on the solution, and then gradually lower the whole sheet upon it.

**J. A. S.**—If you owe the firm nothing, you can sue it for illegal detention of the negatives and for damages. If, however, you are indebted to them, they have a lien upon them, and can detain them until their account is paid.

**APPRENTICESHIP.**—The young man is quite right; he is not legally bound as an apprentice, he is only a weekly servant, and can, as he says, leave on giving a week's notice. To make an apprenticeship binding, the indentures must be stamped, otherwise they are not binding on either party. By the tone of your letter we gather that, by not having the indenture stamped, you thought you would be able to hold the young fellow, and that he would have no hold upon you. In that you are very much mistaken. Not unnaturally, as he has learnt sufficient of the business to be worth more wages than he is now receiving, he wishes to obtain more.

**S. R. (Wales).**—The spots are apparently caused by particles of iron rust in the water in which the prints are washed before toning. The only way of avoiding them is to filter the water before use. This you can easily do by tying two or three thicknesses of close flannel loosely, as a bag, over the nozzle of the taps. If after the bag has been in use for a few days the flannel is removed, it will probably be found thickly coated on the inside with oxide of iron from the rusty pipes.

**STENCIL PLATES.**—I want to make some stencil plates, using very thin rolled copper. Can you tell me of anything that will eat right through the metal except nitric acid, as the fumes given off by that is so offensive to me? I want to make plates as clean as those cut by hand.—STENCIL.

A strong solution of perchloride of iron will do what you require, and gives off no unpleasant fumes; but we doubt if you will get, by any method of etching, the same clean-cut edges as by the usual way of making stencil plates.

**T. V. GREEN.**—You are quite right in your surmise. If the paper is kept unprotected in the room in which your assistant does the sulphide toning, the discoloration of the paper is fully accounted for. We should have supposed that any practical photographer would have understood that, without asking the question.

**PROF.**—The only way to ascertain if the photograph is copyright or not is by searching the register at Stationers' Hall. The fact that the picture is not marked copyright goes for nothing. It is not necessary that it should be so marked. Both you, as

the photographer, and your customer who commissioned you to do the work, would be liable in the case of an infringement.

**OLD PLATES.**—1. If the negative sent is a fair sample of what the plates yield, they are worthless. There is always considerable risk in buying "job lines," particularly when they are sold at the ridiculously low price you paid.—2. The plates may possibly be made usable by the method given on page 839 of the "Almanac," but we do not think it would be worth the trouble.

**C. A.**—As you have the premises on a repairing lease, you will have to repair the roof of the studio. The fact that the glass was broken by hail-stones makes no difference. As the landlord tells you, he cannot be compelled to do the repairs, or made to bear any portion of the cost of them.

**T. WARDLE.**—For whatever purpose you require it, you will probably find it more economical to purchase the pyroxyline than to attempt to make it in half or one ounce quantities at a time. We should advise you to get Schering's celloidine, which is well suited for photographic purposes. Your dealer, if he does not stock it, will procure it for you. Unlike pyroxyline, it may be sent through the post.

**A. R. WHALES.**—You have no copyright in the meantime, notwithstanding that your predecessor registered it. The fact of your buying his business and the negatives does not transfer the copyright in them to you. To have secured that you should have had the copyright in each one duly assigned to you. As the negatives were sold without assignment, the copyright in them is lost.

**W. W. W.**—The stains are clearly due to imperfect fixing. Either the hypo bath was too weak, or the prints were not allowed a sufficient time in it. Another cause may be that the prints were not kept moving the time they were in the bath, and stuck together, so that the solution did not have free action.

**HUNTS.**—Ferrottype dry plates may be purchased ready for exposure. They may be had from Fallowfield's, Charing Cross Road, W.C.

**OLD PROCESS.**—The negative sent is not a wax paper one, but a calotype. The two processes were quite different. Calotype negatives used to be waxed to facilitate the printing, which leads some to surmise they were produced by the wax paper process. The negative has been returned to you.

**STEREO.**—Four inches apart will not be too much when taking distant subjects, such as distant views. But for subjects in which are near objects in the foreground it will be too much, as then the pictures when viewed in the stereoscope would have too great relief. For very close objects—say portraits—the separation of the lenses should not be more than two and a half or two and quarter inches.

**T. BISCOE.**—The cause of the windows of the factory looking as they do is halation. Had you used backed plates, you would not have got it, or perhaps only to a minor extent.

**CARBON.**—Zinc trays will do very well for developing carbon pictures in; indeed, they are what are generally employed for that purpose. But they will not do for the alum solution, as they act upon the metal, which would, in time, be eaten through. For the alum solution porcelain dishes should be used. For very large sizes, wooden troughs, lined with lead, are what are usually employed.

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## The British Journal of Photography

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## SUMMARY.

exhibition of photographic pictures in colour by the Hofmeister and H. W. Müller will open almost immediately at the house of the "B.J." Royal Exhibition this year is to be open every week evening. "Thames in Colour" is to be the lecture on three evenings of the week. (P. 655.)

A receptionist trained in the studio of Mr. J. C. Strauss, of St. James, has read a paper on her ideals of a receptionist's duties and employer's attitude. (P. 660.)

A special report of the recent Convention of the Photographic Association of Canada is given on page 658. There appears to have been much interest in the meetings, one cause of which is suggested on page 654.

Handy Photographer.—An article from a reader in the North-west serves as a reminder of the way in which a photographer going to Canada may have to shift for himself in the matter of apparatus. (P. 658.)

W. E. Debenham explains the precautions to be taken in the correction of faulty uprights in a negative by copying in the camera. Unless the operation is done under suitable optical conditions the defects introduced may be as much as, or more than, those of the negative. (P. 656.)

John Beeby has revived the suggestion of potassium ferrioxalate in the hydroquinone developer for the production of soft tones or prints. (P. 654.)

R. J. Wallace has published a paper on the effect of temperature at the time of exposure on the sensitiveness of plates. His remarks indicate the cause of discrepancy between the results of various observers. (P. 661.)

William Abney has published a note on the curious desensitization of red light. (P. 654.)

Autochromatic plates and glass-plate cinematographs are among the latest of the week. (P. 666.)

One of the important points to be regarded in the purchase and use of an enlarger, to be used chiefly for amateur work, are the points of the editorial on page 655.

A serious burglary of the premises of Messrs. Newman and Guardia took place during the past week-end. A list of the stolen goods is given on page 670.

## EX CATHEDRA.

### Photographic Pictures in Colours at Wellington Street.

About simultaneously with the opening of the Salon and Royal there will be brought together in the "little gallery" at the house of the "B.J." a remarkable collection of photographic results in the shape of multi-colour landscapes by Messrs. Theodore and Oscar Hofmeister and their friend H. W. Müller, all of Hamburg. The pictorial work of the Hofmeister Brothers has been seen in the past at exhibitions and in reproductions, but since they, with Herr Müller, have turned towards multi-colour, the exhibitions in this country have seen nothing of them, and therefore the present collection will afford an opportunity of noting the remarkable progress made by them on forsaking monochrome for the attractive field of colour.

\* \* \*

### Colour Lectures at the R.P.S. Exhibition.

It is announced that in addition to the customary three lectures a week to be given at the New Gallery during the period of the exhibition, a series of three different lectures will be given weekly with Autochrome illustrations. This very notable addition to the Royal Exhibition is due to the energy of Secretary McIntosh, who, during the present summer, has made an Autochrome tour of the Thames from Lechlade to Shoburyness. "The Thames in Colour" should be a powerful draw to the Royal, particularly as it establishes the opening of the New Gallery for every night of the week.

\* \* \*

### The Southern Exhibitions.

For the seventh consecutive year the Southampton, Hove, and Portsmouth societies combine their forces to continue what has become the most successful series of provincial photographic exhibitions. The dates are somewhat earlier this year, but otherwise all the arrangements are on the lines which have obtained during the combination. The reduced fees, the combined form, and the free carriage arrangements all appeal to the exhibitor who wishes to be saved as much trouble and expense as possible, and in addition there will be a small select Invitation Section by leading workers. Good awards are offered, and all particulars and entry forms may now be obtained from Mr. S. G. Kimber, Oakdene, Highfield, Southampton.

\* \* \*

### A Comment on Trade Censorship of Postcards.

An unfortunate comment on the trade censorship of postcards, to be instituted, as we mentioned last week, by a postcard protection association, reaches us from a correspondent in the shape of a postcard bearing the imprint of a prominent member of this very associa-

tion. Opinions may differ as to what is and is not fit for publication, but the card before us is—well, not one to please persons of refined taste; and though not actually indecent, certainly vulgar. The ancient scriptural maxim to take the beam from the eye before seeking to remove the mote from the optical organ of another appears to have its application in the postcard publishing, as in other trades.

\* \* \*

#### American Conventions.

Judging from reports in the Press and private communications, the present season has seen a distinct drop in the interest taken in the fairly numerous conventions held in various parts of the United States and Canada. Papers which can be regarded as anything more than a few remarks strung together on the spur of the moment have been comparatively rare, and the business-like character and conduct of the meetings have shown signs of falling off. Indifference on the part of the members is necessarily the cause of such a state of things, but for this indifference a cause must likewise be sought in the organisation of the meetings. And one source of dissatisfaction is probably to be found in the predominance of the trade demonstrator and lecturer at the transatlantic convention. In some instances this element enters so largely into a convention as to rank with the official proceedings, and it may even go to the length of making the convention the scene of trade reprisals and rivalry. In these circumstances it is not surprising that photographers should fail to see the advantage of travelling long distances merely for the purpose of being exploited by commercial firms. If these allegations be true, the present condition is much to be regretted, since the American conventions in the past have proved an undoubted stimulus to the weaker members of the photographic profession.

\* \* \*

#### Ferrocyanide in the Developer.

Mr. John Beeby, in the New York house organ, "Down Town Topics," revives a formula of developer which was more often heard of ten or fifteen years ago—that is, hydroquinone used in conjunction with potassium ferrocyanide in addition to the usual alkali and preservative. Although ferrocyanide is not possessed of oxydizing properties, its effect in the developer is found to be similar to that of potassium bichromate. In other words, it softens the scale of gradation and keeps down the density of portions such as the sky and other high-lights, which would easily block up. The formula favoured by Mr. Beeby is:

A. Hydroquinone .....	2½ drachms.
Ferrocyanide of potassium .....	6½ drachms.
Sulphite of Soda .....	9 drachms.
Water .....	35 ounces
B. Caustic soda .....	2 ounces
Water .....	12 ounces

These solutions are mixed in the proportion of about two ounces of A to five to eight drachms of B. The developer is recommended as equally suitable for bromide papers, particularly when printing from harsh negatives. It might be interesting to try whether the ferrocyanide in the developer in any way affected the subsequent sulphide toning of the prints as regards colour.

\* \* \*

#### The Collection of Residues.

Mr. Watmough Webster's article on "Silver Wastes" in our last issue drew attention to the fact that in the majority of studios the collection of residues is neglected, even though the value of the silver residues in the case of

P.O.P. prints alone represents 12½ per cent. on the cost of the paper used. The residues from working negatives were not taken into consideration in the article, but the value of these is probably worthy of attention equally with that of the print silver residues, seeing that two or three negatives may be made, even when only a dozen or so prints are required. Seeing that the process of recovery is very simple and costs next to nothing, it is rather surprising that the residues should be quite neglected. In a large establishment it would be quite easy to arrange special sinks for the reception of silver solutions alone, the wastes leading to a vat; or, if necessary, several vats large enough to hold, say, three days' supply of solutions. Every night a little sulphide be thrown into the vat, and every morning the upper half of the liquid be drawn off through a tap the collection will go on practically in an automatic fashion. No doubt the trouble of collecting solutions and of conveying them to the residue receptacle is the main reason for so many neglecting residues altogether, but this trouble should disappear if proper arrangements are made. We see that Mr. Webster advocates the deposit of used gold toning solutions in the general silver residues. This is no doubt the simplest way when combined baths are used, but there is no particular difficulty in collecting the gold from simple toning baths separately and a receptacle for these can be provided in the workroom itself, as they are smaller in quantity and no objectionable sulphide is used. The gold increases the value of the silver residues, but at the same time the silver depreciates that of the gold on account of the extra trouble required to separate them. Further than this, pure gold residues can easily and very cheaply be worked and converted into chloride by the photographer himself.

\* \* \*

#### The Reversing in the "Photographic Journal," Action of Red Light.

William Abney publishes a communication by himself on the "Destruction of an Image by Visible Rays of Low Refrangibility." He points out that if a plate sensitive only to violet and blue-green, that is, an "ordinary" plate, is fogged slightly with light and then exposed to the spectrum, the fog disappears or is less intense in the red and yellow portions. This fact suggests that the red and yellow rays undo some of the work effected by the violet and blue-green, or, as William puts it, "when the photographer is using such a kind of plate part of the effect due to some components of the white light is being undone by other components." The reversing effect of the red rays has frequently been referred to by Sir William Abney, but other investigators seem to have rather neglected it. It opens rather a big field for experiment, and some interesting results might be arrived at by a careful investigator.

\* \* \*

#### On the Cutting of Plates.

An old trouble that used to worry photographers very much at one time was the issue of plates that were not cut exactly to standard sizes. We have often handled plates that were just too large to fit the dark slides, and occasionally met with plates small enough to fall through the rebates that should have held them in place. We thought that modern methods of cutting plates had relegated such troubles as these to things of the past, but during the last few weeks we have been disagreeably surprised to meet with them again. In these recent instances the plates were not cut square. One end will fit in the rebates, while the other is just too large to go in without very considerable force being applied. When fitting slides in the dark tray it is nothing so annoying as a plate that will not fit, but when carriers take the place of slides the case is even



worse. On gauging up these plates we find that all the plates we have of the brand to which they belong are cut a shade larger than the plates of other brands of the same manufacture. They are all full  $3\frac{1}{4}$  inches wide, while the others are bare  $3\frac{1}{4}$  inches. The defective plates are well over  $3\frac{1}{4}$  inches at one end, nearly  $3\frac{1}{2}$ , the result being that they will just fit some slides with persuasion and will not go into others at all.

### SOME POINTS CONCERNING THE ENLARGING LANTERN.

At this time of the year many photographers are turning their thoughts towards a winter programme of work, and it is not a few will shortly be considering the purchase of appliances for enlarging, some hints on the most important features that the apparatus should possess may not be out of place. There can be no doubt that the lantern is by far the most convenient form of enlarger, and in these days there is no difficulty in obtaining a very useful instrument at a very low price.

Of course, in enlarging, as in taking a negative, the lens is by far the most important item, and cheap enlargers are, naturally, not fitted with the best lenses possible. Generally speaking, a special lens for enlarging is quite unnecessary, as the lens used in the purchaser's camera can usually be adapted quite well to the purposes of enlarging. If a good anastigmat is available, it will probably serve better than any of the so-called enlarging lenses. If the lantern is fitted with incandescent gas, trouble may be met with if the lens is of very short focus or small aperture. It is not easy to get even illumination with a big source of light, and a small lens or one of short focus, but in a quarter-plate lantern it will generally be found quite possible to work with an  $f/8$  five-inch lens. A four-inch lens will probably be useless, but anything over five inches should be serviceable. For moderate degrees of enlargement, say from quarter-plate to  $12 \times 10$ , an eight-inch lens, in our opinion, the ideal for general use in either quarter or half-plate lanterns. An even longer focal length has advantages, but it necessitates a considerable amount of room, and to get the best illumination a rather longer focus condenser than that usually supplied is advisable.

For larger pictures space can be economised by using a shorter focus lens. A six-inch is a most useful size, but the ordinary five-inch can also be utilised if it has a fairly large aperture. The short focus lens must, however, be of good quality, otherwise it may be difficult to secure good definition over the whole field. With the long focus lens a much smaller angle is utilised, and an R.R. lens will then serve admirably. If a powerful illuminant, such as the arc or limelight, is used, it is advisable to examine the lens before use to see whether its iris is made of vulcanite. If it is, it will probably be destroyed by the heat, and, at any rate, seriously damaged. Such a lens will be quite safe with incandescent gas, but a metal iris or Waterhouse stop is essential if the light gives out much heat, and, of course, a water trough is used.

A difficulty that is often felt when a camera lens is used in an enlarger is the absence of a fine adjustment. The rack and pinion movement of the lantern is generally too coarse for fine focussing, and a lens intended for enlarging is therefore always mounted on a focussing jacket. If a lantern with a fine adjustment to the front is not obtainable, the best plan is to have a lantern-lens jacket fixed to the front. A flange can be soldered to the front of the jacket, and the lens is then readily screwed in place when wanted.

The adjustments of the lantern are few, but there should be ample space for them. The lens should be exactly centred opposite the condenser, and a rising front for the lens is quite unnecessary, though it is provided in many lanterns. If used, it spoils the uniformity of the illumination. Its place is fully filled by a rising and falling movement of the negative, and care should be taken to see that this movement is sufficient. A horizontal movement of the negative is attained by simply sliding the carrier backwards and forwards; this is a very necessary movement, and it should not be interfered with by the useless catches that are sometimes fitted by the makers. Provision for canting the negative sideways is often made, but this is not absolutely necessary, as the same adjustment is quite easily made by pinning up the bromide paper slightly askew on the easel.

A swing movement for the negative is required if the correction of convergent distortion is to be effected, but it should be remembered that the swinging movement complicates the lantern and adds to the cost, while the occasions upon which it has to be used are generally very few. If it is fitted it is necessary to see that it is properly arranged. The axis about which the negative is swung must be parallel with the axis about which the easel swings, and, in addition, it must be possible to tilt the negative sideways in its own plane without disturbing the axis. In some lanterns a side tilt of the negative tilts the axis also, in which case the whole movement is useless for the correction of distortion and might as well be omitted altogether.

A quarter-plate lantern should be fitted with a condenser not less than five and a half inches in diameter, and a half-plate lantern with one not less than eight inches, but these are only the minimum sizes that will cover the plates, and they will only do that when quite close to the negative. Sometimes, through faulty fitting, too much space is left between condenser and plate, and this is a mistake that should be looked for when selecting the lantern.

Another common defect in incandescent gas lanterns is too small a lantern body. For gas the axis of the condenser requires to be rather higher up than is necessary with limelight, otherwise the gas burner cannot be lowered sufficiently; in addition to which the use of a chimney—and one is generally advisable—requires a rather higher lantern body. In a lantern of sufficient size there should be room both for a chimney and for a by-pass fitting under the burner, and the by-pass is an eminently useful adjunct to the apparatus.

A point that should also be carefully considered is the amount of permissible longitudinal movement of the light to and from the condenser. In a quarter-plate lantern it should be possible to put the light anywhere between two and a half and at least fifteen inches from the condenser. This amount of movement cannot, of course, be obtained by simply sliding the tray inside the lantern, the whole body must move backwards and forwards. If the movement is restricted, trouble will be met with in getting even illumination when using lenses of extra long or extra short focus, when reducing, and when enlarging to any very considerable extent.

There is one other point to look to, and, though this may seem a very minor one, it is a detail that at times is of considerable importance. In adjusting the distance of the lantern from the easel it is often convenient to let the lantern overhang the table or other support upon which it is standing. The weight of the apparatus enables this to be done with perfect safety, but unless the baseboard is flat or fitted with continuous side strips to stand upon it is impossible to so arrange the apparatus without tilting the lantern. Many lantern bases are fitted with four ridiculous little feet at the corners, and, therefore, cannot be placed

in an overhanging position at all. If a table or the lantern box is to serve as the support, these feet should be removed and be replaced by continuous rails.

Little need be said with regard to the easel. Rails with a travelling support for the camera and another for a swinging easel are luxuries, but so long as the correction of distortion is not required the swinging easel can be dis-

pensed with. A table will carry the lantern, and a drawing board attached to the wall of the room forms as good an easel as can be desired. Small sheets of paper can be pinned to the board and large sheets can be kept flat by laying a sheet of plate glass over them and securing the board with turnbuttons. A large printing frame forms a very useful easel in these conditions.

## ON CORRECTING FAULTY UPRIGHTS BY COPYING

It is very common in photographs of buildings taken with a hand-camera, to find that the lines which should be upright incline to each other at the top of the picture. A similar failing is not at all rare in photographs taken with a stand-camera, in cases where the building is tall, and there is not sufficient space to plant the camera at a considerable distance. Except with a few modern and somewhat expensive forms of camera, there is rarely sufficient rise of front for a difficult subject, and when the amount of rise is sufficient, the field of the lens may not

intensified or introduced, causing the height to be disproportionate to the width.

Fig. 1 represents a camera, A, pointed upwards to a vertical object B. If now the negative taken in such condition is returned to the camera, and the illumination removed, the object and placed behind the plate, it is obvious that the correct representation of the original could be obtained by placing the sensitive surface in the position occupied by B. It is true that a smaller but similar copy would be produced

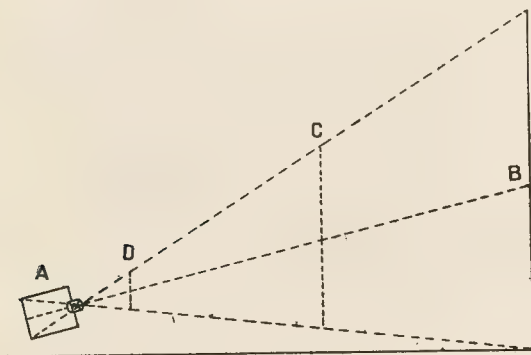


Fig. 1.

be large enough for the corners of the picture to be covered by it, when much use is made of the rising front. The use of a swing back which permits the camera to be pointed upwards, whilst preserving the perpendicular position of the plate, or of a rising swing front (which comes optically to the same thing), is to be avoided if possible, as the plane of the plate is not—when

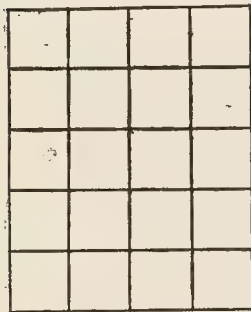


Fig. 2.

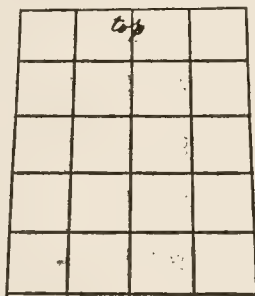


Fig. 3.

this device is employed—the same as the plane of definition, and a very small stop becomes necessary if reasonably good definition is to be secured.

It is well known that when copying a photograph of a building in which the lines that should be upright are inclined, the copy may be made to produce these lines as parallel, but unless certain conditions are observed, a fault of another kind will be



Fig. 4.

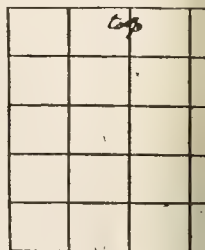


Fig. 5.

placing the sensitive surface at C or D, provided that it be upright, but horizontally at right-angles to the axis of the lens. In the latter case, however, the picture, if the original negative were used, would be altogether out of focus and hopelessly lacking in definition, unless a pinhole stop were employed.

The equivalent in practice to the example just described keeping of the photograph to be reproduced at right angles

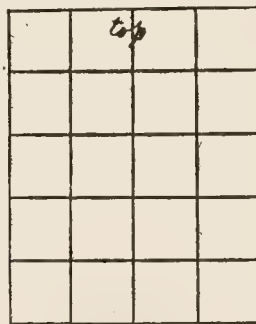


Fig. 6.

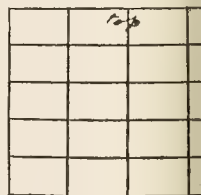


Fig. 7.

the axis of the lens and swinging the camera back—or placing the paper-holder—at the angle requisite for obtaining parallel of the uprights. It is an essential point with this arrangement that the lens should be at the same distance from the original as it was from the plate when the original negative was taken, and, therefore, if a copy of the same size is to be made, it is a photograph of a building or any distant object that



tion, a lens of about half the focal length (for parallel rays) the original lens would have to be employed. Such a lens, even possessed, would be difficult to work with, as the inclination of the sensitive surface, together with the large angle included—usually wide for copying purposes—would necessitate the use of an extremely small stop. Fortunately, there is another way, involving the same amount of difficulty.

Fig. 2 is a photograph of a large diagram made for the purpose of illustrating the subject under discussion. It was prepared by stretching bands of black ribbon velvet over sheeting pinned on a frame. The squares, five in height and four in width, are seen to be all alike in both directions. Fig. 3 is a photograph of the same diagram with the camera pointed as would have to be (if without rise of front or swing back) when photographing a high building. The lens was of the rapid symmetrical type, and of about 5 in. focal length, such as is commonly supplied with Kodak and other hand-cameras.

It has been mentioned that when we depend entirely on swinging the camera-back or sensitive surface, the picture to be copied must be at the same distance from the lens that the original was when the original negative was taken. Fig. 4 is a copy of Fig. 3 taken with a lens having a normal focus of 7½ in., and the camera back swung to restore the uprights. The sides

usual kind. Fig. 7 is a copy of the same original, No. 3, made with a lens of 12 in. normal focus, and with the original only swung. With a lens of double this focal length, the diagram (Fig. 3) could not be swung sufficiently to obtain parallelism of the sides, even when the height was dwarfed down to little more than a line.

Fig. 8 is a photograph, such as one often sees, of a house when the camera is pointed upwards to include the whole subject. As there are trees hiding one side of the building, the want of uprightness is not so striking as when perpendiculars are in evidence on both sides; nevertheless, the inclination is sufficiently evident to be objectionable.

Fig. 9 is the photograph of Fig. 8 copied with a 7½ in. lens and with the original swung to obtain uprightness. The house and the children are dwarfed or squatted, and they are much more so in Fig. 10, which was copied with a 12 in. lens. For this last photograph the original was not given sufficient swing to get the uprights quite true. If it had been, the dwarfing effect would have been more strongly marked still.

The relative amount of the swing of the original and the camera back necessary to obtain a perfectly correct proportion



Fig. 8.



Fig. 9.

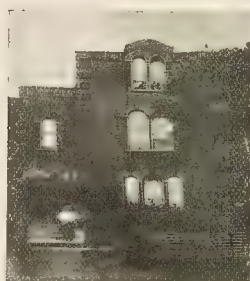


Fig. 10.



Fig. 11.

have been made parallel, but the height is now too great for width. The dotted line (added since) shows what the true height should be. Fig. 5 shows another copy of Fig. 3 made keeping the camera back square and inclining the picture so that it is being copied. It will be seen that it is much too low for the width. However, this naturally leads to Fig. 6, in which the original and the camera back are swung in opposite directions, and the true figure is restored. This method has the advantage that the double swing tends to accommodate conjugate foci, so that comparatively little stopping is required. It must not be assumed, however, that a mutual adjustment of the swings to obtain the best focus will suffice to ensure exact truth of proportionate height and width. As the copy is rendered much too short by swinging the original, and was even in a less marked degree on swinging the back; when the correctly proportioned Fig. 6 was photographed, the picture was slightly swung, and the camera back more so than would be required for obtaining the best focus.

The amount of deformation (shortening or lengthening in proportion to the width) when either original or camera back is swung, increases, generally speaking, as the focal length of the copying lens is greater than that of the lens used in taking the original photograph, and for this reason a lens of moderate focal length is to be preferred to the long focus lenses generally—and with reason—preferred for making copies of the

of height and width is a question dependent upon conditions existing at the time of taking the original photograph, and these conditions may not be known. But there is a very common case, that of the ordinary hand-camera without swing back or rising front, having a lens of known focal length, where the requisite data for obtaining correctness are at hand. In this case, if a lens is used having such focal length that when employed for making the copy it shall be at the same distance from the plate or print to be copied that the original lens was in taking the picture, the resulting copy will be in true proportion (as shown in Fig. 11) when the camera-back or paper is swung to the amount required for obtaining parallelism of the uprights. As before mentioned, this method requires, when making a copy of the same size as the original, an almost impracticably small stop; and this particular photograph (Fig. 11) was made by swinging both original and camera back, as when photographing the diagram Fig. 6.

When the image is considerably enlarged, not only can a lens of longer normal focus be employed, but the swing of the sensitive surface will not so violently disturb the focus as is the case with a copy of the same size as the original. If the size of the enlarged image is not material, it is comparatively easy to find a lens which will have its focal distance from the negative equal to the distance of the original lens. An enlarged image may now be projected, and the screen swung until the uprights

are parallel. Now take a measure of some details where you can find equal distances in the upright and horizontal directions. These measures will serve as guides when a copy of the same or of any other size is required. The picture and the camera back are swung till parallelism of the uprights is obtained, and then if the height is too great for the width, as

ascertained by the measurements just described, the camera back is less swung, and the original picture more so; or if, is more probable, the height is insufficient for the width, camera back is more swung, and the picture or negative brought more to a right-angle with the axis of the lens.

W. E. DEBENHAM

## THE CONVENTION OF THE PHOTOGRAPHIC ASSOCIATION OF CANADA.

THE thorough planning and consistent effort of the executive of the Association did not secure the response and support that it deserved from the craft at the convention of the photographers of Canada, held in Toronto on August 4, 5, and 6. A good programme of demonstrations was provided, and a fine display of excellent work made by the various paper makers for the benefit of a small and somewhat listless attendance.

The display of members' work was limited: much of it was good and some excellent.

The exhibits of the dealers and manufacturers, however, were more extensive than at any former convention, the paper manufacturers being very much in evidence. In order of effectiveness and excellence of prints can be mentioned the displays of the Kodak Co., The Defender Photo Co., of Rochester, N.Y., The Artura Photo Paper Co., of Columbus, Ohio, and Cameras Limited, of Montreal.

There was a good exhibit of mounts and cards by the Canadian Card Co., of Toronto, and exhibits of apparatus and supplies by the United Photographic Stores, Limited, of Montreal, Ottawa, and Quebec, J. G. Ramsey and Co., Limited, and H. G. Tugwell and Co., both of Toronto. Fisher Bros. and Co. made a good display of frames and mouldings.

The session of the convention began on Tuesday, the 4th. The retiring president, Mr. A. M. Cunningham, in his annual address, briefly reviewed the progress of photography and its increasing applications in the field of industry and in science. The advances in colour photography had been marked, the Autochrome process being a great achievement. Mr. Milton Waide, of New York, gave a demonstration of the Ozobrome process. In the evening a demonstration was given by a Kodak demonstrator of lighting and posing by arc lamp, and development of the exposed plates by the tank method.

On the Wednesday Mr. Charles Wesley Hearn, of Boston, gave an address on "Some Art Principles Easy of Adoption and Pleasing to All Customers."

Mr. A. M. Cunningham, of Hamilton, demonstrated how portrait could be made outside the studio. A demonstration of the Autochrome plates was given by Mr. John Kennedy, Toronto, in place of Mr. M. Schmitz, of the Lumière Company of Paris, who was prevented by illness from being present.

The convention adjourned in the afternoon to attend a picnic at Scarboro' Beach, tendered by the manufacturers and dealers. A thoroughly good time was enjoyed by all.

On Thursday an address was given by Mr. George Graham Hollowell, of Terre Haute, Ind., on "Photographic Fraternalism." Mr. Hammer Croughton, of Rochester, N.Y., spoke "Artistic Improvements of Negatives."

There were demonstrations on the various makes of paper given during the convention.

The Committee on Fire Insurance Rates reported that a board of underwriters assured them that no higher rates were now charged photographers than to other businesses. This does not seem, however, to be borne out by the experiences of photographers, and further inquiries and effort should be made.

Mr. David J. Howell, of Toronto, called attention to "The British Journal of Photography," and pointed out its value to the progressive photographer. He referred to the special of made by the publishers to Canadian photographers of a month's numbers free on receipt of their business card.

The following officers were elected for the ensuing year: President, Mr. J. Frank Jackson, Barrie, Ont.; First Vice-President, Mr. J. T. Leatherdall, Hamilton; Second Vice-President, Mr. Walter Dickson, Toronto; Third Vice-President, Mr. C. A. Lee, Listowel, Ont.; Secretary, Mr. Fred Roy, Peterborough, Ont.; Treasurer, Mr. A. A. Gray, Toronto.

The place of meeting of the next convention will be decided on by the executive committee, composed of the above officers.

A vote of thanks was tendered the dealers and manufacturers for the entertainment of delegates at Scarboro' Beach on Wednesday night.

## IN THE LAND OF MAKESHIFT.

[Queries as to the qualifications to be possessed by a photographer thinking of trying his luck in Canada constantly reach us, and have usually to be answered somewhat generally. We may, therefore, publish the following MS., which reaches us from a reader of the "B.J." who has had to push his way in British Columbia. In more accessible regions and under less severe monetary conditions the photographer could rely on the makers at home, but our reader's note shows the value of being able to help oneself in all kinds of ways when in an undeveloped country.—Eds. "B.J."]

In the belief that some of the expedients to which I have recently been reduced may prove profitable reading, I have ventured to record some of my experiences. On my arrival in British Columbia I found myself minus everything except—an important exception—lenses. I bought a camera, and, in the way of utensils and apparatus, I bought nothing else. Six thousand miles is no joke; it is, in fact, what our Yankee cousins might call a "cash proposition"; but brains, even such as mine, I thought, must count for something.

With the avowed intention of setting up as a "mug-faker,"

with a definite object in view, therefore, I "set to." "gallery" I could not afford to buy, and still less afford to build; so I rented two large 27 ft. by 21 ft. rooms, one facing north-west, the other south-east. That which I selected for studio purposes (with the north-west aspect) has three tall windows, each 10 ft. high. There is no top light, of course, and I am quite satisfied that, except for large groups, the value of the skylight is quite negligible, especially if the windows slant inward at a slight angle—which mine do not.

The next problem was that connected with the construction



room, by which I mean a room as opposed to a cupboard. There were a few old boards about the place, and some odd bits of brown paper of that thick and stodgy variety sometimes used under carpets. By means of an old table-knife and with a hammer I managed to split the boards lengthwise, and these set upright with cross pieces at right angles fixed with formed a structure sufficiently stable upon which to tack paper. This skeleton wall, bounding two sides of a space by 6 ft. of the south-aspected room, enclosed what was to be my developing and enlarging room for many months to come, and, with a little patching and pasting up of the window waste wall-paper, behold! it was dark.

water I had the convenience suggested by the household which I had been careful to annex for my dark purposes. It occupies the corner next the window, I let in to the wall-patching a double thickness of orange paper to work by. The short winter days then fast approaching counselled other devices.



had no red lamp, but I found an old four-gallon coal-oil tin, and a piece of window-pane, and some more orange-coloured paper. I cut out one side of the tin, covered the glass with the paper, and inserted it in slots formed by two strips of wood nailed along the edges of the cut-out side. A small wall-lamp with reflector unmandeered for illuminant, and seven little holes punched in the top of the tin, besides affording good ventilation when the lamp is lit, project quite a decent imitation of the Bear on the white-washed ceiling. This benign constellation of stars at all my evening operations, nor have I found that their influence is other than—well—innocuous. It would be quite possible to nail a metal cover over the perforations, but I have not found it necessary. The ceiling is 12 ft. high. The tin also has a handle at the top which, marvellous to relate, never becomes unbearably hot. The lamp is, therefore, removable at

Among other things I had with me a tiny medicine measuring-bottle of 2 oz. capacity. By careful measurements scratched with

a steel wheel-cutter against the side of a glass jam-jar, I constructed quite a creditable pint-measure.

No dishes! But there were some thin wooden boxes about; of these I made trays with saw, nails, and hammer, and covered them inside with oil-cloth. You soon get used to them, and indeed they are light, clean, and efficient. The cloth requires renewing every few months, that is all, at quite a nominal cost—for British Columbia.

And for all intents and purposes these oil-cloth covered trays are quite water-tight. I have hypo standing in one, month in, month out. The hypo certainly gets into the wood at last, but the water is evaporated quicker than it can leak; and as I keep this dish always in the same place, I have no trouble with respect to contamination. It is quite providential how chemically unclean one can be, provided—but this is nothing to preach about, so the less said the better.

A month or two back I had to make preparations for handling several gross of prints at once, and to this end I converted a long shelf or dresser adjacent to the sink into washing-troughs by the simple expedient of nailing rough boards along the wall and side as well as across their ends. Four yards of oil-cloth did the rest. With such a weight of water as these troughs contained when full, I found a double thickness of cloth necessary. The actual washing is conducted by means of a long half-inch rubber tubing attached to the tap, with an overflow into the sink; and the troughs are emptied by syphoning off through the same tube. To effect this it is only necessary to turn off the tap, disconnect the pipe, and the water flows back into the sink without the smallest need for attention. The tanks are then sponged out, and the washing is done.

For mount-cupboard I utilise the various packing-cases in which sundry of my belongings were hauled over the Canadian Pacific Railway. Every one of my trunks arrived smashed: the locks and hinges were torn off in a fury of unhaste—two months was the time they occupied to travel the distance from Montreal to Vancouver; but the packing-cases arrived immune. Moral: Put your faith in packing-cases—and your goods. These packing-cases, then, I set on their sides—four of them—one on top of another, and used their lids for the construction of shelves. A piece of old chintz curtain now hangs from the topmost, which makes the cupboard fairly proof against dust.

Large sheets of card I was for some time at a loss to know how to store satisfactorily. To keep them on end between the boards they arrived in proved to be inconvenient in other respects. Vancouver is building—fast, and it was not difficult to arrange with a local builder for the gift of three large cases in which plate-glass is stored for transport; these measured 24 in. by 52 in. by 8 in. Set on their sides, and supported on legs made of 3-in. board, they afford excellent service as work-tables, while in the drawer-like interior there was ample room for my 22 in. by 28 in. sheets of card. Only one precaution was then needful: to prevent water during mounting operations trickling through the cracks, their tops I covered with the all-useful oil-cloth.

For drying prints and negatives I have arranged a board 5 ft. long, with two rows of smooth-headed wire nails set lengthwise along and 1 in. from each side. As each nail is placed  $\frac{1}{4}$  in. from its companion, quite a number of prints or negatives can be set up to dry upon it. It occupies practically no space, and is very efficient.

And now I have done, except for one important contrivance which occupies the first place in the studio—to wit, the camera-stand.

At first I started using my field-camera and tripod; but the manipulation of five legs every time a sitter had to be taken finally became insupportable, as they proved too often unsupporting. Buy, I would not. Here to-day, to-morrow—where?—and after my smarting experience of the gentle C.P.R. I determined to lay up for myself no bulky paraphernalia to transport when the time came.

The length of my studio and the focal length of my favourite lens determined the necessity of being able to work right up against the wall for full-length portraits, consequently I must have no backward projections to rob me of space. I must have the up-and-down and all angle movements without cogs, wheels, or, indeed, any system of mechanism which I could not myself contrive. Above all, the stand must not appear too strange a creation to affright the nervous sitter, and, to end up with, I had never done any carpentry in my life! This was the problem I was "up against" (as is said here), and I shall leave to readers who have waded through this sheaf of egotism to declare how far I have succeeded.

After much anxious cogitation, I concluded that my salvation lay in the principles of leverage, and the accompanying photograph will, I hope, elucidate my meaning, if not illustrate a new principle of camera-stand construction.

When placed in position the camera faces the direction on that side of the stand where the two side-levers in the illustration are seen to be connected. By means of the hooks on the back-standards the levers, connected by cross-rods, can be made to assume every angle needful for the rough location of the image on the ground-glass; for fine placing the top lever supports a double platform hinged in front, and this raised by a screw at the back effects the final adjustment.

It will be seen that nearly the whole weight is supported by the lower levers, which are hinged with the top levers at their front extremities, the front standards merely guiding the general movement, which is quite independent of them. This is something of an inconvenience in lowering and raising the

camera; but the camera is not of the heavy type, and habit soon accustoms.

One other weakness must be chronicled. The right-hand back standard is liable to be in the way of the dark slide when intended to be inserted in the camera "landscapewise." In the case a working position for the camera must be found on the stand by drawing it back before focussing is far enough to admit of the necessary after operations. I speak of the needs of my own camera, which is of the "Century" pattern.

There are details of faulty construction which I have had neither the time nor the inclination to modify, as they are easily overcome in practice, and to correct them would necessitate a new model and mechanical contrivances for which I should have to call in expert advice and assistance.

All of which must be taken for what it is worth, not as final, but as a means to an end in the land of makeshift.

For the rest, I frequently see advertisers in the home papers asking for advice and information as to the photographic trade in Canada. Canada is a large place; but from all accounts conditions in the interior and west in British Columbia are not dissimilar. Distances are enormous, material is costly, wages are high; and the handy man will come out on top here or elsewhere.

For myself I have travelled along the lines of resource ably indicated not from choice, but from compulsion. I am not concerned with surprising, but with interesting, others. I have surprised myself—that is all. Hence this screed.

"B. J."—IN BRITISH COLUMBIA.

## A RECEPTIONIST'S CONCEPTIONS OF HER DUTIES.

[In the current "Association Annual," issued as a souvenir of the Convention at Detroit of the Photographers' Association of America, appears a paper by Miss Julia C. Reith, which possesses additional interest from the fact that its author's experience in the reception-room was gained in the service of the redoubtable J. C. Strauss, of St. Louis.—Eds. "B.J."]

RECENTLY a gentleman, who has been a patron of the studio regularly for over twenty years, and with whom I have had many dealings, came in with a friend. He desired to introduce the latter, but hesitated, apologised, and expressed regret that he had forgotten my name. I said: "No, you haven't forgotten it—you never knew it."

I was proud of the incident because it proved that I had handled this customer satisfactorily for a long time, without forcing my own personality upon him. It showed that my interest in the business had impressed him. I think this one of the essential qualifications of a receptionist—the sinking of one's identity in promoting the interest of the studio. I do not mean that one should have no individuality. One should not be a mere machine or an imitator of someone else, but at the same time should not allow one's own affairs, likes or dislikes, or opinions, to enter into the conversation with a patron.

A receptionist should be like a cultured accompanist, probably just as much of an artist as the soloist, but whose personality is lost in a perfect performance.

I believe another essential is to be cordial and courteous to every person entering the studio. One should be attentive, listening to the patron's affairs with interest and sympathy.

I believe that women are, therefore, more successful in the office than men, because they can indulge in small talk and win the approval of customers by being good listeners.

While I regard it necessary to be on the best of terms with patrons, and I appreciate every attention shown me, I never allow these to go beyond words. The receptionist who accepts favours places herself under obligations, which can be repaid only at the expense of her employer. I think it will be found

that the saleswomen who have been continued longest in service are on the most cordial terms with customers during business hours, but their desks are not covered with candies, flowers, or other gifts. These, while usually offered cheerfully, almost compel return favours when orders are being taken. Go to large commercial establishments; the man who steadily advances from the list of minor employees to the management of the business is not the one who has been showered with presents by those with whom he has had to deal.

### Special Visitors to the Studio.

I said that one's personality should be repressed, but this should not be the result of the treatment accorded by her employer. The owner of the studio should make opportunities for her recognition as a person worthy of confidence. I feel that much of the dissatisfaction with receptionists is due to the lack of consideration by the employer. He is only too happy to let her have full sway when the ordinary run of patrons come in, but if someone of importance enters, then Mr. Artist gently hints—no, not always gently—that she had better retire to a seclusion and get busy with detail work. This method prevents the receptionist from getting that broader and more valuable experience, and greater self-confidence which comes from contact with all classes of customers. Another common and very unwelcome practice among employers is to ignore the receptionist when prominent photographers happen to visit the studio. I never hear of a suffer from this; on the contrary, whenever any member of the profession, particularly if he was recognised as one of the leaders, visited us, I was always brought forward, introduced and given to understand, "Here is the man you want to know



was done in such a manner that it left both the photographer myself at perfect ease, giving me an opportunity, by comparison of methods and the interchange of ideas, to profit by his experiences. By reason of this treatment I have become personally acquainted with nearly every member of the profession. My name is known outside of his own community. It has introduced me in them and has led me to become quite familiar with work.

His willingness to have me meet, not only the most important members, but also the most prominent photographers, was but only one of the phases of the complete harmony and fullest confidence existing between the operating room and the office; I do not have any feeling of a sentimental nature, but such perfect understanding that there was not the slightest friction to attract the attention of the sitter.

That I have endeavoured to say necessarily implies that to obtain any fair share of success, a receptionist must be thoroughly in love with her work, enthusiastic in the extreme, will not be at her post early and remain late. One must have intuition and tact, which may be natural or acquired; must be all things to a patron, and, possibly, rather exacting with other employees of the studio who complete the order, but who do not serve the customers, so that the latter will have no reasonable ground for dissatisfaction.

It should be her pleasure to familiarise herself with the names and persons of consequence in the community, so that when such a person enters she recognises the name immediately, a source of great advantage.

### Receptionist and Employer.

It seems to me one reason for poor service in the reception room is the disposition on the part of many employers to make no allowance for occasional errors in the handling of customers. No one becomes proficient at such work until after a schooling and experience which can be acquired only with mistakes. The owner of the studio expects waste and loss when he changes printers or uses some new apparatus or tries a different kind of paper, but he resents any errors in judgment in the office. Many employers also make a grave mistake when they listen approvingly to complaints against the receptionist by a patron. The saleswoman should be absolutely truthful and candid with her employer when a misunderstanding with a customer arises, and he should adjust the difference without disparaging or embarrassing his receptionist in the presence of a patron. Though the receptionist should be treated with justice and some leniency while acquiring efficiency in her work, yet, when she has finally become valuable to her employer, she should not forget that her success has been achieved only by experiences which frequently were a source of loss to the owner. This should make her appreciative of his forbearance and prevent her from feeling that her services and work are underestimated.

Those who are kind enough to follow this rather crude endeavour to regard the receptionist's work from a viewpoint behind the counter, will realise that it would require a volume, instead of a few pages, to do justice to this interesting subject.

JULIA C. REITH.

## ON THE SENSITIVENESS OF PHOTOGRAPHIC PLATES AT DIFFERENT TEMPERATURES.

The following paper, which is a further contribution from Mr. R. J. Wallace, of the Yerkes Observatory, contains the results of tests made with a view of explaining the discrepancy between the results of Abney and King as to the effect of low temperature at the time of exposure on the sensitiveness of a gelatine dry-plate. It is shown that the effect differs in different parts of the curve. We are indebted to Mr. Wallace and the "Astrophysical Journal" for the paper.—Eds. "B.J."]

1895 Abney investigated the effect of temperature upon the sensitiveness of photographic plates, and gave his conclusions in an address before the Royal Photographic Society.<sup>1</sup> His methods and results may briefly be summarised as follows: A special box was constructed so that its temperature could be varied by means of a cooling mixture or a "heated brick" contained the plate under

When at the determined temperature, exposure was made through a square aperture, moving along a slot in the lid, to a small Argand paraffin, or amyl acetate lamp. From measurements of the plates thus obtained, where the light was constant and exposure varied, this investigator found that there was "not necessarily any variance in the gradation of the curves—but that rapidity is altered—although not to the same degree, for each part of plate," being invariably less as the temperature is reduced. With constant exposure to light of varying intensity, he also found that with exposures made above 33 deg. C. the gradation changed, the curve becoming steeper, although up to this temperature the heat had no other effect upon the plate and making it more rapid. In this latter portion of the work, the light used was not exactly the same in the hot and cold experiments, exact values not being aimed for, but merely change in gradation.

Later, E. S. King, of Harvard College Observatory, also made experiments upon the influence of temperature upon sensitiveness,<sup>2</sup> and exposed two portions, cut from the same plate, to temperatures of "about 0 deg." and "about 80 deg.," obtained by placing one outdoors, and the other over a hot-air "register"

until the plates had taken the temperature of their surrounding air. They were then exposed for one minute to the extra-focal image of *Polaris* in the telescope. In the case of the cold plate the "focus was set to reduce the light by one-half magnitude." It was found on development that the images were of similar density, showing that "the difference in sensitiveness for a change of about 70 deg. or 80 deg. is 0.5 magnitudes, the cold plate being the more sensitive." From further experiments it "was found that temperature not only affected the sensitiveness of the plate, but also changed the gradation of the intensities of darkening."

When the results of these investigators are compared they are almost directly opposed to each other. The work presented in this paper was therefore undertaken in the hope that a greater concordance might be obtained by working under definite conditions.

### The Method of Testing.

The plan of work will first be noticed, as it will assist in the clear understanding of the results. Plates were exposed in a temperature-box constructed for this purpose, somewhat similar to that used by Abney, at temperatures varying from +100 deg. to -14 deg. C., and were developed and fixed under precisely similar conditions. Another series of exposures under natural conditions of temperature, and varying from +24 deg. to -14 deg. C., was made to corroborate the laboratory results with artificial temperatures. The negatives thus obtained were measured with the spectro-photometer especially constructed for such work, and detailed in a former paper,<sup>3</sup> and curves were plotted show-

<sup>1</sup> "Action of Light in Photography." Samson Low, Marston & Co., London, 1897.  
<sup>2</sup> "Photographic Photometry," "Photo. Beacon," 17, 267, 1905.

<sup>3</sup> "Astrophysical Journal," 25, 124, 1907.

ing the relation between exposure and density for each variation in temperature.

### A Temperature Box

The design of the temperature-box will be understood by reference to the plan which is given herewith (Fig. 1): *A* is a zinc-lined box about 12 inches square, closed by the light-tight lid *B*, which carries with it the cubical plate-chamber *W*. This chamber contains a transparent scale-plate *D*, which rests in

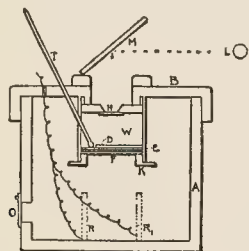


Fig. 1.

contact with the surface of the sensitive plate *E* under test. This sensitive plate is held in position by means of a light wooden frame *K*, in which is fitted a piece of deep-ruby glass *F* to avoid action from scattered light inside the box *A*. Light is obtained from an acetylene burner at *L*, and reflected down by means of the mirror *M*, through the ground-glass *H*, and thence passes to the sensitive plate. A thermometer *T* is inserted so that its bulb rests in contact with, and presses against, the sensitive surface. Increase in temperature is obtained by leading the 110-volt direct current through the two resistance coils *RR'*, which

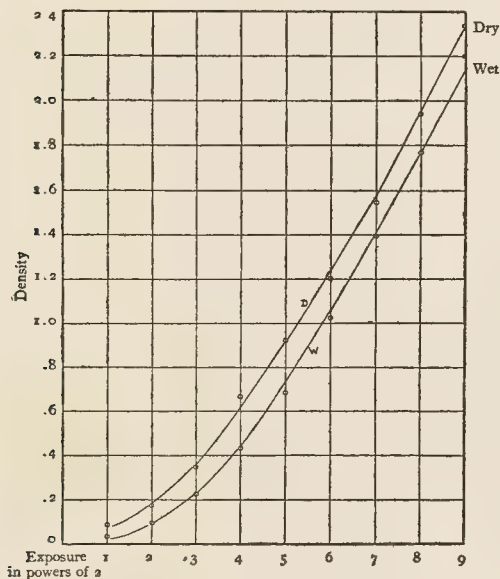


Fig. 2.

run the entire length of the box. For reduction in temperature many experiments were made with various freezing mixtures, and also with ether spray and liquid air, which were introduced at *O*.

The scale-plate used was a negative strip developed from an exposure to the revolving sector-disc machine. The method of exposing through a transparency was selected as being most desirable, as by this means there is obtained a constant exposure to light of variable intensity, thus duplicating the conditions under which one works in the case of exposure at the telescope,

or in general camera work. The dimensions of the transparent portions of this scale-plate measure 6.5 by 2.7 cm., while the plates used were 8 by 10 cm. The use of the sector-disc machine itself would have been still better, but the impossibility of making use of it without practically rebuilding it led to the abandonment of the idea.

### Artificial Light.

The light used was acetylene, prepared in a Colt generator water-to-carbide type, and burning from a  $\frac{1}{2}$ -ft. Halm burner

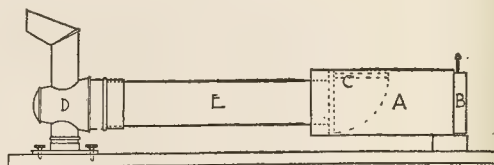


Fig. 3.

under a uniform pressure of  $2\frac{3}{8}$  inches of water. In front of the flame, and separated from it by a distance of 11 mm., a metal plate is supported from a cylindrical metal chimney, this plate being pierced with a circular aperture of 2.5 mm. diameter. The aperture is at such a height that its position comes immediately in front of the centre of the white portion of the flame. The burner is fed with gas which passes from the generator, and then through a large bottle containing caustic potash; a manometer indicates the pressure.

If (as has been pointed out by previous writers) care be taken not to turn down the flame at the burner, but to cut off the gas

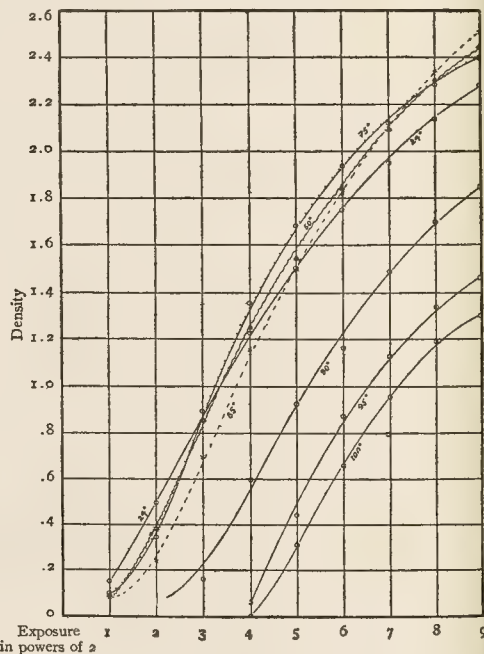


Fig. 4.

supply abruptly, this arrangement forms an exceedingly good intensity standard, in cases where the spectral quality is suitable. In the present work no compensation colour-filter was made use of, as the spectral distribution of the light intensity was of no moment, and was used with similar plates throughout. Generators of the carbide-to-water type are unsuited unless equipped with some form of pressure governor.



### Exposure, Development, and Precautionary Measures.

The primary object of the investigation was its relation to the photography of faint celestial objects, only one make of plate was experimented upon, viz., "Seed 27 Gilt Edge," which was selected because of its uniformly greater speed. The exposures were made by first dividing them into three groups according to the temperatures, as follows:

from + 24 deg. C. to + 100 deg. C. } (Laboratory exposures)  
 from + 24 deg. C. to - 14 deg. C. }  
 from + 24 deg. C. to - 14 deg. C. (Outdoor natural temperature exposures)

The actual handling of both groups A and B, separate sets of plates, all of similar emulsion number, were exposed at each of the following temperatures: (A) + 24 deg., 50 deg., 75 deg., 90 deg., 95.5 deg., and 100 deg. C., and (B) + 24 deg., - 2 deg., and - 10 deg. Besides, several 8 by 10 plates were cut into six pieces, and the resultant smaller sizes were

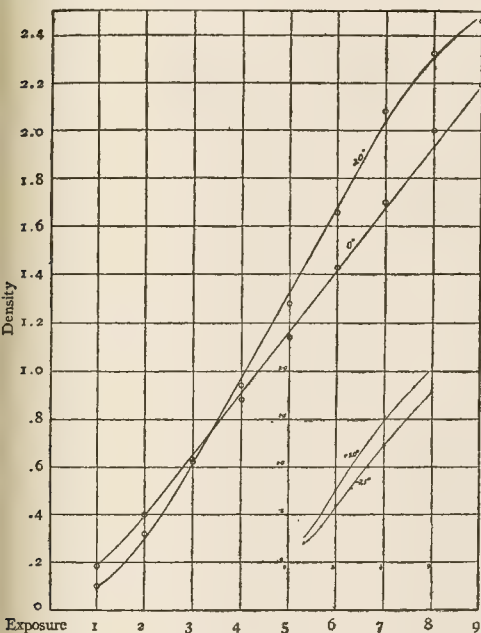


Fig. 5.

exposed similarly, care being taken that each plate of the sets was exposed at a different temperature, thus assuring comparison with each other.

The exposure given to each plate was carefully kept constant to save the actual temperature of the plate itself. The distance of the flame-diaphragm from the centre of the mirror was 35 inches, and the duration of exposure was 3 minutes, carefully timed by means of a stop-watch.

After exposure of any one group the plates were removed from the temperature-box, numbered, and laid face up in an open plate-box for a few minutes, until they had assumed the temperature of the room, and then replaced in their original position until all of the units of that group were completed.

A set of plates was developed at the same time, the developing agent being rodinal, which was used at a dilution of 1:4; the temperature of development was 20 deg. C., and the duration of time 3 minutes. Some few of the sets were purposely developed for a shorter time—down to 1 minute 30 seconds—in order to make certain that a difference in  $\gamma$  would not affect the final result. In every case the plates were first soaked, immediately before development, in a large quantity of distilled

water (temp. 20 deg.) in order to ensure the certainty of equal temperature for each plate.

In the case of the plates exposed at reduced temperatures, by the aid of freezing mixtures of ice and salt, etc., the exposure of the plate for some time in the box, to enable it to assume the necessary temperature, gave rise to the idea that the presence of so much aqueous vapour might give disturbing results, even although the plate itself, by reason of its position in the inner chamber, seemed to be protected therefrom. However, the action of water vapour was investigated in the following manner: A  $3\frac{1}{4}$  by  $4\frac{1}{4}$  plate was cut into two strips, one of which was soaked in distilled water for 3 minutes, and then removed, drained, and placed in the plate-holder side by side with the dry slip, and both were immediately subjected to simultaneous exposure. Both plates were then soaked in water and developed.

Examination during development shows that the image appears with equal rapidity on both strips, but as development progresses the "dry" slip becomes apparently more dense. Ex-

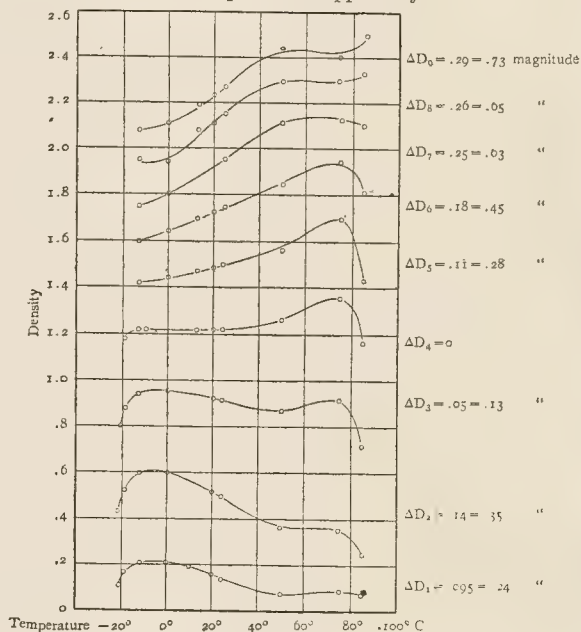


Fig. 6.

amination of the fixed and dried negatives confirms this greater density. Measurement of the plates furnishes data for the construction of the accompanying curves (Fig. 2), from which it will be seen that the general speed is reduced by  $2^{0.5} = 1.4$  times; the curves, however, do not cross, but appear to be shifted along the log  $E$  axis and parallel to it. From the temperature-curves, which will be shown presently, it will be seen that aqueous vapour (if present) therefore does not alter the result. This experiment was several times repeated, for varying times of preliminary immersion, with uniform results.

Any distributing influence of the ether vapour upon the sensitiveness was also investigated, but with negative results: even bathing in sulphuric ether appears to have no effect upon either  $D$  or  $\gamma$ .

In the course of the work it was also necessary to determine the influence of soaking in water prior to development, as some of the test plates were developed without this initial soaking. Experiments upon a sector-disc exposure, where the plate was cut in half before development, and one portion soaked in water, showed, when both parts were developed together, that the image appears first upon the dry half and seems to have greater vigour

As development progresses, the wetted plate rapidly overtakes the other and (by ruby light) soon no difference is discernible. Measurement of the plates, however, confirms the results arrived at by Mees and Sheppard, viz., the wetted plate has a higher  $\gamma$ , and is likewise shifted along the log  $E$  axis,<sup>4</sup> but this does not influence the temperature test results.

Fourteen duplicate sets of plates completed the laboratory experiments, of which eight sets were of Group A. Preconceived opinions held by various observers regarding the influence of temperature upon sensitiveness necessitated verification of the laboratory results by exposures made at duplicate temperatures under natural conditions. For exact quantitative work exposure at the telescope on "extra-focal" images could not be considered, as uniformity of photographic light intensity is impossible; for, while an experienced observer is able to detect a certain amount of atmospheric "thickening," yet he cannot make any reliable measure of the same, nor can he say what absorbing influences are present at any time during the work, particularly in the more refrangible wave-lengths, the region of greatest photographic activity.

For this reason, therefore, a separate arrangement was made, which is shown in outline in Fig. 3.  $A$  is a rectangular wooden box into which fits the plate-holder  $B$ , while a flap-shutter,  $C$ , controls the length of exposure. Light is supplied from the constant acetylene burner at  $D$  (this burner being the same as was used for the laboratory tests). The light was used at a constant distance of one metre from the plate surface, and fits "light tight" into the end of the brass tube  $E$ .

In practice the scale-plate (which was the same as used in the foregoing experiments) was placed in contact with the sensitive plate in the plate-holder. The entire apparatus and the plates intended for use were placed out-doors in the open air some hours prior to their exposure, and arrangements were also made for changing plates out-doors. As a rule, six exposures were made out-doors at low temperature, followed by six exposures in the laboratory at "normal" temperature. Altogether, Group C covered eleven sets of plates, averaging four to eight plates to a set. As with Groups A and B, each set of Group C was developed at one time, under constant conditions as previously described.

The laboratory experiments connected with this work were begun in the early part of 1906, but the natural temperature verifications could, of course, be performed only during the winter months, and were conducted at various times during 1906-7 and 1907-8. These past two seasons have not been characterised (at this location) by very low temperatures, but sufficient data have been obtained to give almost uniformly concordant results.

#### Method of Recording Results.

When all of the principal plates had been measured in the photometer, the densities for each of the plates corresponding to similar temperatures were combined, and a mean was obtained. This tabulation showed a good agreement between each of the plates, there being no error greater than that which could be ascribed to the local variations of the plate coating. It is not necessary that these results be given *in extenso*, but Table I gives an example which may serve well as a specimen.

TABLE I.

Plate.	Measured Density of the Corresponding Strips.								
	1	2	3	4	5	6	7	8	9
A .....	0.0719	0.3642	0.8632	1.3019	1.6441	1.8064	2.1117	2.4012	2.5312
B .....	0.0691	0.3819	0.8679	1.2729	1.6262	1.8756	2.1149	2.2921	2.4160
C .....	0.0712	0.3687	0.8555	1.2100	1.5037	1.8621	2.0960	2.2115	2.4322
Mean .....	0.0707	0.3716	0.8722	1.2616	1.5580	1.8480	2.1082	2.3016	2.4598

(<sup>4</sup>) "Journal of the Royal Photographic Society," 47, 88, 1907.

The mean densities thus obtained, when plotted on square paper, with the density as ordinates, and the abscissae as exposures, give the sensitiveness-curves for the temperatures considered. Fig 4 shows the curves of temperatures + 24 deg. 100 deg. C., while Fig. 5 shows the effect of reduction from + 20 deg. to - 20 deg. C.

#### Results.

In these curves representing temperature increase, it will be noted that between the temperatures of 24 deg. and 75 deg. the curves cross one another: this is the "alteration in gradation" spoken of by both Abney and King. In the opinion of the writer it is this "alteration" which accounts for the discordance between the findings of these workers. According to Abney increase in temperature results in added speed, while according to King, greater speed, even to 50 per cent., is obtained by decrease in temperature. In reality, then, it simply depends upon which portion of the curve is taken as to whether the speed is increased or reduced, i.e., whether one considers faint objects with consequent low photographic densities, or bright objects with full exposure and consequent high densities.

In the negatives obtained, the development was such that the "straight portion" of the characteristic curve embraced about five magnitudes. As the densities of a photographic negative throughout this "straight portion" are proportional to the logarithm of the light received, then it is sufficient to multiply  $D$  by 2.5 in order to convert it into stellar magnitudes. Such magnitudes, however, will not be absolute, but merely relative as they are based upon the light used in the course of the investigation, and will vary according to the initial intensity, for, as is well known, the photographic plate does not follow a straight line law with reference to intensity.

Thus, from this point, where the curves cross, the plate comes slower for fainter stars as the temperature is increased while under the same conditions the plate is faster for the brighter stars. Beyond a temperature of 85 deg. C. the plate breaks down, and a considerable amount of fog is induced which increases very rapidly with a further slight rise, until at 100 deg. C. it is very heavily veiled and badly mottled. Measurement of the plates taken at this temperature presented considerable difficulty. The actual "fog value" of each plate was, of course, subtracted from the densities before plotting.

Taking the case of the curves representing the plate values for the temperatures of 24 deg. and 50 deg., we see from the mean separation of the curves  $D_{50} = 0.06$ , which amounts to 1.04 times less chemical light action on the heated plate than that at normal temperature, for the fainter stars; while on the other hand, for  $D_{24} = 0.95$ , the action is increased 1.9 times. Between 24 deg. and 100 deg. the mean difference is  $2^{3.5}$ , or 11 times general reduction in speed.

The original scale-plate and the negatives therefrom possess nine separate shades or tone-values, and defining them from the weakest to the most opaque as  $D_1, D_2, \dots, D_9$ , we may carry the method of recording results a step farther and re-plot each in terms of  $D_n$  and temperature, and thus afford a ready connection to everyday routine work. Such a series of curves is shown in Fig. 6.

In the preparation of this figure, all of the curves for "normal" (+ 24 deg. C.) to + 100 deg. C. were first plotted and then all of the values of  $D$  for temperatures lower than + 24 deg. were reduced to a mean  $D$  for each point, and shifted vertically to connect. As has already been stated, the magnitude value of the change in  $D_n$  with temperature cannot be referred to an absolute scale, because in quantitative photographic astronomical work, the value of the intensity recorded is dependent upon (a) the atmospheric absorption, tremor, etc., and the length of exposure. Care with reference to the development constants eliminates these (relatively), so that to consider

(<sup>5</sup>) Accompanied by reversal in the lower values of  $D$ .



image in terms of  $D$  it simply remains to read off the corrections necessary for temperature.

badly considered, it may be stated that for images at about minimum of photographic action, the sensitive plate is faster out 0.35 magnitude in a temperature range from  $-18$  deg. to  $+32$  deg. C. ( $0$  deg. to  $+90$  deg. F.) and for high values of  $D$  (corresponding to the brighter stars) about magnitude slower, while for stars of medium density (corresponding to the value of about  $D = 1.2$ ) there is no apparent effect.

On the examination of the measurements and curves of entire series of plates, the writer is forced to the conclusion there is a limited range of temperature at which this added error for light of low intensity is apparent, and that at other temperatures, either above or below this region, the sensitive-plate curve falls rapidly and smoothly. In other words, photographic sensitiveness plotted against temperature may be represented by a curve similar to the probability curve. This idea comes out when we consider the curves already shown, where.

in the higher temperatures, there is a certain point above which the plate curves fall off from the normal and are moved bodily along the log  $E$  axis; precisely the same effect is indicated in the case of temperature reduction curves representing successively lower temperatures. This is to be expected when consideration is given to the classic experiments of Dewar, who showed that there was a very great decrease in sensitiveness at temperatures about  $-200$  deg. C. The influence of temperature upon general velocity reactions would also point to a similar conclusion.

The points dealt with in this work require extension with special apparatus, by (preferably) other investigators, at temperatures intermediate to  $-10$  deg. C. and  $-200$  deg. C., as it would be desirable to acquire data relative to the formation of the rising branch of the curve. It should also be pointed out that it by no means follows that the region of maximum is identical on plates of different chemical constitutions, or that difference in wave-length may not modify the conclusions arrived at.

ROBERT JAMES WALLACE.

## ANIMAL PHOTOGRAPHY FOR THE PRESS.

"Down-Town Topics," a monthly sheet issued by the Oberg Camera Co., of New York, the Editor of an American magazine, contributes the following notes on the branch of photography particularly associated with his own work. As a points out, a knowledge of breed characteristics is as important to the animal photographer as the skill required to present them in the photograph.]

Patience is required to get a good livestock picture than to photograph any other subject. Well-bred animals are "high-strung"; their nervous development is such that when they are even mild excitement it seems impossible for them to stand still. When led out before the camera they quickly realise something unusual is going on, and they are prone to assume all the awkward attitudes possible. A few show animals have been trained to stand in positions studied to show them to the best possible advantage, but such animals are scarce. Only a domestic animal that is valuable enough to be worth photographing is excitable and often almost ungovernable at times.

I prefer a 4 by 5 film camera, and I have done some of my work with a rapid rectilinear lens. A tripod and ground glass are absolutely worse than useless. You must know your animal, and you must know your distance.

The best light is during June, July, and August, either before or after three in the morning or after three in the afternoon. It is difficult to get a good animal picture in winter.

Overhead sun is not a good light, because the lower parts of the animal are partly obscured in shade. A photograph consists of light and shade, a careful study of which is necessary to show the contour of muscle and development of bone sought by the breeder.

A study of breed and breed characteristics is essential to real success in this line, but the operator may gather a few important points by talking with the breeder a few minutes before posing the animal. The conformation of a race horse is essentially different from that of a drafter; dairy cows are very unlike beef cows in shape. The value of an animal may vary to the extent of hundreds of dollars by the addition of a few pounds of flesh just where it is wanted.

The best position that is better than all others is to face the animal almost directly toward the sun, with just enough deviation to show lights and shadows along the side of the animal and toward the camera. Then stand with the camera opposite the head of the animal so the rays of sunlight will pass the lens at right angles. It is safer to shade the lens, which may be done by holding your hat in the direction of the sun, or by standing between the camera and the sun. When an animal

is placed in this position the sun glances along its side, illuminating the face, neck, front of the legs, shoulders, hips, and swelling muscles wherever the sun strikes them. The point of a livestock photograph lies in the head and face; for this reason the face should be turned slightly toward the operator, not too much, but just enough so the forehead, one eye, and both ears show; unless for some specific reason a profile of the head, neck, and one ear is required. The face and head of an animal show character and disposition, which often indicates, in young animals, both the temperament and development that may be expected.

Remember that these directions are given for half-tone work. An artist who merely wants a pretty picture may criticise this manner of intensifying the lights and deep shadows because he feels that it suggests improper colours, but the proper colours are conveyed to breeders by the breed characteristics and by the markings of individual animals. Then the engraver wants all the contrast he can get, and if you want a good half-tone you must furnish the sharpest negative possible. The best photographs lose in the process. You may count the hairs in a photograph, but you will hardly see them in the cut. The foolish fad that influences judges to award premiums to poor, hazy photographs meets with little courtesy from publishers.

It may require half an hour to get an animal in proper position with its legs gracefully posed and the weight equally distributed on each foot, but when the time comes you must be ready with the proper distance, the camera about three and one-half feet high at right angles to the length of the animal, ready to snap it instantly. With a rapid rectilinear lens I use an *eight*\* opening with the shutter set to the fiftieth or one-hundredth part of a second. I seldom pose the animal more than once, and I seldom fail to get a photograph that will make a satisfactory half-tone. You can take pictures of animals in all kinds of positions and with a very inferior light, but the final results are usually very unsatisfactory to the breeder and to the publisher.

Some photographers take advantage of the idiosyncrasies of

\* This may mean either  $f/8$  or the U.S. 8 No., which is  $f/11$ , but in any case the exposure seems to be unduly short, for at any rate the latitude of the United Kingdom.—Eds., "E.J."

their cameras to exaggerate certain parts of an animal. It is generally recognised, for instance, that a good dairy type of cow is, as the breeders say, "wedge-shaped," with hind parts very heavy in proportion to shoulders, neck, and head. Some photographers, to emphasise this peculiarity, photograph a cow from a backward position, the result of which, if used for selling purposes, is not only an attempt at dishonesty, but one so apparent that it defeats the object of the operator.

I have taken my best livestock pictures on hilltops with nothing in range beyond but a grey sky. Of course, a white animal may be taken with a dark background, but you seldom find a white domestic animal worth a picture. Ninety-nine out of a hundred are at least partly coloured. You may paint out the objectionable background, but it is much more satisfactory to leave it out. The picture of the animal itself cannot be retouched without spoiling it. Engravers prefer P.O.P. prints, not too glossy.

HERBERT SHEARER.

## Photo-Mechanical Notes.

### Half-Tone Screens.

The use of ruled screens formed by waved or undulating lines is put forward as an advantageous process by Andrew Dargavel, of 14, Anson Road, Cricklewood, London, N.W., by whom the method is described in Patent Specification No. 17,069, 1907. The half-tone plates are prepared by means of a screen, which may consist of glass or other suitable material, such as gelatine or celluloid, but preferably plate-glass, and is provided with lines of a similar curved or undulating character. These lines may be produced on the glass by any of the known methods, such as by photography or by means of a steel or diamond cutter, by hand, or by machinery, and arranged in parallel series, or the series of lines on the screen may be arranged so as to intersect or cross each other. The lines may be ruled either in a single series of parallel waved lines, or by a double series of waved lines, the lines of the second ruling being ruled in such a way that they cross or intersect the lines of the first ruling. The lines of the second ruling may cross the lines of the first ruling at right angles or at any other angle which may be found necessary or convenient. The lines of the first ruling may be waved, and the lines of the second ruling—that is to say, the ruling which crosses or intersects the first ruling—may be waved or straight, as desired. The lines of the rulings may be of equal thickness or of varying thicknesses, and the lines may be separated by equal or unequal spacings; the spaces may be equal to the thickness of the lines, or be varied in any desired manner. Moreover, the waves of the lines themselves may be evenly disposed, of slight or pronounced character or of varying lengths and widths, according to the effect required in the finished picture.

By using a screen of this improved type, the lines, which enable the half-tone effect to be obtained, conform more readily to the lines and curves of the subject or picture, and therefore ensures a better rendering than is obtainable with screens having straight parallel lines as ordinarily employed. At the same time, the mechanical appearance of the screen in the reproduction—a common defect in "half-tones" produced by the straight line screen—is to a large extent obviated.

### PHOTO-MECHANICAL PATENTS.

The following patent has been applied for:—

**HALF-TONE NEGATIVES.**—No. 17,215. Method of making half-tone negatives for relief blocks. Niels Bendixen, 321, High Holborn, London, W.C.

"PATENTS AND DESIGNS."—The first issue of this periodical dealing with patent matters as governed by the new Patents and Designs Act, 1907, has been issued from 5, Tavistock Street, London, W.C. The journal deals with notable new inventions and with patent cases in the courts.

### FORTHCOMING EXHIBITIONS.

September 11 to October 24.—Photographic Salon. Entries close August 31. Sec., Reginald Craigie, 5A, Pall Mall East, London S.W.

September 17 to October 24.—Royal Photographic Society. Entries close September 1. Sec., J. McIntosh, 66, Russell Square, London, W.C.

October 13 to 17.—Southampton Camera Club. Entries close October 6. Exhibits by October 8. Hon. Sec., S. G. Kimber, Oadene, Highfield, Southampton.

October 14 to 17.—Rotherham Photographic Society. Entries close October 5. Sec., H. C. Hemmingway, Tooker Road, Rotherham.

December, 1908, to January, 1909.—Kiew International Photographic Sec., S. T. Horovitz, Technical Society, Kreshtchatik, 10, Kiev Russia.

1909.

January 6 to 27.—Northern Photographic (Manchester). Entries close December 11, 1908. Sec., S. L. Coulthurst, Broad Oak Road, Worsley, Manchester.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications have been received between August 1 and August 15:—

**LANTERNS.**—No. 17,027. Improvements in optical lanterns. William Laurence Parkinson, 15, Water Street, Liverpool.

**COLOUR PHOTOGRAPHY.**—No. 17,065. Method of producing multi-colour filter screens for the production of photographs in natural colours. Jan Szczepanik, 55, Chancery Lane, London.

**CINEMATOGRAPH.**—No. 17,110. Improvements in apparatus for producing animated pictures. William Barmingham, 55, Mark Lane, Street, Manchester.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

**ORTHOCHROMATIC PLATES.**—No. 17,453. 1907. The invention relates to the use of tartrazine in the plate in such a way as to form a yellow screen for the colour-sensitive emulsion, that is to say, plates are prepared for ordinary photography by embodying tartrazine in the film, which enables the plate to act as its own screen. There are two known processes for dyeing plates. One consists in simply dipping a sensitised plate in a dye solution, the other in embodying the dye in the sensitising emulsion before the emulsion is applied to the plate. The former process of dyeing is somewhat unsatisfactory, for not only is it expensive, but there is not uniformity in its results, since the amount of dye taken up by the plate varies with the condition, as well as with the external conditions prevailing during the operation.

For the purpose of the present invention, therefore, a quantity of tartrazine is added to and mixed with the emulsion, and the mixture so produced is applied to the plate or film, and allowed to dry thereon. The plate or film thereby forms a screen for itself and when dry is ready for use.

It is found that by adding 5 c.c. of a solution of tartrazine (containing about 1 gramme of the colouring substance in 40 c.c. of water), to 200 c.c. of emulsion, a mixture is obtained which is every way suitable for the purpose of this invention.

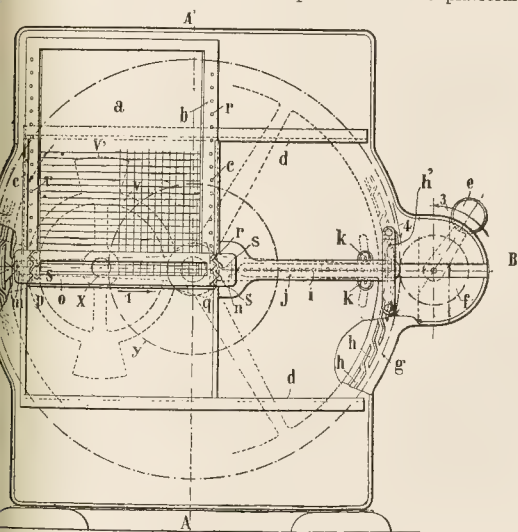
The composition of tartrazine and its chemical series are given in any good work of reference on dyes or colouring matters; in "Dictionary of Dyes, Mordants and other Compounds used in Dyeing and Calico Printing," by Rawson, Gardner and Laycock (published by Charles Griffin and Co., Ltd., of London) tartrazine is given as the sodium salt of diphenyl p. sulphonic acid oxazodiox tartaric acid. Thomas MacWalter, Colnbrook, Granville Road, High Barnet, Herts.



SS-PLATE CINEMATOGRAPH.—No. 3,987, 1908. The invention relates to the production and exposure of collodion or albumen sensitive plates of fine grain sufficiently sensitive to be used for small pictures in a plate cinematographic projector. The series of pictures to be reproduced on these plates are taken in the ordinary way on film, and the negative film having been developed, is passed through the projection instrument. This instrument is provided with a projection lens arranged in line with the axis of the reducing lens of the camera for the movable plate. The reducing lens throws upon the plate an inverted negative image reduced to the desired size. The two pieces of apparatus being connected synchronously and the objective of the camera alone comprising a shutter or stop, each time the film is fed forward and exposed movable plate will be fed forward and exposed. The operating handle for the two appliances enables the speed of the displacement and therefore the time of exposure to be controlled. Each view of the band of film will be received upon a small surface on the movable plate; when the entire surface has been exposed, all successive images on the band of film will have been reproduced as adjacent microscopic photographs.

It may be preferable to obtain a plate with negative views by means of the band of film, this plate then serving for the reproduction by direct exposure of as many positive plates as desired. In this case, instead of running a band of negative film through the projection apparatus, it is sufficient to pass a band of positive film through it.

One of the two instruments is adapted to be slid by means of a rack meshing with a rack in slides provided on the platform,



the object of the relative regulation of the horizontal distance between the two instruments; absolute regulation is obtained by causing the lenses to advance or recede.

The two instruments are operated simultaneously by means of a driving or extension rod in order that it may be able to follow variations in the interval separating the two instruments when it is being adjusted. The extremities of this rod are respectively solid with the shafts of the operating gears for the camera and the projection instrument.

The photographic camera for the movable plate may be of any type. Nevertheless, as the images to be produced are microscopic, it will be understood that the precision of the mechanism must be absolute. With this object the inventors have devised the following apparatus:—

The plate *a* is fixed in a frame *b* capable of vertical displacement in slides *c*, which form part of an accessory which is itself capable of displacement on the fixed horizontal slides *d*.

These displacements are regulated in such a manner that the successive views of the lower horizontal row of the plate first of all pass in succession in front of the lens, the plate moving in the

direction indicated by the arrow 1; at the extremity of this row the plate is depressed by the height of a view; the plate is then again displaced horizontally, but in the opposite direction to the arrow 1, and all the views in the second horizontal row pass in succession in front of the lens; at the extremity of this row the plate is again depressed and the third row of views is level with the lens. In this manner the plate is subjected to a reciprocating horizontal movement regularly interrupted at the end of each travel by a depression corresponding to the height of a view. The movement is produced by a handle, *e*, driving a toothed pinion *f*, which meshes with a gear wheel *g*.

The gear wheel *g* carries on one of its faces in proximity to its periphery, a series of reliefs, the uniform arrangement of which serves to produce sinuous paths, *h*, in which pins *i* engage; these pins correspond in number to the views in a horizontal row on the plate, and they are provided on a horizontal bar *j* solid with vertical slides *c*. The direction of the sinuous paths *h* is inverted in each half of the wheel *g*, in such a manner that a complete rotation of this wheel produces a displacement of the bar *j* and consequently of the plate *a*, first in the direction indicated by the arrow 1 and then in the opposite direction. The bar *j* is guided in its displacements by the rollers *k*. In addition to the reliefs indicated, the wheel *g* is provided (at one only of the places at which the direction of the paths *h* changes) with a boss *l* acting at each semi-revolution of the wheel, alternately upon each of the rollers *m* and *n* solid with the whole constituted by the vertical slide ways *c*, the bar *j* and a device located in front of the plate holding frame *b*, which serves to support the latter.

This arrangement comprises a plate *o* solid with the part of the system which is movable in the horizontal direction; this plate is slotted at *p* and *q* in such a manner as to form graduated slots in which a certain number of pins *r*, fixed on the uprights or vertical parts of the frame *b*, are able to engage. Stops *s* are formed in the slots *p*, *q*, and the pins *r* enter these stops after each vertical displacement of the plate. The vertical interval between two consecutive stops *s* is equal to the height of a view, reckoned from the centre of the lower view to the centre of the view above it.

Taking the apparatus at the beginning of the projection as represented in fig. 1, if the handle *e* be turned in the direction indicated by the arrow 3, the gear wheel *g* is driven in the direction indicated by the arrow 4. The first pin *i* of the bar *j* traverses the sinuous path *h* in which it is engaged; in doing so it reaches *h*<sup>1</sup> where the path forms an incline; the wheel *g* continuing to rotate, as will be understood, a tractive effort is produced upon the bar *j*, and the part of the system which is horizontally displaceable moves in such a manner that the second view of the first horizontal row moves in front of the lens. At the same time the second pin *i* of the bar *j* has entered the following sinuous path; a displacement similar to the preceding one is produced. All the pins *i* come in succession in a path *h*; when the last pin is thus engaged the plate has reached the limit of its travel in the direction indicated by the arrow 1 and the wheel *g* has made a semi-revolution.

At this moment the boss *l* encounters the roller *n* which has been displaced simultaneously with the plate. The effect of this encounter is the displacement of the plate *o* relatively to the frame *c* and consequently to the plate-holding frame supported by the frame. The pins *r* leave the stops *s* and, sliding in the inclined paths of the groove *p*, fall into the lower stops. The plate has been depressed to the extent of a row of views.

As the wheel *g* continues to rotate, it presents to the pins *i* sinuous paths *h* of inverse direction; the bar *j* moves intermittently in the opposite direction to that indicated by the arrow 1, and as regards the second horizontal row the views present themselves in front of the objective in the same order.

When the wheel *g* has effected a complete revolution, the boss *l* encounters the roller *m* and the plate is again depressed. The operation is the same until all the views have passed in front of the objective in the order set forth.

The shaft *t*, which carries the gear wheel *g*, is hollow. When the apparatus is used for photographing the images of a band of film on a reduced size, the tubular shaft *t* is closed in front by a screw plug *z*. The luminous rays then pass through the objective *u* and fall on the plate where their area is limited by the window *v*<sup>1</sup> formed at the extremity of the cone *v*<sup>11</sup>.

When the apparatus serves for projection, the plug *z* is unscrewed and the rays of an appropriate source of light pass through the tubular shaft, the plate, the window and the projection objective in the opposite direction.

The shutter *v* with four screens *v*<sup>1</sup> is actuated by the toothed pinion *x*, which meshes with another pinion *y*, keyed upon the shaft *t* of the gear wheel *g*. Jean Leon Muller, 8, Avenue Berthet Sannois, and Jules Rousset, 27, Cours Marigny, Vincennes, France.

## New Trade Dames.

**PHASTOLITE.**—No. 304,226. Chemical substances used in manufactures, photography, or philosophical research, and anti-corrosives. Sissons Bros. and Co., Bankside, Sculcoates, Hull (varnish and paint manufacturers).

**RELWOD.**—No. 304,323. Chemical substances used in manufactures, photography, or philosophical research, and anti-corrosives. J. Irving Rogers and Co., merchants, Windsor Buildings, George Street, Liverpool.

**CINEMA PATHE** (with drawing of two cocks).—Nos. 298,894 and 298,895. All goods in class 8, but not including electrical cables, photographic cameras, and other photographic apparatus. Compagnie Générale de Phonographes, Cinématographes et Appareils de Précision, 98, Rue de Richelieu, Paris.

**MADDOTYPE.**—No. 304,183. Photographic prints. Charles Worcester and Co., 5, Kingsdown Parade, Kingsdown, Bristol.

## New Books.

"Colour Photography," Special Summer Number of "The Studio." London: "The Studio" Office. 5s. net.

"The Studio" has always done its best to afford photography a status among the fine arts, and this portly volume is the latest effort of that important journal to further the claims of the camera amongst artists and other people of taste. The full title is "Colour Photography and Other Recent Developments of the Art of the Camera," but as there are five times as many monochrome illustrations as there are coloured ones, we can very well deal with the book here in a short review and speak at greater length upon the coloured work and the article by Dixon Scott in our own "Colour Supplement," which is due September 4. Pictorial work in monochrome is not alluded to in the letterpress; we need, therefore, only refer to the illustrations. They are gathered from all sources, and include work as early as that of David Octavius Hill, and as recent as that of Malcolm Arbuthnot. On the whole, we consider the monochrome section by far the most satisfactory; the coloured work is not delightful in any instance. That fact is due, perhaps, to another, which is that the original source of most is the Autochrome plate, satisfactory reproduction of which appears as yet to be difficult.

A leisured examination of this book induces the feeling that names and reputations count for too much in pictorial work. The cases are really few in which one honestly admires a picture first and then discovers it to be by some one with a reputation afterwards. The case of Robert Demachy stands almost alone in this respect. His "Honfleur" is true landscape art in its modern aspect, and his "Seine at Clichy" is fine decorative landscape. But there are many names quite new to us which sign pictures of great merit and charm. We are confirmed in our previous opinion that Paul Pichier leads in the matter of fine romantic feeling, arresting and faultless design, and strength of motive, in outdoor pictures. His "Steps at the Villa d'Este" has great pictorial quality. Praise should also be given to "Lowestoft Harbour," by Reginald Craigie; "Portrait," by R. Dührkoop, a handsome girl at half length, designed and set upon the paper in the way of an old master; an exquisite profile, "Study of a Head," by C. J. von Dühren; another "Study of a Head" of quite opposite beauty, by S. Fischer-Schneevoigt; "St. Viglio," by T. and O. Hofmeister, a romantic Italian villa; "The Letter," two early Victorian ladies by Mrs. Käsebie; "The Pianist," by Guido Rey; "Mother and Child," by Eva Watson Schütze; and "Notre Dame," by W. O. Underwood. There are, of course, many others of established fame by workers well known to our readers which it is unnecessary that we should refer to here.

## Analecta.

Extracts from our English weekly and monthly contemporaries.

### The Combined Bath.

A formula that I have employed for several years with very satisfactory results (writes Mr. H. W. Bennett, in "The Amateur Photographer and Photographic News," of August 25) is the following:

Hypo .....	2 oz.
*Ammonium sulphocyanide .....	20 gr.
*Lead acetate .....	10 gr.
*Gold chloride .....	1 gr.
Ammonia .880 .....	10 mm.
Water to make .....	10 oz.

The hypo should be mixed with sufficient water to make 10 oz., and the other ingredients added in the order given, the solution being stirred or shaken between each addition.

This formula gives warm tones. For warm purple one-fourth of each ingredient marked \* should be used. For deep purple quantities should be 30 gr., 15 gr., and 1½ gr. respectively, the quantity of water and the amounts of the other ingredients remaining unchanged. Ten ounces of solution will be sufficient for eight whole plates, fifteen half-plates, or thirty-two quarter-plate prints. A smaller number proportionate quantities should be taken.

The prints are immersed in the solution without any preliminary washing. They should remain in the solution for twelve minutes at the least, the amount of gold being regulated so that the desired tone is not produced in less than that time. This is the reason for varying the quantities of some of the constituents.

The most simple and satisfactory method of preparing this is by keeping a series of stock solutions.

No. 1.—Hypo .....	16 oz.
Water sufficient to make .....	32 oz.
No. 2.—Ammonium sulphocyanide .....	2 oz.
Water to make .....	11½ oz.
No. 3.—Lead acetate .....	1 oz.
Hot water to make .....	11½ oz.
No. 4.—Gold chloride .....	15 gr.
Water to make .....	3½ oz.
No. 5.—Ammonia .880 .....	1 oz.
Water to make .....	12 oz.

For preparing the bath from these stock solutions, for warm tones take:—

No. 1 .....	4 oz.
Add water .....	5 oz.
Nos. 2, 3, 4, and 5 .....	each 120 mm.

### Hypo-Alum Toning of P.O.P.

My method of procedure (writes a reader of "Photography Focus" of August 25) is as follows:—First, I print slightly denser than the finished print is required to be. Then I place it straight in hypo without any previous washing. Three ounces of hypo to a pint of water, for ten minutes—no longer. Then I transfer it, without washing, to the following hypo-alum bath:—

Hypo .....	3 oz.
Alum .....	1 dr.
Water to .....	20 oz.

It is left in this until the tone that is desired is acquired, finally, is washed for an hour, preferably by suspension.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

SATURDAY, AUGUST 29.

Aberdeen Photo Art Club. Outing to Kennay.  
Southend-on-Sea Photographic Society. Outing to Childeritch.

SUNDAY, AUGUST 30.

United Stereoscopic Society. Outing to Epping Forest.

TUESDAY, SEPTEMBER 1.

United Stereoscopic Society. "Some Stereoscopic Curiosities." F. Low.

WEDNESDAY, SEPTEMBER

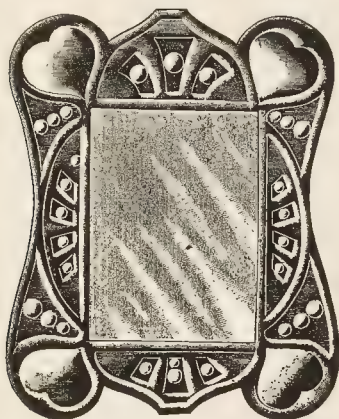
North Middlesex Photographic Society. Lantern Slide Competitions.



## New Apparatus, &c.

"Bronzine" Photograph Frame. Sold by John J. Griffin and Sons, Ltd., Kingsway, London, W.C.

novelty in the shape of a metal photograph frame at a very moderate price has been introduced by Messrs. Griffin under the above name. The frame has the effect of a hammered partly polished metal, and may be used for almost any description of



photograph. The price for a cabinet frame of outside size  $9\frac{1}{2}$  in. by 7 $\frac{1}{2}$  in. is 1s., whilst an 8 $\frac{1}{2}$  in. by 6 $\frac{1}{2}$  in. frame with opening for standard size sells at 9d. In addition the same design is obtainable for two midget photographs, 1 $\frac{1}{8}$  in. by 1 in., at 3s. per dozen. Each case the above price is for the frames complete with glass. A line of frames which should repay the attention of both dealers and photographers.

## New Materials, &c.

ALBUMS.—Messrs. Griffin, of Kingsway, London, W.C., send a specimen of an album for quarter-plate prints just issued by them at the very moderate price of 1s. The album measures outside  $9\frac{1}{2}$  in. by 6 $\frac{1}{2}$  in., and contains space on each page for two quarter-plate prints, the pages being made up in a selection of art



designs, all of almost neutral colour. A pleasing variation is made in the shape of the openings, and the album accommodates altogether 32 prints. For keeping together prints of a particular series one of these most inexpensive albums should be very convenient.

THE LATE MR. BENJAMIN WYLES.—The death took place, at King's Norton, Birmingham, last week, of Mr. Benjamin Wyles. The deceased was well known in the town, where for many years he carried on a photographic business.

## CATALOGUES AND TRADE NOTICES.

CAMERA BELLOWS.—The catalogue of H. G. Glanville, 256, Balsall Heath Road, Birmingham, is sent to us and is found to list the variety of bellows, lens and camera cases, and other cloth and leather photographic goods manufactured by this firm. The list is sent free to the trade.

ALTRINCHAM SPECIALITIES.—A new list has been issued by the Altrincham Rubber Co. describing their latest photographic specialties in the way of camera cases, backgrounds, squeegee pads, etc.

ROSS LENSES AND CAMERAS.—A new 1908 list, just issued by Messrs. Ross, Ltd., 111, New Bond Street, W. consists of a handsome volume, which fully specifies the apparatus made by this ancient firm or sold under its recommendation. The "Homocentric" and other notable "Ross" lenses figure in its pages, but Messrs. Ross also make the Zeiss lenses. The best of hand and stand cameras are described, and one of the most useful purposes which such a list serves is the selection which it makes of apparatus which may be unhesitatingly commended to the purchaser requiring a good article. In one or two items the list "intelligently anticipates"; for example, it describes the forthcoming Thornton-Pickard universal front reflex camera. Altogether a most valuable guide to reputable photographic apparatus, and worth the shilling which is charged for it. An abridged list describing rather more popularly priced apparatus is sent free.

## Commercial & Legal Intelligence.

A SCARBOROUGH BANKRUPTCY.—At the offices of the Official Receiver, Scarborough, on August 20, the first meeting of creditors was held in the case of Joseph Edmund Bramwell, a photographer, residing at 38, Beechville Avenue, and lately carrying on business at 124, Westborough, Scarborough. Debtor's statement of affairs showed gross liabilities amounting to £289 6s. 10d., all of which is expected to rank for dividend. The assets amount to £15 5s. 11d., leaving a deficiency of £274 0s. 11d. Debtor attributes his failure to bad trade, owing to severe competition and bad seasons, pointing out that eight photographic establishments have opened at Scarborough since he commenced business.

LEGAL NOTICES.—A receiving order was made in Warwick Bankruptcy Court last week against Joseph Harris, residing at 10, Chapel Street, and carrying on business at 15, High Street, Warwick, photographer.

DISSOLUTIONS OF PARTNERSHIP.—The partnership between Messrs. Geo. Hy. Hutton-Preston and Percie L. D. Moulton, carrying on business as photographers and miniature painters at High Street, Broadstairs, Kent, under the style of Hutton-Preston and Co., has been dissolved, by mutual consent, as from August 11.

The partnership between Messrs. Geo. Liley and Hy. Arthur Penfold, carrying on business as photo-apparatus and material dealers, etc., late at 522, Stratford Road, Sparkhill, Birmingham, and now at 73, Wordsworth Road, Small Heath, Birmingham, under the style of Liley and Penfold, has also been dissolved, by mutual consent, as from July 11.

## NEW COMPANIES.

A. S. PRICE AND CO., LTD.—Capital, £2,000, in £1 shares (1,000 Pref.). Objects: To acquire the business carried on at Blackheath, Staffs, as A. S. Price and Co.; to adopt an agreement with J. H. Price, and to carry on the business of chemists, druggists, dyers, oil and colourmen. Dealers in photographic and scientific apparatus, etc. Private company. The first directors (to number not less than three nor more than five) are: J. H. Price, A. S. Price, and J. H. Price, jun. (all permanent; special qualification, 100 ordinary shares). Qualification of ordinary directors, 50 ordinary shares. Registered office, 181, High Street, Blackheath, Staffs.

KOSMOS PHOTOGRAPHICS, LTD.—Registered August 18, by Christopher and Roney, 33, Cornhill, E.C. Capital, £5,000, in 4,500 Preferred Ordinary shares of £1 each and 10,000 Deferred Ordinary shares of 1s. each. Objects: To carry on the business of photographers, photographic printers, chemists, manufacturers of photographic requisites, etc. Private company. Table "A" mainly applies.

## News and Notes.

**DAY TOURS IN BEAUTIFUL ENGLAND.**—The newly instituted day circular tours of the Great Western Railway Company represent a piece of railway enterprise which photographers of all people should be quick to appreciate. The preliminary run round a district is always an advisable thing before taking a holiday, and when the holiday-maker can be taken from London to Herefordshire and back and given ample time to visit Hereford, Gloucester and Worcester in the day, all for the sum of 7s., the expense of this first look round becomes insignificant. Last week we mentioned two similar series of day circular tours to Warwickshire and the Wye Valley respectively. The present offer is even more attractive, and application for the full prospectus obtainable from the Enquiry Office, Paddington Station, may be recommended. Some particulars of the ways in which the day may be spent will be found in our advertising columns.

**BURGLARY AT "N. AND G.'S."**—A serious burglary took place at the premises of Messrs. Newman and Guardia, Ltd., 90 and 92, Shaftesbury Avenue, W., between Saturday night and Monday morning. The burglars appear to have entered the premises through a flight facing Macclesfield Street, being one side of the premises turning out of Shaftesbury Avenue. The haul consisted of the smaller description of cameras manufactured by Newman and Guardia, and the chief interest seems to have been in securing a large number of the new "Sibyl" pocket cameras, which have only recently been put on the market. No doubt cracksmen of the first order had something to do with this, as a very excellent jemmy was discovered, also one glove, evidently used to prevent detection by finger marks. A rather interesting feature of the case was the use of a duster on the top of steps which were used to leave the premises. This, no doubt, was to prevent the possibility of foot marks being traced. The following is a rough list of the goods taken:—

One 4-pl. S.R. Reflex camera, No. 2,051, fitted with Zeiss "Double Protar" lens, No. 101,704-101-701, with 1 dark slide, changing box, No. 4,423, pneumatic release attachment, and leather case.

One 4-pl. S.R. Reflex camera, No. 1,949, fitted with Zeiss "Double Protar" lens, No. 83,225-83,232, with 1 dark slide, holder for auto-chrome screen, and leather case.

One 4-pl. "Nydia" camera, No. 887, with changing box, No. 1,106, fitted with Ross "Homocentric" lens, No. 63,543, with lens cap, and level on box, and leather case.

One front only of a 4-pl. special B camera, No. 1,310, fitted with Zeiss "Double Protar" 3-foci lens, No. 44,714-44,428.

One 4-pl. "Sibyl" camera, No. 278, fitted with Zeiss "Tessar" lens, No. 103,383; one 4-pl. "Sibyl" camera, No. 282, fitted with Zeiss "Tessar" lens, No. 103,387; one 4-pl. "Sibyl" camera, No. 283, fitted with Zeiss "Tessar" lens, No. 103,388; one 4-pl. "Sibyl" camera, No. 284, fitted with Zeiss "Tessar" lens, No. 103,369, with one dark slide, velveted inside back, and focussing screen, with collapsible hood; focussing screen of this camera is specially marked down to 1½ yards.

One 3½in. x 2½in. "Sibyl" camera, No. 213, fitted with Cooke lens, No. 18,688; one 3½in. x 2½in. "Sibyl" camera, No. 273, fitted with Cooke lens, No. 19,496; one 3½in. x 2½in. "Sibyl" camera, No. 274, fitted with "Cooke" lens, No. 19,497; one 3½in. x 2½in. "Sibyl" camera, No. 275, fitted with "Cooke" lens, No. 19,498; one 3½in. x 2½in. "Sibyl" camera, No. 276, fitted with "Cooke" lens, No. 19,499; one 3½in. x 2½in. "Sibyl" camera, No. 277, fitted with "Cooke" lens, No. 19,500.

One 3½in. by 2½in. "Sibyl" camera, No. 209, fitted with Zeiss "Tessar" lens, No. 91,711; one 3½in. x 2½in. "Sibyl" camera, No. 253, fitted with Zeiss "Tessar" lens, No. 104,250.

One Zeiss, Series II. B "Tessar" No. 8 lens, 12in. focus, f/6.3, No. 85,943.

One 5 x 4 Wizard camera, triple extension, fitted with 3-foci rectilinear lens and automatic shutter, with 6 double dark slides and leather case.

One "Suter" rectilinear lens, 10in. focus, f/5.6, No. 11,685; one "Suter" rectilinear lens, 6in. focus, f/5.6, No. 9,855.

One large leather case for six 15 x 12 double dark slides.

Three panel fronts for 15 x 12 "Hare" camera.

One large leather case for 12 x 10 "Dallmeyer" camera.

One tripod top.

### CHANGING BOXES.

Four 4-pl. "N. and G." changing boxes, pattern A, Nos. 4,382, 4,383, 4,385, 4,405.

Three 4-pl. "N. and G." changing boxes, pattern B, Nos. 3,931, 3,933.

Two 5 x 4 "N. and G." changing boxes, pattern A, Nos. 4,413.

One 5 x 4 "N. and G." changing box, pattern B, No. 4,183.

Six 4-pl. "N. and G." Reflex changing boxes, Nos. 4,436, 4,494, 4,495, 4,496, 4,497.

Two 5 x 4 "N. and G." Reflex changing boxes, Nos. 4,429,

24 4-pl. "N. and G." "Nydia" changing boxes, Nos. 1,270, 1,272, 1,286, 1,290, 1,294, 1,295, 1,296, 1,297, 1,298, 1,299, 1,301, 1,302, 1,303, 1,326, 1,327, 1,372, 1,387, 1,388, 1,389, 1,391, 1,392.

15 4-pl. "N. and G." "Nydia" changing boxes, with Ru leather bellows, Nos. 1,070, 1,071, 1,187, 1,375, 1,376, 1,377, 1,379, 1,380, 1,381, 1,382, 1,383, 1,384, 1,385, 1,386.

9 9 x 12 c/m "N. and G." "Nydia" changing boxes, Nos. (with level), 994, 995, 996, 997, 998, 1,042, 1,043, 1,044.

2 5 x 4 "N. and G." "Nydia" changing boxes, Nos. 1,274, 1,275.

3 3½in. x 2½in. "Sibyl" changing boxes, Nos. 4,453, 4,458, 4,459.

The most regrettable part of this burglary is that the thieves should have selected "Sibyl" cameras, the stock having only just been completed, and the demand for this particular "N. and G." model being in excess of production. Great disorder prevailed in the private office on the first floor when the clerks entered Monday morning, but strangely enough no damage was done to any of the delicate apparatus thrown about on the floor.

## Correspondence.

### STEREOSCOPIC PORTRAITS.

To the Editors.

Gentlemen,—In regard to the abstract of our recent patent we may be allowed to point out that the process is intended to be used in the production of a stereoscope and slides of the sitters' portraits for a nominal sum, in other words the popularising the once familiar form of stereoscopy. We enclose our "Mirror," which "serves a double debt to pay"—a stereoscope unfolded, and a pocket case for the slides when closed. The rapidity and accuracy and reliability of the process enables us to produce stereoscopic portraits of our sitters, ready the following day, and we believe we are the only firm producing stereoscopic portraits on a commercial basis (that is to our knowledge, and in the ordinary manner of the studio as cabinets are produced).

From the commercial point of view and also that of an educational one, our process is unequalled for precision and attractiveness, as a means of advertising and bringing details to the public mind—things that might otherwise pass unnoticed when depicted in the ordinary photograph.—Yours faithfully,

9, Mary Street, Dublin.

THE DYAS PHOTOGRAPHIC CO.

### THE R.P.S. FELLOWSHIP FOR HON. SECS.

To the Editors.

Gentlemen,—I notice you have a paragraph this week, under the heading "Ex Cathedra," referring to the granting of Fellowship by the R.P.S. to the hon. sec. of long standing and energy. I do not know if you would care for the question to be discussed in your correspondence columns. If so, perhaps you will kindly publish the letter. I may say that I quite agree with the suggestion which has been made. One of the qualifications for the Fellowship is that the candidate shall have made some considerable contribution to the dissemination of photography. I maintain, Sirs, that a really capable secretary fulfils this condition. I even think he is more deserving of the honour than the man who gets it for his skill in the practice of photography. This is heresy, perhaps, but I believe it to be correct. Why? Because a photographic society is established for the advancement of photography, and the man who keeps it up to this ideal for ten years, with, oftentimes, very small thanks, is, in my mind, deserving of this official recognition. The fact that he may not be a member of the R.P.S. is surely easily disposed of by his becoming one. I think this suggestion to be worthy of serious consideration, and trust that the end desired will some day be reached.—Faithfully yours,

LEWIS LLOYD,

Church Road, Moseley.

Hon. Sec. M.P.F.

August 22, 1908.



## Answers to Correspondents.

**Letters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C."** Inattention to this ensures delay.

**Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.**

**Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., Wellington Street, Strand, London, W.C.**

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### PHOTOGRAPHS REGISTERED:—

**Nos. 48 and 50. Hermit Road, Canning Town, London, E. Photographs of the West Ham United Football Team, 1908-9.**

**We do not know anything of the character of the firm. You must remit to them by foreign money order from any post-office.**

**G.—We do not know who now supplies them. MESSRS. L. P. and Co., Milton House, Chiswell Street, London, E.C., supply a very similar article.**

**Cleethorpes).—Write Dorrett and Martin, 16, Belle Vue Road, Tooting, S.W.**

**QUERIES.—(1) Will you please compare for me the merits of spirit sensitising with spirit sensitising for carbon? I have noted head note to an article on the former, in July 3 issue and here, where it was claimed that good detail in the high-lights was obtained. (2) What bearing on gelatine in carbon have your notes on permanency of photographic records in July 17 issue? (3) What objections are there to making negative through the glass to obviate double transfer in carbon works? Would thin films be flat enough for good work with wide open lenses if used for the same reason? — H. W. GAULD (to be).**

**The spirit sensitiser is the more convenient to use, as the dries in about a quarter of an hour, whereas with the other takes some hours. Tissue sensitised with the citric solution is suited for thin and flat negatives, but with those of a vigorous character, such as are usually employed for carbon, there is a necessity for the more delicate tints in the lights to wash away. Citric tissue is much slower in printing than that sensitised with spirit sensitiser. (2) There is no risk of carbon prints changing in any way that the unvarnished negatives did. (3) None whatever, provided that the back is made quite clean and the glass is free from air bubbles. (4) Yes, if the films are strained thoroughly flat in the roll-holder.**

**REDA.—Will you kindly inform me whether the "Encyclopedia of Practical Photography," mentioned in the "B.J.," August 18, re Hollinger lighting, may be obtained in England? If so, where and price?—C. A. B.**

**As far as we know it is not at present obtainable, but you had better apply to Messrs. Dawbarn and Ward, 6, Farringdon Avenue, London, E.C.**

**ERS.—Can you tell me in a simple manner the actual advantage of a lens at  $f/6.8$  to one at  $f/8$ —that is, how much exposure will  $f/6.8$  require than  $f/8$ ? I should imagine that for a certain subject 1 sec., then  $f/6.8$  would want about 1.5 sec.**

**is right almost exactly. The exact ratio is 46:64, which, for practical purposes, is 3:4.**

**NE FOR ENLARGING.—Is it practical to use an acetylene lamp in an enlarging lantern? How would the light compare with incandescent gas?—J. H. L.**

**You can use an acetylene light, but for smallish work up to 12 or so, it is not so convenient as incandescent gas. It is on the candle power of the lamp.**

**AUTOCHROME EXPOSURES.—Will you in your "Answers to Correspondents" kindly reply to the following:—1. In taking an Autochrome of a stained glass window, how should the meter be used in order to ascertain the correct exposure? Should it be held toward the light outside the window in order to obtain the intensity of light passing through high-lights, or inside, from where the camera is erected, which, I suppose, would give the intensity of the light reaching the plate? 2. What would be the speed number of plate in such a case?—G. A. H.**

**1. For work of this nature we should use Watkins' special Autochrome dial, and hold the meter inside the window and facing it. 2. The speed should be taken as 1 Watkins. If you do not use the special meter you will probably find much trouble in hitting the right exposure. With a large aperture and ordinary meter the exposure will probably be two or three times the amount indicated.**

**P. P. AGENCY.—Of course the work is of the lowest class, but the prices offered by the firm surely indicate the class of its output. You have a legitimate grievance as regards the breakage of the negative, if the people were negligent in packing it for return.**

**S. F. D.—You should serve for the full period, whether paid this week or not, and you can then recover the two weeks' wages in the County Court.**

**A. W. B.—If you send full particulars of your lens to Messrs. Dallmeyer no doubt they will be able to supply you with an attachment to fit it. For our own part we should let them have the lens so as to be quite sure that everything is in perfect adjustment. Your lens is very long focus for telephoto work, and would require a proportionately long focus negative. The cost would probably be £5 or £6 or more. Whether you have high power or moderate power depends on what you wish to do. Moderate power is most serviceable generally.**

**METOL STAINS.—I have my hands constantly in metol, bromide developer, and through this they have become very black. Can you tell me how to remove these stains?—BROMIDE.**

**We never heard of such stains caused by metol, and if your hands have arrived at the stage of blackness it is a wonder you have not suffered from metol poisoning. We do not know any certain quick way of removing such stains, but they will probably disappear if you keep your hands out of the developer and wash frequently in hot water for a few days.**

**LENS FOR SHORT STUDIO.—May I ask you to kindly advise me as to the most suitable lens for full length cabinet work in an 18ft. studio? Having rather a poor light I desire a lens working at large aperture. To secure good definition with my present one I must stop down to  $f/8$  or smaller. This, as you will believe, is very inconvenient at times. Any particulars you can give, including prices, would greatly oblige.—STUDIO.**

**The studio is very short for taking full length cabinets in with a lens working with a large aperture. A lens of 9in. focus will require about 13ft. between the camera and the sitter, and that will only give you 5ft. for background, sitter, accessories, etc., and for the camera. Therefore we should advise you to obtain a lens of the anastigmatic type, having an aperture of  $f/4$  or  $f/4.5$ , such as the stigmatic of Dallmeyer, the Ross-Zeiss Tessar, Voigtlander Heliar or the like. All of these will answer your purpose, as they cover well, and have a flat field.**

**PRINTING HOUSE.—I am about to erect a wood house, chiefly for P.O.P. postcard printing. I should like same to be parallel with the garden walls, as it would look better. 1. On which side, A, B, C, or D, would you face the house—that is, the glass front? 2. I thought of putting glass from within 3ft. of the floor. Would you recommend other dimensions? 3. I thought of having glass along the bottom half of roof, as shown in sketch. Would you recommend other dimensions? 4. Which would be best, to have plain or frosted glass on roof? 5. Would it be best to have table made flat or inclined, as shown in sketch, for placing printing frames on?—J. V. THOMAS.**

**1. The glass should be on side D to secure the north light. 2. For printing purposes we do not see that the height is of much importance, but we should keep sill well down so as to make it easy to reach the frames. 3. A good deal depends on whether you have uninterrupted north light through side windows. If not, a roof light will be necessary, one about the width of the table.**

4. Plain glass. Frosted glass will cut down the light too much. In any case printing through glass is slower than in the open, so we should arrange for printing outside in fine weather, or else make the windows to open. 5. A table of adjustable inclination would be best. For actual printing, a good slope that will bring the frames near the window is advisable. If a good vertical north light is available we should prefer to fit the window itself with racks that hold the frames close to the glass. A flat shelf could be used in fine weather, and shelving under the top light could be used indoors.

**RENOVATION OF CAMERA.**—A little while ago, my studio camera looking shabby, I polished it up with a furniture polish, as used by the household. I used it exactly as the directions said, and thoroughly dusted it before the polish was applied. When finished it had a good polish, but it really looks worse than it did before. The flat parts are all right, but the corners are dark, and have a black look which the bright polish seems to have made more noticeable than they were before. Can you suggest anything that I can do, as the camera looks very bad as it is.—A. J. COXE.

What you have evidently done has been to apply the polish without previously removing the dirt from the corners and, as a consequence, you have polished the dirt, and thereby made it more conspicuous than it was at first. All that can be done now is to remove the polish, thoroughly wash off the dirt with warm soap and water, and apply fresh polish. As we do not know the composition of the polish you have used, we cannot suggest the best way of getting it off.

**COPYRIGHT.**—One town council have in their possession a number of very old manuscripts, maps, etc., relating to the district. I have thought of copying them and publishing them as postcards. That I can get permission to do, and, moreover, the authorities will give me every facility for doing the work. What I want to know is this: If I make the copies copyright, will that prevent anyone else from copying them?—VILLAGER.

If you make your copies copyright, that will protect them from infringement. But you must understand that it will not prevent anyone else from making similar copies from the originals, if they get permission from the council to do so. Copyright in your reproductions will not apply to the originals.

**LENS QUERY.**—I have a 12 by 10 R.R. lens, which seems to be a very good one, and it ought to be, as I paid a good price for it. But I find that when I focus with the full aperture and then stop it down to get all parts in focus the negatives are not so generally sharp as they ought to be. The other day, when the light was very bright, I focussed a picture very sharp and then stopped the lens down to  $f/32$ . I then found that some parts of the picture were not really so sharp as they were with the full aperture. Can you account for that?—THOS. WILSON.

The lens you have has a certain amount of spherical aberration, as most lenses of this type have—more or less. In future, focus the image with a medium size stop, say,  $f/16$ , and then stop down still further to get all planes sharply defined. In this way you will get all parts of the negatives sharp—that is assuming that the instrument is a reasonably good one.

**F. B.**—No such paper as you describe is obtainable commercially. We should not take at all a sanguine view of the demand for such a material.

**POSTCARD.**—Certainly you need not. You can draw up the licence to the effect that the reproductions are to be as postcards only. You will then be free to grant the reproduction of the photograph in any other ways.

**M. E. N.**—A paint which has been recommended for a flexible lantern screen is made as follows:—Glycerine, 1 lb.; white glue, 1 lb.; zinc oxide, 2 lbs.; hot water, 1 gallon. This is applied hot to the screen, using about 1 gallon for a screen 10 ft. square.

**REDUCING SULPHIDE-TONED BROMIDES.**—Is there any means of bringing down density of an enlargement (bromide) which has been sepia toned with the ferricyanide and sulphide solutions? I ask because in my absence an assistant toned a 30 by 20 enlargement without first letting me see it when I should have lightened it a little. Therefore, if you can reply in Friday's "Journal" I shall be grateful.—MAX COHEN.

Prepare a mixture of equal parts of 5 per cent. copper chloride solution and 15 per cent. salt (sodium chloride) solution. This

forms a suitable solution. The print is washed for about minutes and fixed in hypo for a minute or two, and finally washed.

**G. HERON.**—The device is not new. A precisely similar suggestion was made in our own columns about a year ago by Mr.cliffe, of Whitby. See "B.J.," June 28, 1907, p. 494.

**TREACLE DEVELOPER.**—Some months ago you gave a formula for a developer in which treacle was contained. It was for plates where fog was likely to occur, and though I did not make a note of it, but have since been unable to find either it or the article in the back numbers of the "Journal." Can you please indicate the date of publication and oblige.—ESTIMATION.

We have no recollection of such an article in our pages, but think you most probably refer to a formula of Mr. R. H. B. which appeared in "Photography," for August 27 of last year. The formula ran:—

Metal	50 grs.
Hydroquinone	40 grs.
Soda sulphite	14 ozs.
Washing soda	14 ozs.
Potass bromide	20 grs.
Water (boiled)	20 ozs.

Half an ounce of this developer and two large teaspoonfuls of golden syrup mixed with 10 ozs. of water formed the developer.

**DENSE TRANSPARENCIES.**—I want to make some very dense transparencies from some rather thin negatives. I have tried to get them on slow plates but cannot get what I want. When I increase the density I require there is a veil over the transparent parts, and for these quite bare glass is necessary for my purpose. A friend suggested that I should employ the carbon process and the special transparency tissue. That I have done, and although I get the transparent parts clear glass the others are not so clear enough. Can you help me out of my difficulty, as the transparencies seem to meet my requirements if I could get them denser?—T. R. WANT.

Instead of using the special transparency tissue, which contains a large amount of pigment in proportion to the gelatine, we advise you to try one that contains less, such as, we will suppose, portrait brown or purple. With such tissues the light penetrates deeply into them, and as a consequence the picture has a considerable amount of relief in the shadows when developed. To intensify the transparency with a solution of permanganate and potash—strength immaterial. The reason why in this case it is better to employ a tissue thin of pigment (that gives a thin film of gelatine) is that it is the gelatine only that is acted upon by the permanganate, and not the pigment itself. Consequently, a thick film of gelatine almost any degree of density may be obtained, while the light remains as clear glass.

**J. C. V.**—A portrait lens of six inches back focus is not suited for taking groups of several persons on the cabin picture. That fully accounts for the indistinctness of the figures in the print sent. You require a longer focus lens for pictures, and one with a flatter field, as we notice that the figure of the centre standing figure is not in the same focus as the figure of the body.

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## The British Journal of Photography

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## SUMMARY.

New Method in Time Development.—Professor G. H. Bryan has a direct method of employing the time method in development by first testing the activity of the developer. Mr. Alfred Mees, comparing the method with his already known test-slipure, considers that Professor Bryan's modification is an improvement. (P. 677.)

"B.J. Almanac."—The attention of secretaries of photographic societies is invited to applications for particulars of these which will shortly reach them.

Editorial notes on the different types of actinometer which are used for carbon and other forms of printing processes which give a visible image appear on page 675.

S. E. Sheppard has communicated to the Royal Photographic Society the results of tests on the best conditions for colour sensitising with the iso-cyanine dyes. (P. 678.)

New description of reflex camera is among the patents of the month. (P. 682.)

Practical methods to be followed in using a lens with a fixed focus appear on page 676.

## "COLOUR PHOTOGRAPHY" SUPPLEMENT.

Lecture on the Thames, illustrated with Autochrome plates, will be a feature on three nights of each week at the R.P.S. Lecture, which opens at the New Gallery on Thursday week. We publish an interview with the lecturer and maker of the slides, Mr. McIntosh. (P. 65.)

Newer Screen-plates.—We describe a modified form of the Dr. Powrie screen-plate. Specimens of the work of the "New" screen-plates were exhibited in London last week. (P. 68.)

"Uto" Bleach-out Process.—Dr. J. H. Smith announces experiments in various directions in the manufacture of the "Uto" process. (P. 68.)

F. C. Tilney, in reviewing the reproductions of Autochromes in "Studio" summer number, emphasises the special importance of selection and composition at the time the exposure is made. (P. 69.)

E. Stenger and Herr F. Leiber have published a paper showing the mechanism of the preparation of copies of one screen-plate transparency from another. Their results confirm those of Dr. Mees, and, in the "Colour Photography" Supplement, drew attention to this matter. (P. 69.)

## EX CATHEDRA.

### The "British Journal Almanac," 1909.

The issue of the "B.J. Almanac" for next year is already the object of our care, and the next few weeks will see a large proportion of its matter set up in type. Our efforts of late years have been devoted to the systematic arrangement of the contents of the "Almanac," and the forthcoming issue will witness a further notable departure in this direction which will, we believe, be appreciated. Within the next few days we shall apply to secretaries of photographic societies for certain particulars to be inserted in the directory of these bodies. These applications are addressed in most cases to the secretaries whose names appear in last year's list, but as in some instances there have been changes which have not been brought to our notice, we would ask that the form may be at once forwarded to the person at present holding office.

\* \* \*

### Society Programmes.

The winter session of many photographic societies being now on the point of commencing, we may remind our good friends the secretaries that fixture lists may be sent to us for announcement of the programme week by week in our "Societies" column. We fear that comparatively few photographic societies are in a position to issue a fixture list of the length and interest of that, say, just completed by the Liverpool Amateur Photographic Association, which has set before its members what is to be offered them up to April 15 of next year. But, then, few societies have an Inston at the helm to provide the mixture of popular and technical fixtures which, in these days of simplified photography, appears to be more acceptable than the evenings of formulae and such recondite themes which attracted photographic clubmen of ten years ago.

\* \* \*

### Gaslight and Bromide Images.

A writer in a contemporary makes some rather rash statements with regard to the comparative toning properties of gaslight and bromide papers. He states that the composition of the image on a bromide print and on a gaslight print, when both come out of the fixing bath, is the same, and therefore all toning processes that are employed after fixing may be used indiscriminately either for gaslight or bromide papers. According to this writer the image after fixing consists "simply of metallic silver embedded in gelatine," and while he states that the silver in the gaslight paper may be of finer grain than that in the bromide paper, he gives no proof of this any more than he does of the other statement. Possibly his experiences have been confined to the varieties of gaslight papers that are nothing more than very slow bromides. These do tone in the same way as the ordinary bromides, but chloro-bromide emulsions

behave very differently, and few, if any, will yield good results with sulphide toning methods. It has several times been shown that these prints contain very little silver in the metallic form, and that the bulk of the image is made up by some compound. If we make two lantern slides, one on a bromide plate and the other on a chloride gaslight plate such as the Kristal, we may obtain equal density on each; but if both plates are put into persulphate, the silver on the bromide plate is slowly removed until little trace of the image remains, while the black silver on the other plate rapidly disappears, leaving a strong brown image behind. Further than this, the one image can be intensified by simple redevelopment, while the other cannot. These tests afford ample proof that the images are not the same, and also suggest reasons why they tone differently.

### The Correction of Distortion.

The interesting article on this subject by Mr. Debenham in last week's issue points out very clearly the errors that many fall into when attempting to correct convergent distortion. Time after time we see it stated in text-books and elsewhere that the required connection can be easily obtained by saving either the negative or the copy, yet it has long been known that this only corrects the uprights at the expense of distorting the heights, and that the result is far less correct than was the original "distorted" image. Mr. Debenham does not give any definite rules for effecting the true correction, but a very simple method is given in the "Almanac" for 1908, page 950. In this method the original lens is used, and all the data required are found very quickly and easily from the distorted negative itself. This subject of correction is a very interesting but somewhat complex one, especially when the matters of securing perfect correction and good focus at a large aperture are combined. A full investigation of the subject by Mr. C. Welborne Piper was published in "Camera Obscura" for March, May and June, 1900, and from this it will be seen that the conditions are curiously inelastic when the question of focus is included. Enlarging and the use of a long focus lens then becomes essential, and reduction or copying full size is entirely prohibited. If, however, we rely on a small stop for focus then reduction and the use of the original lens becomes possible. A method for reduction is given in the "Almanac," but for preference we recommend the first enlarging method given, which gives quite accurate results at a fairly large aperture. If a reduced or full size copy is required it should be made by reduction from the corrected enlargement. When we want an enlarged corrected negative we first make a positive by

contact from the original and produce the corrected negative from that. If a small corrected negative is wanted make an enlarged corrected positive and then a reduced negative from it. The process is quite a simple one and troublesome calculations are required.

\* \* \*

### Dührkoop's Quarter-Century of Photography.

Those who met Herr Rudolf Dührkoop at the Brussels Convention and during his subsequent short stay in London perhaps have found it difficult to believe that his twenty-five years in professional photography were prefaced by an almost equal period of ordinary commercial occupation. Yet Dührkoop returned from the Salon of Paris to enter business life, and it was not until twenty years later that he embarked upon the career of a professional photographer. And it was fifteen years later before he perceived his "métier" in the way of a powerful and characteristic portraiture. His whole and twenty years of photography will be celebrated in a characteristic German fashion by a "festmahl" on October 1st in the magnificent "Hamburger Hof" on the upper storey of which Herr Dührkoop's studios are arranged. We are pretty safe in anticipating that on that occasion the youngest of the company will be the host himself, despite his sixty-five years.

\* \* \*

### Keeping Properties of Carbon Tissue.

Mr. Harold Holcroft draws attention to the "A.P. and P.N." to an instance of unsensitised carbon tissue becoming soluble as the result of keeping for a period of from ten to fifteen years. Gelatine is apt to change its character as the result of long keeping, and every photographer is familiar with the fact that old negatives and prints often will not yield to various methods of after-treatment that succeed easily on fresh films. For example, a very old bromide print often cannot be used for the bromoil process, and the intensification of an old negative is frequently a risky operation. Carbon tissue may be reasonably expected to be affected in a similar fashion, while it is not at all unlikely that the pigments incorporated with it help to produce a change. Pigments of various kinds are used, and many pigments are metallic compounds extremely likely to themselves vary with the course of time and to affect the gelatine. Possibly hardened tissues referred to by Mr. Holcroft might have been rendered serviceable by adopting some treatment calculated to soften the gelatine, but we doubt very much if any treatment would have completely restored them.

## THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC FOR 1909.

Edited by GEORGE E. BROWN, F.I.C.

THE forty-eighth annual issue of THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC will be published on December 1. This year's ALMANAC reached a total of over 1,000 pages, and the entire edition of 25,000 copies was sold out immediately. Of no other photographic book ever issued can two such unique facts be recorded. The edition for 1909 will also consist of 25,000 copies.

The editorial article will deal very completely with the important subject of

### REFLEX CAMERAS,

and the systematic review of the work of the year under the title "Epitome of Progress" will be a strong feature of the volume.

The lines followed in the previous editions of the ALMANAC will be maintained in general, but in a number of particulars the arrangement of the volume for 1909 will be

modified to make it more than ever the book of universal photographic reference.

The ALMANAC for 1909 will appeal to photographers the world over as a daily reference guide in practical work. The standard matter and formulæ will be revised and added to where necessary, and, wherever practicable, features of an informative nature will be added.

**\*\* IMPORTANT NOTICE.**—The attention of advertisers specially directed to the announcement that the new edition of the ALMANAC (25,000 copies) will again be put in the hands of dealers and the trade on December 1st, as to be well in advance of the Christmas publishing season, and the co-operation of advertisers to that end will be esteemed by the publishers.



# SOME NOTES ON ACTINOMETERS.

The term "actinometer"—denoting an instrument for the measurement of the chemical activity of light—is used in photography in a very restricted sense. It is commonly understood to apply to one or other of the appliances used for gauging the power of the light when printing from negatives. An "exposure meter"—or at any rate that form of it which does really measure the light—is actually something more than an actinometer, but the two distinct terms have come to possess their separate applications in positive and negative photographic work. The construction of an actinometer is a matter on which perhaps a whole volume might be written, but the inquiry of a reader as to the most useful types of the instrument may be best answered here in the form of these notes, which may thus be of service to the increasing number who of late years have adopted carbon printing. The employment of some method of timing the exposure in this process is essential, seeing that the effect of the lights is not at once visible to the eye as it is in most other printing processes. Yet the use of an actinometer is also convenient in other processes, such as the gum-bichromate and platinotype, when a large amount of work is in hand, as well as in the exposure of collotype plates, etc.

The names of inventors of actinometers for carbon printing are legion, and amongst them may be mentioned Johnson, Vidal, Monckhoven, Lamy, Sawyer, Spencer, Barton, Hemagis, Vogel and others. The difference in construction and principle between some of the instruments is but slight; in some instances very slight indeed. They depend upon the changes that a sensitive paper undergoes on exposure to light. Various sensitisers for the paper were suggested many years ago, such as different salts of iron, chromium, and silver. But with the exception of the last two these ancient recommendations did not come to be at all generally applied in practice. Some twenty or more years ago different formulæ were published for preparing sensitive silver paper. The following is one given by M. Lamy. The paper he employed was plain thin paper (8 kilos) which was immersed for ten minutes in the following:—

Chloride of ammonium .....	2 gms.
Water .....	100 ccs.
When dry the paper was floated for four minutes on:—	
Distilled water .....	100 ccs.
Silver nitrate .....	12 gms.
Citric acid .....	6 gms.

The paper will keep good for several months.

Monckhoven employed a similar formula, but without citric acid; but after sensitising he washed out the free silver with water in order to make the paper keep after treatment, which it will do for a long time, though it is very slow in darkening. Most carbon printers at the present time employ the ordinary gelatine P.O.P. for the actinometer. Although silver paper is almost universally used for actinometers, theoretically it is not the right one for the purpose, for the reason that the sensitiveness of carbon tissue is subject to certain changes not followed by the silver paper; for example, temperature and its hygroscopic condition, as well as the time it has been kept in sensitising, have a marked effect on its sensitiveness, which is not correspondingly so in silvered paper, that is to say the two do not work in unison. In the attempt to imitate this Dr. Vogel recommended for his actinometer a paper sensitised with bichromate of potash, the bath being as under:—

Bichromate of potash .....	1 part.
Water .....	30 parts.

The paper, it was claimed, will keep for several weeks. But it is obvious that it, like all papers sensitised with bi-

chromate of potash, more or less slowly undergoes change. Some little while back we were in a large establishment on the Continent where several hundred carbon prints (mostly of large size) are turned out daily. The actinometer there in use was of quite a primitive kind. It was merely a small frame with a graduated screen with four or five steps. The sensitive paper used with it was the back of a piece of the carbon tissue then being worked, and it was claimed for this system that in the actinometer the sensitiveness of the paper backing was in accord with that of the pigmented coating on the front. Be that as it may, we were assured that the errors in exposure never exceeded 1 per cent. and rarely amounted to that.

It may, however, be taken that in general work under good conditions, the use of gelatine or collodion P.O.P. does not lead to any appreciable errors in timing the exposure of carbon tissue.

In regard to the actinometers themselves, it would be impossible in this article to deal with all the different forms which are given, as witness the Autotype Company's price list alone, which contains no less than five different kinds varying in price from one to six or seven shillings each.

Actinometers may be divided into two classes, those that depend upon a single tint for comparison, and those dependent upon a graduated scale of tints. A typical form of the former is that known as Johnson's—this was the invention of the late Mr. J. R. Johnson, so well known in connection with the carbon process. It is a little metal box about an inch and half square with a glass lid which is painted on the under side the same colour that silver paper assumes on exposure to light. In the centre the paint is removed to the extent of a quarter of an inch or so. Under the glass is a velvet pad which presses the paper in contact with the glass, whilst the lower portion contains a narrow band of silver paper. In the lid is a slot through which the paper can be drawn forward after exposure. In use the instrument is placed amongst the printing frames, and when the paper has darkened to the colour on the glass it is said to have been exposed, "one tint." The paper is then drawn forward and is then ready for another tint, and so on. A disadvantage of this form is that it requires constant watching, as if the tint be passed it is difficult to estimate how much it has passed it. Another drawback is that the silvered paper does not always take the same colour as that on the instrument, since the colour is dependent upon the paper's hygroscopic condition, though less so in the case of gelatine than with albumen paper.

The most generally useful actinometers for the carbon printer are those with a graduated numbered scale, several types of which exist. The "Woodbury" is one, though we think it is not now made commercially. It is a small circular box with a glass top which is divided into six sectors of different tints. In the centre is a small clear space, under which the paper is drawn through a slot in the side. The tints of the sectors correspond with the different tints that the paper assumes with different periods of exposure to light. A very simple scale screen may be made by taking a strip of thin paper, like bank post without water-mark, say 4 inches long and  $\frac{3}{4}$  inch wide, and on that securing at one end by gum another strip,  $\frac{1}{2}$  inch or less, and on that another still shorter than the previous one, and so on until we get a scale ranging from one to six or eight thicknesses of paper. These are then numbered. In use the scale is put into a quarter-plate printing frame, with a strip of P.O.P. behind, and we have an efficient actinometer as good as one can well desire. The Sawyer actinometer is similar to this; instead, however, of the paper scale, it is a carbon print on glass mounted in a convenient metal case, the under portion of which contains

a roll of sensitive paper which can be drawn under the scale. Burton's actinometer will appeal to many. In construction it is similar to Sawyer's, except that the screen is a series of tiny portraits of different densities, so that one may compare the density of the negatives to be printed from with one or other of them and expose accordingly.

In conclusion, the general advice may be given that when printing on a large scale, when one can be constantly watching the actinometer, the single tint ones may possibly be the best. But for general use, when other work has to receive attention at the same time, the scale form is decidedly to be preferred.

## CHEMICAL FOCUS IN LENSES AND HOW TO ALLOW FOR IT.

THE recent article, "Some Discursive Notes on Lenses," from the pen of Mr. H. M. Pelwith, has no doubt proved enlightening to many who have but a very limited knowledge of optics. In this article I may supplement by a few notes some misconceptions with regard to the class of lenses which possess a chemical focus—that is to say, a lens which, when the image is sharply focussed on the ground-glass, gives an unsharp image in the negative. When this arises it is sometimes attributed to the focussing-screen of the camera not being in accurate register with the dark slide, while in some instances it is really due to the lens itself. This is a point that is fully dealt with in all elementary treatises on optics, and need not be dwelt upon here, for it is sufficient to say that this quality existed in a very large proportion of the earlier portrait lenses. The same thing exists in a considerable number of the modern lenses which are fitted to some of the cheaper forms of fixed-focus hand-cameras. Although they are often sold as rectilinear—as, indeed they are—they really consist of two single non-achromatised glasses.

We know that some photographers of the present day would at once condemn a lens that did not work to focus as being unusable, yet the prejudice is based on a fallacy. All the earlier portrait lenses of Voigtländer—and they made his name famous amongst photographers—had a chemical focus, and when using them it was necessary, after focussing the image sharply, to rack the lens out a certain distance in order to obtain a sharp picture. The same thing obtains in most of the old foreign lenses, as they were mostly copies of Voigtländer's. At the period these lenses were made an instrument was sold at the photographic stores under the name of the "focimeter" for ascertaining the difference between the visual and actinic foci. It was an invention of the late M. A. Claudet, and consisted in segments of a circle, numbered, and placed at fixed distances apart on a movable axis. This was placed at some ten feet distance from the camera, the centre number being focussed upon and a photograph taken of it. After a mark had been made on the sliding-tube of the mount the figure that was sharpest in the picture was focussed upon, and the tube again marked at that point. The distance between the two marks showed the distance the lens had to be racked out to get the image sharp in the negative.

Most of Voigtländer's lenses had this distance engraved upon the mounts, but many of the copies of them had not—hence the use of the focimeter. When an old portrait lens is met with which has an engraved scale on the sliding portion of the mount, it may be taken for granted that the lens does not work to focus yet. As has just been said, although a lens may not work to focus, it need not be condemned for that reason. Voigtländer, it may be mentioned, when he first put focus-true lenses on the market, did so somewhat under protest, as he maintained that lenses over-corrected for colour gave better results, were quicker, and had more depth of focus than had those in which the two foci were coincident. Having said this much, we shall now explain how it can be simply ascertained if a lens has a chemical focus, and what is the difference between it and the visual one.

In the first place, it is necessary to be sure that the focussing-screen and the dark-slide of the camera are in accurate register for unless that is ensured the test may be misleading. There are different ways of making the test. One is to get a narrow strip of board, say three-quarters of an inch thick and an inch wide, and put a screw with a fine thread through it. The board is then placed across the focussing-screen and the screw turned until the point touches the glass so that it slightly grates upon the latter when the wood is moved about. A plate is then inserted into the dark-slide and the wooden bar passed over it. If the screw-point just touches the surface of the glass, as it did touch the focussing-screen, there is evidently accurate registration. Another plan is as follows:—A strip of cardboard is cut to a wedge-shape. A straight-edge is then placed across the focussing-screen—one of the dark-slides will do—and the wedge is pressed between it and the ground-glass. The wedge is then marked with pencil where it touches the straight-edge. The dark-slide, with a plate in it, is then dealt with in the same way: if it is found that the pencil-mark accurately cuts the straight-edge all is right, if not, a mark should be made where it does; then if two parallel lines be ruled, one from the first mark and the other from the second, the distance between them will show the amount of error.

Being assured that the focussing-screen and the dark-slide of the camera are in true register, we can proceed to test the lenses which we will assume is one of the earlier portrait combinations, though what is here said applies to all other kinds of lenses. In the absence of a focimeter, such as that just described, we must extemporise one. This we may do by placing eight or nine printed cards in a row, about four or five inches behind one another, supported, say, on corks, with a pin in each to hold the card. We focus sharply on the centre card and take a negative. If the card focussed upon proves to be the sharpest of the lot it is evident that the visual and chemical foci are coincident. If one of the others is the sharpest, then the sliding-tube should be marked, the card that was sharpest in the negative should be focussed, and the tube again marked. The distance between the two marks shows the distance the lens must be racked out after focussing in order to get sharpness in the pictures.

Another way is to pin a newspaper on a board placed in a slanting position in front of the camera, and mark the centre line of the printing, focussing on that and taking a negative. If this centre line is sharply defined, well and good. If not, that which is to be focussed upon and the tube marked as in the previous case. In making the tests with a portrait lens the camera should be placed at about the distance from the object as when taking a portrait, for it may be explained that as the conjugate focus is lengthened so is the difference between the two foci extended. Thus, in copying the same size difference is approximately double what it is with distant objects, and this makes a lens with a chemical focus inconvenient for copying purposes. In testing a lens for chemical focus the aperture should always be employed. Instead of having to



the lens after focussing the ground-glass of the screen may set back the required distance, but that becomes inconvenient when other lenses have to be used on the camera.

In testing lenses for outdoor work, such as R.R.s, it is best to use cards with bold print upon them out-of-doors at some little distance, and six or eight feet apart; a negative is taken as before. As these lenses, as a rule, have not sliding mounts, the

register marks must be made on the back or front of the camera. In a case of the periscopic doublet of two uncemented lenses they are adjusted by the makers of the camera so that the picture is taken at the chemical focus and not the visual one. If one of these lenses be put upon another camera a sharp picture will not be obtained unless the necessary correction after focussing is made for the chemical focus.

"OLD-HAND."

## FACTORIAL DEVELOPMENT FOR TANKS AND MACHINES.

HERE negatives have to be developed in total darkness in a tank or machine, it is, of course, impossible to employ the "Watkins" factorial method of timing the development, as this is, on the time of first appearance of the image. At the same time, it is important to adopt some method which will compensate, not only for any accidental errors in commanding the developer (such as naturally may occur in the hands of amateurs with limited time at their disposal), but also for variations of temperature, or for effects of deterioration in the developer or any of its constituents, if these have been kept any length of time before use. It may be sound advice to always keep the same temperature when developing, to use fresh developer for each plate, and to throw away any chemicals that have been in the house for some time. But these precautions are not always practicable.

The method which I am now using is so simple that I am greatly surprised to find that it is not universally known. All that is necessary is to test the developer by inserting a very small strip of exposed bromide or gaslight paper and watching it blacken up in ordinary daylight, like the paper does in an anemometer. To make the process more exact, I first insert the end of the slip and let it blacken. I then immerse a further length and count, with a watch, the number of seconds, or minutes, that elapse till this portion is indistinguishable in colour from the part first inserted. This time determines the speed of the developer, and it is only necessary to multiply this time by a suitable numerical factor, previously determined, in order to find the correct time of development of a properly exposed negative in the developer in question.

With metol hydroquinone I have obtained satisfactory results using the factor 20. At the same time the choice of a factor is not necessarily dependent on individual requirements to a considerable degree, and must be left for future experiment. The factor may, moreover, vary according to the paper used in making the preliminary test, although in a few experiments I have made bromide and gaslight paper have taken about the same time to blacken up.

This method compensates for variations in the strength of the developer, the activity of its constituents and the temperature. It possesses, moreover, the following advantages over the generally accepted "Watkins" method based on the time of appearance of the image:—

1. The time of commencement and the time of completion of

development are two very different things. In the ordinary method these are assumed to be proportional to one another, an assumption which is probably often far from true. In the present method the time of completion of development of the test slip is observed, and this is much more likely to give a correct indication of the time of completion of development of the negatives.

2. I suppose most photographers, like myself, have tried applying the ordinary factorial method to over-exposed negatives, which flash up in a few seconds, with the result that the negatives have been found afterwards to have been rushed into the fixing bath long before they had acquired proper contrast. According to the present method, an over-exposed negative will be developed for the same time as a correctly exposed one. It will, of course, get very black, but, if time is no object in printing, it will yield good prints, which it would not have done had its development been arrested sooner.

3. An under-exposed negative may suffer from under development, but such a negative would be highly liable to suffer more from fog while the appearance of the image was being observed in the ordinary method.

4. In employing the ordinary factorial method the strength of the developer must on no account be altered after once it has been applied to the negative. Only the time of development can be adjusted to compensate for excessive or defective speed. According to the present method, if the preliminary test shows the developer to have a higher or lower speed than is desired, the degree of dilution can be adjusted accordingly, and a second test made before making the actual development. In fact, it is quite easy to compound the developer to any desired speed.

5. A stale or exhausted developer is readily recognised, the test slip turning a dirty grey or reddish-brown colour, instead of a good black.

For ordinary purposes, the test slip should take not less than about 10 seconds or more than about a minute to blacken up. I believe that most photographers are liable to failures through miscalculating the speed of the developers they use. I have had a case where some freshly mixed pyro developer failed to produce any effect on the negative from some unaccountable reason. The present method affords a safeguard against any such failures, and I only regret that the idea had not suggested itself to me long ago.

G. H. BRYAN.

### MR. WATKINS ON PROFESSOR BRYAN'S METHOD.

Proof of the above article by Professor G. H. Bryan was sent

by us to Mr. Alfred Watkins, who writes as follows:—

The method which Professor Bryan describes is of very considerable interest, and has one point of novelty about it—the observation of the time for maximum visual development effect, instead of the minimum visual, or time of appearance. Making the observation in this way makes it unimportant how long the test slip is exposed (probably within limits) and the observation of development can also be made in daylight.

But the wording of the article almost makes the reader think

that this is the first suggestion of the use of a timing slip of exposed film to test the activity of the developer before the actual plate is developed. Readers of the "Watkins Manual" will find such a method described in the last three editions of the book, under the headings, "Development without dark-room light" or "Development by separate slip." The point in which my method differs is that I have advocated an observation of the time of appearance of the image on the slip, and that a slip of

a roll  
sca

the same plate be used. I introduced my plan by saying that it "practically amounts to making a preliminary trial of the activity of the developer before pouring it on the plate, and does away with all need of any dark-room light; a dark-room with a naked gas jet, which can be turned up and down, being all that is necessary."

The advantages, 2, 3, 4, and 5, which Professor Bryan states his test slip plan possesses over the "ordinarily accepted Watkins method" are all equally shared by the test slip plan I described in the Manual.

But I certainly think that the modification Professor Bryan has introduced in this test plan is an improvement on my original one, as it involves less preparation. In the few trials I have made I have found gaslight paper far better for the Bryan method than bromide paper, the latter seeming to take a different time for complete development according to the amount of light the paper was exposed to. With gaslight paper I found the method quite workable, and as far as I can see, quite sound, although it

would be desirable to define the limits within which the plate should be exposed to light.

Its one disadvantage is that the factor will vary with every brand of plate used, and that every user will have to find out the factor for himself. In this respect the development classification of plates on the Watkins speed card would be far more useful, as the factors for different plates would be in the same ratio as the figures given for the plates. Not being able to give a definite time in the instructions is, to my mind, a great drawback.

Frankly, I consider a thermo. time method more simple and useful than this test slip plan to those who wish to develop without dark-room light; for it gives definite times with only a thermometer to observe. The fault in most instructions for time development has been that the variation for temperature has been simply shirked, while the variation (a very large one) for different brands of plates has been treated as if it did not exist.

ALFRED WATKINS

## THE COLOUR-SENSITISING PROPERTIES OF THE ISOCYANINE DYES.

[In a lengthy communication to the current "Photographic Journal," Dr. S. E. Sheppard deals both with the chemical constitution and the optical sensitising properties of the dyes derived from cyanine. The following is the latter portion of the paper and contains the facts and conclusions more immediately concerned with the employment of the dyes in emulsions and as bathing solutions.—Eds., "B.J."]

THE apparatus used has already been described,\* but it is necessary to explain one or two of the terms employed. By "sensitising power" is meant the increase in sensitiveness conferred on a silver haloid by a dye for the region in which it acts. Strictly speaking, what is required is the sensitiveness or "speed" of the plate for each wave-length of light over which the sensitiveness extends, the values then being corrected for the energy distribution in the spectrum of the light source. For some purposes the division of the spectrum into two or three regions gives valuable results. In the case in question, namely, a comparison of the action of a body of dyes which affect much the same region of the spectrum, it is sufficient to cut off the blue and violet rays which affect the ordinary sensitiveness and measure the relative effect of the plates to light from 5,000 Å.O. onwards. For photographic purposes the value of the ratio *blue sensitiveness* =  $\chi$  is measured for a normal daylight yellow sensitiveness.

But for the photochemical comparison of this series of dyes it was unnecessary to reduce the measurements to daylight, and the ratio was measured with naked acetylene, screened in turn by 1 cm. of 4 per cent. potassium chromate and 1 cm. of 2 per cent. copper sulphate solution saturated with ammonia. The plates were exposed in the sensitometer, developed, bathed, washed, etc., in a special thermostat.

### Conditions of Sensitising.

The method for sensitising plates by bathing varies somewhat with the dyestuffs employed. The following methods were tested:—

- In plain water solution, varying the concentration, times of bathing and washing.
- In water solution, after a previous bath of alcohol or alkali.
- In semi-alcoholic solution, in ammoniacal solution.

It may be at once stated that the most consistent and effective results were obtained by the first method, which was therefore used for the comparisons. The trouble due to the bleaching of the dye solutions by dissolved carbon dioxide was obviated as much as possible by boiling the distilled water, rapidly cooling to 20 deg., and preparing the solution immediately before use. The following results were established by method (a):—

- (1) *Effect of time of washing.*—The result of a previous experiment with pinacyanol was confirmed, ten minutes being sufficient to remove excess of dye. This has, however, less effect than with the erythrosine dyes.

Time of washing.	Inertia.
0	10
60 secs.	5
5 mins.	2.40
10 "	1.70
50 "	1.73

Very prolonged washing, whilst not influencing the sensitiveness much, appears to improve the keeping properties of bathed plates. Experiments on this are in progress.

### Effect of Concentration.

Plates were bathed five minutes in solution of *p*-tolu-quinaldim *p*-methoxy-quinoline-ethyl-cyanine-iodide, prepared as described, and washed ten minutes.

Strength per 100,000 parts.	Inertia.
.5	4.20
1.0	1.70
2.0	1.73
4.0	2.80
8.0	3.20

A strength of 1 in 100,000 was therefore sufficient.

### Time of Bathing.

Plates were bathed in 1 in 100,000 of the solution.

Time.	Inertia.
1	3.25
2	2.20
5	1.72
10	1.78

Hence at this strength five minutes' bathing is sufficient. Generally speaking it appears that the three factors, concentration of bathing, and washing out exert a reciprocal action, there being, as in other cases of this nature, a maximum effect for any given set of conditions of action of desensitisers (Sheppard and Mees, "Proc. of Roy. Soc.," 1907). Thus, bathing in concentrated solution with prolonged washing gives the same effect as bathing in a weaker solution. The results, which agree with the theory that the dye forms an adsorption compound with the silver halide, may be expressed as follows:—

- (1) The most prolonged washing leaves a definite proportion of dye associated with the silver bromide.
- (2) The maximum effect is secured by removing excess of dye, but is not necessarily identical with the fixed minimum indicated in (1).

\* "Investigations on the Theory of the Photographic Process," p. 334.



Effect of Previous Baths.

The previous baths used were 20 per cent. sodium carbonate, and 2 per cent. ammonia. With dilute solutions of the dyes the alkaline bath had a favourable influence, but no greater increase of sensitiveness could be secured than with plain aqueous solutions under right conditions. But where, as in spectroscopy, films were to be bathed and used rapidly, the bath is of value, as using dilute solution of the dye no precautions against bleaching are required, and the carbonate bath causes but little extra fog. Ammonia had a somewhat similar effect, but also definitely increased the sensitiveness with some dyes. But it leads to fog, is uncertain in its action, and unnecessary with the iso-cyanins.

Comparison of Sensitising Power.

The plates were bathed five minutes in a solution 1 in 100,000 the dye and washed ten minutes, developed two minutes in a metol-hydroquinone developer, all the operations at 20 deg. The results are given in order of sensitiveness.

TABLE 9.

Dyestuff.	Log $\epsilon$ .	Inertia.	Speed = $\frac{i}{100}$
<i>p.</i> chl-quinaldine- <i>p</i> -tolu-quinoline-ethyl-cyanin-iodide	2.47	295.5	.34
<i>m.</i> tolu-quinaldine-quinoline-ethyl-cyanin-iodide	2.30	200	.50
Same with previous alkali .....	2.20	158.8	.63
$\beta$ naphtho-quinaldine-quinoline-ethyl-cyanin-iodide.	2.15	141.3	.71
quinaldine- <i>p</i> -ethoxy-quinoline-ethyl-cyanin-iodide.	2.15	141.3	.71
<i>p.</i> methoxy-quinaldine- <i>p</i> -methoxy-quinoline-ethyl, etc.	2.13	135	.74
<i>p.</i> tolu-quinaldine-ethyl-quinoline-methyl, etc.	2.10	126	.79
<i>p.</i> ethoxy-quinaldine- <i>p</i> -tolu-quinoline-ethyl, etc.	2.05	112.2	.90
<i>p.</i> methyl-quinaldine-quinoline-methyl, etc.	2.04	109.7	.91
<i>p.</i> methoxy-quinaldine- <i>p</i> -tolu-quinoline-ethyl, etc.	1.97	93.4	1.07
<i>p.</i> tolu-quinaldine- <i>p</i> -chloro-quinoline-ethyl, etc.	1.95	89.0	1.12
<i>p.</i> tolu-quinaldine-methoxy-quinoline-ethyl-cyanin-bromide.	1.80	63.1	1.59
<i>p.</i> tolu-quinaldine-ethoxy-quinoline-ethyl-cyanin-bromide.	1.70	50.2	1.99

As the dyes are not simply related, and further experiments on simpler derivatives are required, it is not possible to draw any general conclusions as to the influence of substituted groups on the sensitising power. But by comparison of one with another it appears that ethyl and methyl groups have about the same influence. Comparison of (14) and (15) shows the great difference according as substitution occurs in the quinaldine or quinoline nucleus. The data are chiefly of interest for technical purposes and for comparison with the light-sensitiveness of the dyes themselves.

Relation to Light-Sensitiveness.

All the iso-cyanines, like the cyanines, are bleached by light. In pentine oil the reaction proceeds with measurable velocity. To obtain the relation, if any, to sensitising power, solutions were prepared in the spectrophotometer of equal original strength of absorption at their maxima, and the times measured which they took to bleach to one-third of the original absorption. The reciprocal of this was taken as a measure of the light-sensitiveness. This issue showed a definite parallelism between light-sensitiveness and sensitising power. E. Vogl ("Wied. Ann.," 1891, 43, 449) found that in the eosine series sensitising power and light-sensitiveness were more or less related. Abney's theory of the action of sensitising dyes was that light decomposed the dye-stuff, the product acting as a nucleus for reduction, and he hence considered the light-sensitiveness as of primary moment. It has been shown, however, that the addition of the decomposition-product has no effect in making plates developable, and when different groups

of dyes are considered the parallelism does not hold good (J. M. Eder, "Beiträge zur Photochemie, etc.," Tl. III., p. 1 *et seq.*), although it certainly appears valid within a group of dyes of the same constitution, so that both phenomena probably depend on the same photochemical change in the molecule. In the following table the results are resumed.

TABLE 10.

The numbers refer to the dyes tabulated in Table 9.

No.	Sensitising Power.	Time of Bleaching.	Sensitiveness.	P.
2	1.99	12.2 min.	8.22	4.13
3	1.59	15.0 "	6.6	4.15
5	.90	19.5 "	5.12	5.87
6	1.07	20.2 "	4.95	4.63
7	.71	25.0 "	4.00	5.65
8	.50	35.0 "	2.86	5.72
9	.74	27.0 "	3.70	5.10
10	.79	31.0 "	3.23	4.10
11	.91	18.5 "	5.40	5.94
12	.71	32.0 "	3.12	4.40
13	1.26	16.0 "	6.25	4.95
14	.34	42.0 "	2.38	7.00
15	1.12	17.0 "	5.68	5.07

The Relation between the Sensitising Spectra and the Absorption Curves of the Dyes.

The absorption curves of the dyes in alcohol and water have already been mentioned. The sensitising spectra were obtained by exposing the plates, bathed in the dye-solution in the manner detailed, in a grating spectrograph to standard acetylene light. The plates were exposed two minutes and developed two minutes in the standard metol-hydroquinone developer. They were dried after bathing in a special cupboard by a current of air drawn over calcium chloride. The densities were measured for every 10  $\mu$  in a special carrier. Experiment showed that under proper conditions of sensitising the densities in the blue-violet region of the spectrum were not depressed by bathing in isocyanin solutions. For the comparison of sensitising and absorption spectra the curves are only given from 490  $\mu$ .

TABLE 11.

No. 2. *p.* tolu-quinaldine-*p*-ethoxy-quinoline-ethyl-cyanin-iodide.  
 $\Sigma_a$  = extinction-coefficient of 1 in 200,000 alcohol.  
 $\Sigma_w$  = " " 1 in 100,000 water, 1 per cent. caustic potash.  
 $D_a$  = density of plate sensitised in 1 in 100,000 water.

Wave-length.	$\Sigma_a$	$\Sigma_w$	$D_a$
490	.031	—	.415
500	.051	.157	.432
510	.125	.230	.630
520	.219	.342	.769
525	.275	.419	—
530	.339	.484	.899
535	.400	.492	—
540	.416	.426	.967
545	.418	.370	—
550	.420	.314	.965
555	.480	.329	—
560	.637	.345	.821
565	.711	.392	—
570	.842	.420	.870
575	.901	.429	—
580	.855	.376	.947
585	.669	—	—
590	.506	.223	.942
595	—	—	—
600	.240	.108	.806
610	.104	—	.603
620	—	—	.264
630	—	—	.087
Maxima { $\beta$	545	532	545
{ $\alpha$	575	575	585

See curve 2.

a roll  
sea

TABLE 12.

No. 5. *p*. ethoxy-quinaldine-*p*-methoxy-quinoline-ethyl-cyanin-iodide. $D_a$  = density of plate sensitised in 1 in 100,000 water. $D_b$  = " " " " " 25  
per cent. alcohol.

Wave-length.	$\lambda_a$	$\lambda_b$	$D_a$	$D_b$
490 $\mu\mu$	·107	·245	·530	·248
500	·126	·377	·707	·261
510	·149	·475	·844	·322
520	·206	·676	·930	·358
525	·272	·889	—	—
530	·340	1·129	1·034	·434
535	·412	1·170	—	—
540	·435	1·053	1·100	·471
545	·447	·878	—	—
550	·439	·744	1·079	·449
555	·452	·667	—	—
560	·526	·675	·850	·349
565	·638	·728	—	—
570	·802	·772	·872	·290
575	·950	·851	—	—
580	·984	·825	1·015	·357
585	·885	·721	—	—
590	·697	·558	1·034	·473
595	·480	·459	—	—
600	·330	·341	·836	·480
610	·142	·199	·672	·408
620	·067	·145	·387	·225
630	—	—	·213	·055
640	—	—	·061	—
Maxima $\left\{ \begin{array}{l} \beta \\ \alpha \end{array} \right.$	545 580	535 575	540 590	540 595

See curve 3.

It will be seen that the addition of alcohol has lessened the sensitising power very considerably.

TABLE 13.

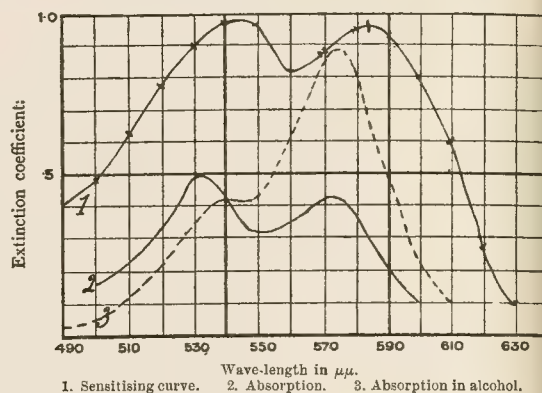
No. 8. *m*. tolu-quinaldine-quinoline-ethyl-cyanin-iodide  $D_a$ .No. 9. *p*. methoxy-quinaldine-*p*-methoxy-quinoline  $D_b$ .

Wave-length.	$\lambda_a$	$D_a$	$\lambda_b$	$D_b$
490 $\mu\mu$	—	·301	—	·299
500	—	·415	—	·392
510	·201	·662	·081	·500
520	·364	·713	·137	·581
525	·460	—	·174	—
530	·515	·840	·231	·647
535	·536	—	·306	—
540	·504	·841	·363	·711
545	·520	—	·368	—
550	·572	·738	·385	·792
555	·712	—	·388	—
560	·936	·702	·403	·800
565	1·129	—	·375	—
570	1·213	·785	·459	·695
575	1·122	—	·582	—
580	·875	·843	·682	·642
585	—	—	·720	—
590	·440	·702	·630	·727
595	—	—	·495	—
600	·141	·516	·353	·746
610	—	·368	·116	·673
620	—	·256	—	·517
630	—	·169	—	·303
Maxima $\left\{ \begin{array}{l} \beta \\ \alpha \end{array} \right.$	535 570	535 580	557 585	560 595

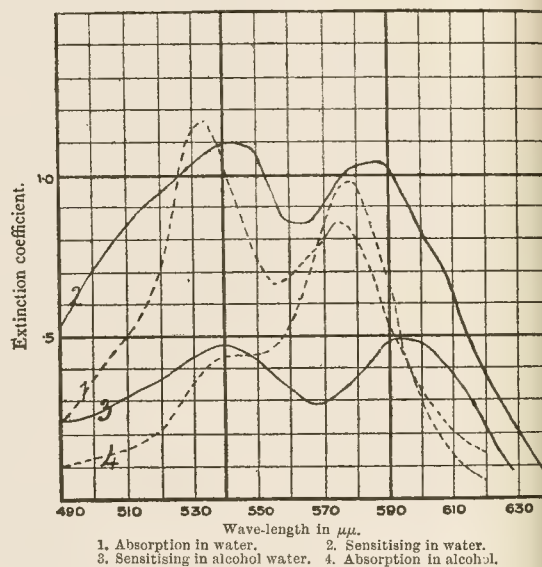
See curve 4

See curve 5.

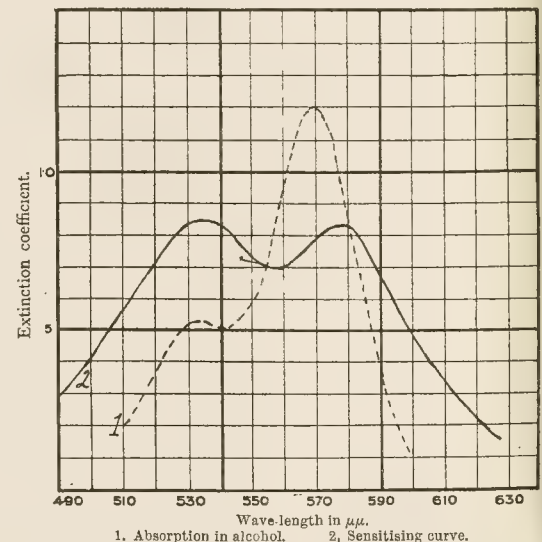
CURVE 2.



CURVE 3.

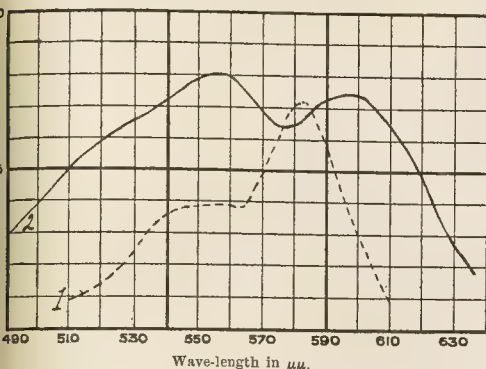


CURVE 4.





CURVE 5.



1. Absorption in alcohol. 2. Sensitising curve.

ulating all the data for the maxima obtained in the absorption sensitising curves we have

TABLE 14.

	Water.	Alcohol.	Sensitising.
$\beta$	532	545	545
$\alpha$	575	575	580
$\beta$	535	540	540
$\alpha$	575	575	585
$\beta$	535	545	540
$\alpha$	575	580	590
$\beta$	—	540	540
$\alpha$	—	580	590
$\beta$	—	535	535
$\alpha$	—	570	585
$\beta$	—	537	560
$\alpha$	—	585	595
$\beta$	—	535	540
$\alpha$	—	565	580

quite evident from this and from the curves that the sensitising depend directly upon the maxima in the absorption spectra of the dyes. The bands are shifted some 10 to 15  $\mu$ m toward the compared with the aqueous absorption spectrum, the  $\alpha$  band of the red being in general shifted slightly more than the  $\beta$ . Compared with the alcoholic spectrum, the  $\beta$  band is not shifted; the  $\alpha$  band shifted some 10  $\mu$ m. An attempt to measure spectrophotometrically the absorption of a silver bromide film stained with one of the dyes failed owing to the rapid bleaching of the dye. The data are in good agreement with the application of Kundt's method and show that in this series the sensitising maxima can be predicted from the absorption spectra, and that structural changes will affect the absorption and sensitising spectra in a similar manner. Of course, leaves the question as to the physical basis of Kundt's method.\*

### Theories of Sensitising.

A complete theory of sensitising should give an explanation of two phenomena (a) the taking up of the dye; (b) the photochemical action in virtue of which the halide becomes developable. As in the first, the problem is part of the general one of dyeing. It has been shown that the dye must stain the halide grain, and that which vigorously sensitise are all so-called substantive dyes. This position has been further strengthened by the investigations of Hübner [Eder's Jahrb. f. phot., 1894, p. 189, and 1903, p. 128] and K. Kieser ("Dissertation," Freiburg i. B., 1904, "Eder's Jahrb. f. phot.," 1905, p. 334); just as in ordinary dyeing it is difficult to explain all the facts with either a purely chemical or a purely physical theory of the process. Linder and Picton ("Journal of Chem. Soc.

Trans.," 1905, 88, 1,933) found that in simple substantive dyeing there were two stages. In the first or "coagulation" stage chemical processes occur (*loc. cit.*, p. 1,914) which exhaust themselves before the second or "colour absorption" stage commences. In the latter the dye is absorbed as a whole, and the evidence points to a physical attraction between the dye and the coagulant, which may be due to the electric attraction of oppositely charged colloids. A considerable amount of work in recent years has gone to show that a large number of dyes exist in solution in the colloidal state. The writer is at present engaged on a continuation of the present research concerning the solution state of dyes and its relation to their absorptive and other properties. It should be pointed out that the experiments on the conditions of sensitising detailed here are in agreement with the view that the dyeing phase of "sensitising" is a process of adsorption. As regards the optical or photo-chemical action of sensitisers, our knowledge is very uncertain. A former theory connecting sensitising with fluorescence was discredited by Eder's researches. A modified form of this has been recently suggested by J. Stark ("Phys. Zeitschr.," 1907, 8, 249), based on the idea of "latent" fluorescence. It has been shown that fluorescence in general is a characteristic property of molecules of definite composition containing a fluorophor group (R. Meyer, "Zeit. physik. Chem.," 1897, 24, 468). Stark ("Physik. Zeitschr.," 1907, 8, 81) showed that benzene and simple benzene derivatives possessed ultra-violet fluorescence, and that the benzene nucleus is in itself a fluorophor, some form of fluorescence being always associated with bodies giving a banded spectrum of absorption. It is maintained by Nichols and Merritt (Nichols, "Jahrb. f. Elektronik," 1905, 2, 149) that the fluorescent spectrum arises from absorption in the band spectrum, its distribution depending on the superposition of absorption and emission. Every wave-length in the fluorescent spectrum is excited by radiation, whether of longer or shorter period. Stark terms "latent" fluorescence such which is so weak that it is hidden by reabsorption. Suppose now on the single molecule or smallest aggregates of a substance absorbing and reacting to blue and violet rays—AgBr, for instance—a few molecules of a substance possessing blue or violet fluorescence are fixed. Radiations of such period that they are only slightly absorbed by the AgBr, but are strongly absorbed by the dye, give rise to the whole fluorescent and so to the blue and violet fluorescence which chemically affects the silver bromide. This theory cannot be considered as completely proved yet, although Stark claims to have proved the existence of a blue or violet fluorescence in the case of the sensitisers erythrosine and cyanine. Admitting the comparative feebleness of this, it becomes necessary, owing to the effects of superposed absorption, to work with very thin layers. Stark considered that he had obtained an effect on the photographic plate, using a quartz spectrograph. It has appeared possible to the author that examination in an ultramicroscope by Zsigmondy and Siedentopf's second method, with a fluorescent ocular, might yield some results, and experiments on this are in progress.

The work detailed in the foregoing was carried out during the winter and summer semesters of 1906-1907 at the Physical Institute of the University of Marburg, and the writer desires to express his thanks to the authorities for the facilities afforded him, and in particular to the Director, Prof. Richarz, and to Prof. Karl Schaum for their continuous interest and advice. S. E. SHEPPARD.

TELEGRAPHIC PHOTOGRAPHY.—Inventors of the telegraphic transmission of photographs, such as Korn and Belin, are to see the fruit of their labours, not only in the physical or industrial field, as witness the following from our contemporary, "Great Thoughts." "This scientific wonder suggests easily the very reasonable probability of not only transmitting, but preserving, the likeness of human identity, or, rather, spiritual entity, despite space, time, or other human limitation. Spiritual entity is pervasive, and, as widely as it may transmit itself, or be transmitted, it does not lose its recognisable, inherent traits of conscious character as emphasised by the life possessed, expressive in both thought and action. In other words, the soul expressions of our complex nature are recognisable anywhere. Whether a man speak our language or is of our nation or not, that he is or is not a Christian can always be as clearly perceived as are the lineaments of a countenance with which we are familiar, whether we see it in London, New York, Paris, or in our own home."

\* This work was finished. A. Byk ("Zeitschr. physik. Chem.," 62, 1908, 487) in a paper on the photo-chemical re-action, comes to the conclusion that the ion and not the absorption is the determining factor, this applying also for the sensitising action of dyes. According to this theory, with changing wave-length the action increases with increasing coefficient of refraction, not with the amount of absorption. Many of the dyes used show anomalous dispersion (Vogel, 1874, 7, 978), which is in agreement with his position.

## Photo-Mechanical Notes.

### Half-Tone Screens.

A screen specially intended for the preparation of half-tones to be printed on news paper or other coarse paper has been patented by Carlo Jacobi, 470, Campo St. Andrea, Venice. The screen contains intersecting sets of parallel opaque lines having greater or less thickness. According to the specification, No. 5,109, 1908, fig. 1 represents a screen in which is inserted among the black wide lines *a*, in the transparent space, only one thin line *b*. In fig. 2 in the

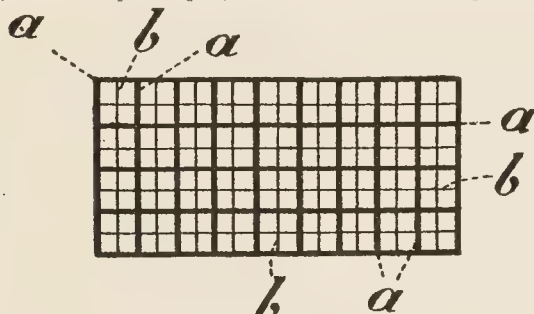


Fig. 1.

screen, between the black wide lines *a*, are inserted two light thin lines *b*<sup>1</sup> *b*<sup>2</sup>.

In both cases the thin lines and their crossings prevent to only a small extent the passage of the light through the luminous parts, leaving reproduced on the negative, in the form of dots, only the crossing of the wide lines *a*, whilst in the obscure parts of the original, where the light is less intense, the crossing of the thin lines *b* and *b*<sup>1</sup>, *b*<sup>2</sup> with the wide lines *a* appears, and the light not being intense enough to surmount the crossing of the wide lines with the thin ones makes the wide lines appear of double width.

Supposing then that in the screen there are, for instance, twenty

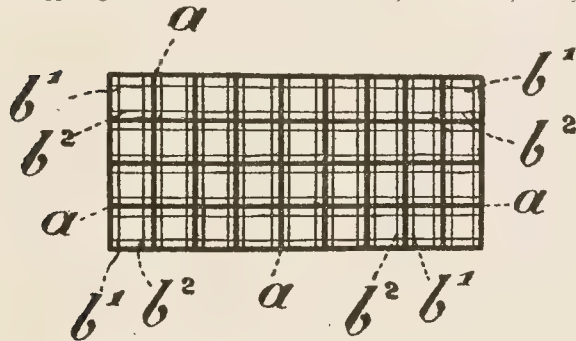


Fig. 2.

wide lines *a* for each centimetre, with twenty thin lines *b* inserted, an effect of reproduction will be obtained as if we had used a screen, having in the obscure parts lines of double the width of those in the luminous parts, and so the greatest possible desired effect in light and shade will be obtained.

Using the screen with only one thin line (fig. 1) inserted, regulating carefully the distance of the screen from the sensitive plate, there will be obtained at the same time the variation in the points of intersection and, consequently, a greater variety of mezzo-tints.

### PHOTO-MECHANICAL PATENTS.

The following patent has been applied for:—

**ETCHED PLATES.**—No. 17,480. Improvements in process work for producing etched plates and other like objects for printing and other like process work. Robert Bain and Robert Davos Bain, 5, Henrietta Street, Covent Garden, London, W.C.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications have been received between August and August 22:—

**DISPLAY OF PHOTOGRAPHS.**—No. 17,285. Improvement arranged for the representation of photographs. Eduard Otto Zechm 56, Middleton Square, London, E.C.

**COLOUR SCREEN PLATES.**—No. 17,309. Improvements in colour screen plates and their uses. Henry William Hamblin Palmer, 43, Martin's Lane, London, W.C.

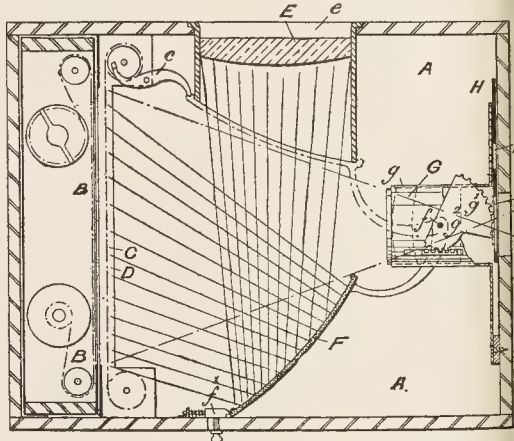
**CAMERAS.**—No. 17,624. Improvements in photographic cameras. Optische Anstalt C.P. Goerz Akt. Ges., 31, Bedford Street, Strand, London, W.C.

### COMPLETE SPECIFICATIONS ACCEPTED.

These specifications are obtainable, price 8d. each, post free, from Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

**REFLEX CAMERAS.**—No. 15,199. 1907. The invention relates to a type of camera in which the focussing of the image up to the moment of exposure is done by means of a mirror in the lower of the camera. This mirror reflects the image cast by the lens on an opaque focussing screen placed directly opposite the lens. The image, reflected in the mirror, is examined through a lens placed in the top or other part of the camera. The principle of the apparatus will be understood by instancing one of the twelve figures referred to by the patentee.

In the figure the camera is of the ordinary box type, constructed to receive a roll-film B and with a focal-plane shutter C. The surface of the blind of the shutter C serves for the opaque focussing screen D, it being made with a white surface to receive the picture. In the top a large observation opening *e* is formed, fitted with a viewing screen E, and in the interior a concave mirror F is placed in such a position that the picture on the focussing screen is reflected therein and re-focussed into the plane of the opening into a plane between it and the eye of the operator, so that the image may be viewed upon, or apparently upon, the viewing screen E without approaching the eye to the opening. The mirror



is pivoted to swing across the field of the lens G and close the observation opening *e*, in which is set the viewing screen E. As much as the opaque focussing screen D is an appreciable distance in front of the focal-plane in which the sensitive surface is placed, it is necessary to adjust the lens G to bring the picture which has been focussed upon the opaque focussing screen D into focus upon the sensitive surface at B. To accomplish this upward movement of the mirror F to close the aperture of the viewing screen E rotates a wheel or segment *g*<sup>2</sup> to rack back the lens G the desired distance. The mirror F is pivoted upon a point on the side of the lens tube *g*. In front of the lens a diaphragm



H with two apertures or "stops"  $h$  is mounted to be moved as the lens simultaneously with its to and fro movement by a wheel segment  $g^1$  to present a large aperture during focusing and a smaller aperture during the exposure of the sensitive surface at B. The mirror F is held in position by a catch  $f^1$ , and moved upwards by a spring. It is necessary that the several movable parts of the camera should operate in succession after one another, and that the lens should be adjusted and light excluded before the observation opening  $e$  before the blind C moves to expose the sensitive surface B. To effect this the mirror F is held in position against the tension of a spring by a catch  $f^1$ , and the mirror C is held by a detent or catch  $c$  in the usual way. When the catch  $f^1$  releases the mirror F the spring causes the latter to move into the position to close the aperture of the auxiliary focusing screen E, this movement being effected simultaneously with the wheel segments racking back the lens G and the diaphragm H, and when the aperture is closed the mirror strikes the blind catch and releases the blind C for the purpose of exposing the sensitive surface B. John Edward Atkinson, Altrincham, Cheshire.

**BOOK-MARKERS.**—No. 24. 1907. The invention relates to book-markers, and has for its object a book-marker adapted to be used as a photographic mount or for other purposes. In carrying out the invention a mount of any suitable shape is provided with a slot, into which a photograph or slip may be inserted from the edge. A suitable method of making such a combined book-marker and photographic mount is to shape a piece of cardboard, or other substance, and then, by means of an adhesive or mucilage, fasten a plain or fancy cover thereon, this cover having an opening behind which the photograph will be located and secured to the base or ground portion at one side opposite the opening to allow of the photograph being slipped in. Slits may then be provided to form a tongue for clipping a page in the way, or the tongue may be formed before the cover is secured to the base. Howard Maryat, 28, Hatton Garden, London.

Following complete specification is open to inspection before the Patent Office.

**SCREEN-PLATES.**—No. 17,065. Method of producing polymeric screens for the production of photographs in natural colours. Szczepanik.

## New Trade Dames.

—No. 304,685. Photographic cameras and apparatus in Class 8. Houghtons, Ltd., 88-89, High Holborn, London.

—No. 304,958. Prepared paper for photographic purposes. Limited, Britannia Works, Roden Street, Ilford, London, E.

**NON-STRESS GASLIGHT PAPER.**—The Birmingham Photographic Co. state that they have now extended the Nonstress quality of their paper to include gaslight also, which will be sold as "Nonstress."

**DAVIS AND SONS**, of Lancaster, had the honour conferred on them last week of being summoned to Abbeystead House to take the last of the Prince of Wales and members of the Earl of Devon party. Copies of the photographs were sent to the Prince and since then Messrs. Davis have received a letter from Sir John Lubbock, the Prince's equerry, which says: "The Prince of Wales has been very kind to say that he thinks the groups are very good."

**GRAPH-PHOTOGRAPH.**—According to the "Daily Express," a Swedish engineer, named Sven Berglund, has constructed an apparatus, the graphophone, through which the problem of reproducing human voice perfectly clearly without the grating sound of a gramophone is said to be solved. The chief feature of the new apparatus is that light and photographic plates instead of the usual gramophone records and pins. The apparatus is particularly adaptable for a combination of speech and photography, as the pictures, as well as music or speech, can be photographed simultaneously.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Stripping Negatives Without Hydrofluoric Acid.

A stripping method that has advantages over those in general use is the following (writes Mr. Edgar Simpson, in the "Photographic Monthly" for September):—The negative to be stripped is immersed for from ten to fifteen minutes in A, water, 100 ccs.; bisulphite of soda at 40 deg. Beaume, 25 ccs. It is then rinsed under the tap or left for fifteen to twenty minutes in the following solution:—B, water, 100 ccs.; formalin (40 per cent.), 15 to 20 ccs.; carbonate of soda, 5 grammes. (This should be filtered before use.) Rinse for a few minutes and rub the face of the negative lightly with wet sponge or cotton wool. Leave in the rack to dry.

When perfectly dry, cut round the negative about an eighth inch from the border. Lift up one corner with a penknife, and the film can be easily peeled off and is ready to be printed from.

One side of the film is bright and the other dull. There is no possibility of the image being distorted in any way. It remains in its original size exactly, and remains flat. I may note that all my experiments were made on negatives which had been fixed in the following:—Water, 1,000 ccs.; hypo, 250 grammes; sulphite of soda, 20 grammes. After complete dissolution add: Sulphuric acid, 5 ccs., stirring all the time. This should not be used until the solution has cleared.

### Carbon Tissue as a Backing for Plates.

Mr. F. C. Davis, writing in "The Amateur Photographer and Photographic News" for September 1, on backing plates, says:—"Lately I have been using one which hits the mark for economy, efficiency, ease of application and removal, and although by no means unknown it seems rarely used. It consists of black carbon tissue and it is immaterial whether it is sensitive or insensitive. My method is to cut the tissue about one-eighth of an inch smaller than the plate to be backed, soak it for five minutes in cold water, and then place between sheets of fluffless blotting paper under a press (anything heavy will do) for a few minutes. By this time it should be as dry as is necessary, for it must still be quite limp. Take the tissue to the dark room, then with a finger-tip and very little glycerine rub all over the glass side of the plate to be backed, which should be held by the edges to avoid being contaminated; place the tissue in position (back side to the glass), and gently rub down with a clean handkerchief; it sticks instantly, and you have a most efficient backing, giving great freedom in use on strongly lighted subjects. Personally I have obtained better results with this than with any other form of backing. To remove the tissue before developing you have only to raise one corner and it strips off easily, and can be used over and over again, following the same method. If it is not to be used at once it should be thoroughly dried and stored till wanted. Perhaps its great charm, next to efficiency, is its cleanliness."

### Waistcoat-Pocket Cameras.

It is not reasonable to suppose (says a writer in "Photography and Focus" for September 1) that these little cameras will ever supplant the big ones, which enable an image of a fair size to be seen and arranged on the focussing screen; but if they will not supplant them, at least they supplement them. By pocket camera, we do not mean, in this connection, any camera that can be got into a pocket, but the camera which is so truly portable that it can be carried *always*, with an adequate supply of plates, taking up no more room in the pocket than, say, a cigar case. Only a few of the so-called pocket cameras can be regarded as strictly within these limits, and we do not wish to decry the many excellent patterns which lie outside them. They, too, have their uses. But for the waistcoat-pocket cameras there is a fine field of utility, and one which they alone can occupy.

For the last two years the writer has carried, almost without exception, such a camera and half-a-dozen small plates. It occupies no serious share of his pocket room, and no one would suspect that he had an efficient means of making a 15 by 12 photograph concealed about his person. Yet lying before him, as he writes, are several enlargements of that size, which, in point of detail, leave nothing to be desired yet which had their origin in the tiny

apparatus just mentioned. They record pictures which certainly would not have been obtained but for the pocket camera, for they were all taken at times when the use of anything larger was not possible.

## New Books.

"Zelluloid und seine Verarbeitung." By Louis Edgar Andés. Leipzig: A. Hartleben. M. 6.80.

This treatise on a substance of great importance in photography comes from the pen of a writer whose name is known as an expert in this branch of technology. It is devoted for the most part to the many uses of celluloid in the manufacture of articles of fancy ware, decoration, etc., but the earlier parts of the volume contain useful chapters on the properties of celluloid and the behaviour of the pure substance towards various solvents and other reagents. Obviously in a book on a trade which relies largely on the preservation of its methods secret, one cannot expect to find anything like a full description of manufacturing processes, and therefore in the section on photographic celluloid films it is not surprising to see that only one type of machine is described, evidently from a patent specification. A chapter deals with the use of celluloid as the basis of mirrors and a silvering formula of the ammonio-silver type is recommended. The book contains formulae for the making of celluloid varnishes, and in general, although its subject matter is not throughout of a highly informative character, it is perhaps the best technical treatise on celluloid which can be obtained.

"Dreifarbige Photographie nach der Natur." Second edition. By Dr. A. Miethe. Halle a/S: W. Knapp. M. 2.50.

This is a revised edition of the text-book, issued 1904, in which Dr. Miethe described the methods employed by him for three-colour photography by the additive process, using the then newly introduced ethyl-red. A good many new sensitisers of the isocyanine series have been introduced since then, but Dr. Miethe still declares in favour of the first of the series. In other points, too, the advice given for the production of projections in colour by the additive method differs only in reference to minor details. The volume contains as a frontispiece a reproduction in colours from a set of negatives obtained in one-tenth of a second on ethyl-red bathed plates. The subject is a suburban scene, photographed by Dr. Miethe from a balloon at the height of 450 metres.

WOOD CARVINGS.—Those of our readers who make a hobby of wood-carving should be glad to learn of a new series of designs now commencing publication monthly at one shilling per issue. The designs are by Mr. W. T. Whitehead, artist-draughtsman, of 10-11, Fetter Lane, London, E.C., and the large lithographed sheet contains eight excellently varied shaded drawings for the use of the wood-carver. In beauty of classical design and fitness for their special purpose we know of nothing better. The portfolio is published by the designer at the above address.

## New Apparatus, &c.

The "Biermann" Exposure Indicator. Sold by the Arthur Cox Illustrating Co., Ltd., 63 and 64, Ludgate Hill, Birmingham.

This device is a card calculator, about the size of a quarter-plate, the use of which is supplementary to that of the Watkins or Wynne meter; that is to say, Mr. Biermann bases his measurements on the darkening of the Watkins or Wynne actinometer paper, but in calculating the exposure from the latter he makes allowances for factors which do not usually enter into the calculations made on the lines of the ordinary meters. The chief addition in this respect is the scale relating to variations in the exposure due to the type of lens and of shutter. Mr. Biermann certainly adds to exactness in working when he enables one to allow for the difference in light given by focal plane shutters and those of the less efficient type used on or in the lens. This factor he combines with that for the lens, and therefore we cannot separately ascertain the allowance which is made for each separately. And this we would rather like to do, inasmuch as we see it stated in some notes which accompany the meter that "the modern large anastigmats are faster than the

older types of rapid rectilinear lenses." This, of course, we imply the use of both at the same focal aperture, but we are to know what figures the alleged increased speed of the modern is based upon. Messrs. Hurter and Driffield, it will be remembered in the "Actinograph," provided a similar adjustment for double, and triplet lenses, which latter they placed slower three (for the same aperture) on account of the greater number of reflecting surfaces. As many of the recent anastigmats are of the triplet type, and as others are composed of very thick glass data on which their relatively greater rapidity is based should be of interest.

The design of the calculator allows of a great range of exposure being given—from 60 to 1-1500 seconds or minutes, according to the reading of the actinometer. The scale of subjects is also a wide one, ranging from clouds to dark interiors, and here again the position of the shutter lens scale mentioned above is usefully employed to make allowance for the longer exposure necessitated in weak light. An inset table is also provided to allow for the extra exposure required by the greater focal extension of the lens when photographing distant objects. A supplementary table is also given, applying the readings of the exposures in weak lights to the exposure of Autochrome plates, which should be evident that the "Indicator" has been very carefully thought out, and is certainly a good deal more than a variety of other exposure devices. While it may not be the final method of dealing with admittedly difficult variations, it is, nevertheless, a very valuable addition to the outfit of the painstaking photographer. Its price is 1s. 6d.

## New Materials, &c.

Rectangular Lantern Slide Masks and Square Gauge. Made by Roffey and Clark, 12, High Street, Croydon.

Everybody who has had much lantern slide masking to do knows that there is nothing more certain than that it is almost impossible to find a series of masks which will correspond to every lantern picture made by reduction, or, for the matter of it, to the best select that produced by contact. For this reason the method of building up the mask by the use of opaque strips of paper with a clean edge is by far the most convenient and efficient method of slide masking, and one which we ourselves have used regularly at least fifteen years, at first cutting the masking strips out of the ordinary black needle-paper of the stationer. It has now been left to Messrs. Roffey and Clark to issue a new form of masking strips, which, so far as we can see, admit of no further improvement. It consists of a paper white on one side and black on the other, this latter surface being thin and with an adhesive. The black surface, therefore, has only to be moistened and laid in position on the slide when it firmly adheres to a varnished or unvarnished surface; the white upper surface of the paper may then be used for memoranda or the blank surface usually employed. Messrs. Roffey and Clark also supply the strips as a card, ruled into squares, on which the lantern slide is laid when masking, the lines serving as an effective means of indicating the proper right-angled form of mask. The strips are conveniently packed each in a separate envelope, with the width marked thereon, and the whole outfit may be recommended as a lantern slide makers as the best available means of proceeding with the least labour what is usually an uncongenial task. The price of the outfit, containing strips sufficient for one dozen slides, is 10d., post free 1s.

"Wratten" X-Ray Plates. Made by Wratten and Wainwright, Croydon, Surrey.

In this plate Messrs. Wratten and Wainwright have embodied the results of improvements in emulsions for X-ray work, made as a result of experiments in their laboratory, and with the object of securing rapidity and density without the necessity of a very thick film of precipitate. The plate depends on the use of a heavy metallic salt which a precipitate can be formed in the emulsion along with silver, which precipitate has the property, not only of stopping the X-ray and transferring it by secondary radiation to the neighbouring silver particles, but of greatly lessening the amount of the X-ray radiation in the plate, so that the resultant plates are not only fast and capable of giving great density and contrast, but also of appreciably sharper definition in fine detail than can be



an emulsion made of silver bromide only. The precipitate is largely removed in the fixing bath, and has the effect of giving the finished negative a whitish opalescent appearance when looked at, and a yellowish appearance when looked through. It does no harm either for visual or printing purposes, nor is it affected by light, so that it does not lessen the permanence of the negative; it can be completely removed if desired by a bath of weak acid during washing. As regards convenience in use, the new plate also represents an advance, for each is packed in a separate wrapping, on the outside of which the glass side of the plate is indicated. This has been very discovering a make of soft white paper which, it is found, can be laid in contact with the film of the plate without injury, and the result to the X-ray photographer is that he can take each plate from its box and use it without going into the dark-room until it is necessary to develop. The plates are issued in the following sizes and at the following prices:—Half-plates, 6½in. by 4½in. 4s. 8d. per dozen; whole-plates, 8½in. by 6½in., 8s. 6d. per dozen; 10in. by 8in., 10s. 6d. per dozen; 12in. by 10in., 20s. per dozen; 15in. by 12in., 25s. per dozen.

### CATALOGUES AND TRADE NOTICES.

**DALLMEYER CAMERAS.**—A neat list of the cameras of substantial build, such as are necessary to do justice to the modern anastigmatic field and large aperture, has been issued by Messrs. Dallmeyer, Ltd. The "Correspondent's" camera is particularly worthy of notice. The list is obtainable free from 25, Newman Street, Oxford Street, W.

**"SERVICE" SALE.**—A list running to thirty-six pages has been issued by the Service Company, 292-293, High Holborn, London, W.C., in reference to the clearance sale of photographic apparatus and other optical goods. The list includes a great variety of apparatus.

**SEPTEMBER "CITY SALE" BARGAIN LIST.**—The City Sale and Exchange send us from their depot at 54, Lime Street, London, E.C., a large 10-page list of second-hand apparatus in the way of lenses, and field cameras, and enlargers, which they will be pleased to send on application.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

#### SATURDAY, SEPTEMBER 5.

North Middlesex Photographic Society. Outing to Pitsea and Benfleet.  
 Wandsworth Photographic Society. Excursion to the Wrens Nest, Dudley.  
 North Suburban Photographic Society. Excursion to Bookham. P. C. Cornford.  
 Rugby Photographic Society. Excursion to Stanford. C. C. G. Cooke.  
 Chelsea and District Photographic Society. Excursion to Stanmore.  
 Manchester Amateur Photographic Society. Ramble to the Goyt Valley.  
 Leeds Camera Club. Visit of Hull Photographic Society.

#### MONDAY, SEPTEMBER 7.

South London Photographic Society. Conversazione and Opening of Winter Session. Monthly Competition. Lantern Slides.  
 Southampton Camera Club. "Hints on Preparation of Exhibition Work, with Examples." A. E. Henley.

#### TUESDAY, SEPTEMBER 8.

Royal Photographic Society. Ordinary Meeting for the Election of Members. Autochrome Slides will be Shown.  
 Manchester Amateur Photographic Society. "The Subtle Differences Between Good Slides and Fine Slides." James Shaw.

#### WEDNESDAY, SEPTEMBER 9.

North Middlesex Photographic Society. "How to Work the Optical Lantern." H. Stuart.  
 Southampton Camera Club. Ramble to Romsey and its Abbey. S. G. Kimber.

#### THURSDAY, SEPTEMBER 10.

Wandsworth Photographic Society. "Carbon Printing." Demonstrated. R. J. Fumell.

MR. ORMISTON SMITH, whose cinematographic work has delighted many Alhambra audiences, on ascending the Jungfrau last week in company with three guides, found four Germans, including two young women, exhausted and half-frozen near the summit. Restoratives having been applied, the Germans explained that they had lost their way in the fog, being without guides, and had spent two days in holes dug in the ice for warmth. The guides brought down the Germans to the Concordia hut, whence, after a long rest, they descended to the hospital at Grindelwald. Without the aid of the Englishman's party all would have been frozen to death in a few more hours.

## Commercial & Legal Intelligence.

**SERIKON, LTD.** (Photographic Goods Manufacturers, Whetstone).—A 5 per cent. mortgage dated August 5, 1908, to secure £400 charged on land and erections, at Wickford, has been registered. Holder—R. A. McQuitty, 34, Fenchurch Street, E.C.

### NEW COMPANIES.

**WILLIAMSON, DRESSLER AND Co., LTD.**—Capital, 1,000 in £1 shares. To acquire the business of a dealer in cinematograph or other films carried on at 27, Cecil Court, Charing Cross Road, W.C., as "Williamson and Company," to adopt an agreement with J. Williamson, and to carry on the business of manufacturers of and dealers in cinematograph, photographic and other films, optical and magic lanterns, lantern slides and photographic and optical goods of all kinds, etc. The first subscribers are: J. Williamson, 11, Wilbury Villas, Hove, film manufacturer; G. F. Bauerdorf, 17, Leinster Gardens, S.W.; A. J. Williamson, 11, Wilbury Villas, Hove; A. H. Wibling, 6, Woodside Avenue, Brighton; E. F. Stimson, Aldersmead, Tooting Bec Common, S.W.; F. G. Thomas, 63, Elgin Road, Croydon; and W. N. Kearsley, 173, Hanbury Street, Mile End, E. No initial public issue. The first directors are:—J. Williamson and G. F. Bauerdorf (both permanent). Qualification, £100. Registered office:—27, Cecil Court, Charing Cross Road, W.C.

## News and Notes.

**"SOUTHSEA AND PORTSMOUTH AT A GLANCE."**—Under this title the municipality of Portsmouth have issued a substantial volume, very fully illustrated with photographs, and detailing the attractions of the neighbourhood for temporary and permanent residence. The book is obtainable free from the Portsmouth Corporation.

**DAMAGE BY FIRE.**—During a fire which broke out last week in an office block at 22 to 24, Lombard Street, Belfast, the premises occupied by Mr. A. Black sustained considerable damage.

**AN ANTIPODEAN ECHO OF AMALGAMATION.**—*"Sharland's New Zealand Photographer,"* in announcing the amalgamation of our weekly contemporaries, earns our gratitude for its note of sympathy with us in our celibate loneliness. It writes:—

*The Wail of the "B.J."*—All the other weeklies having mated  
 "One for thou and one for thee,  
 Never, oh never! a one for me."

**CANVASSING AMENITIES.**—Last week a sequel to a row which flavoured of trade jealousies was heard in Portobello Police Court, when Mark Chisholm, a photographer's canvasser, of 3, Baxter's Place, Edinburgh, appeared on a charge of assaulting a rival canvasser named John Foley, who carried on business next door to accused in Bath Street, Portobello. He pleaded not guilty, and evidence was led. It was stated that Chisholm went to Foley's studio and interfered with him. He tore some photographs out of his hand and struck him two blows in the face, to the effusion of blood. Accused denied these allegations, and stated that two young ladies came into his studio and informed him that the man next door had said that if they got their photographs taken at Chisholm's they would not get them for two or three months, perhaps not then. He thereupon went into Foley and asked him why he was interfering with his business. Foley told him to mind his own business, and struck him a blow on the body. Chisholm was convicted about eleven months ago for assaulting a rival across the street. The charge was found proven, and he was fined £2, with the alternative of twenty days' imprisonment.

**SUICIDE OF A CARAVAN PHOTOGRAPHER.**—An inquest was held at Newhall, near Burton-on-Trent, relative to the death of William Spilsbury, a travelling photographer, whose body was found in his caravan. It was stated that the body, fully dressed, was lying on the bed in the caravan at the time the discovery was made, and beside it stood a cup containing a small quantity of cyanide of potassium. The deceased's housekeeper, Florence Lauriston, said that some time previously the deceased mixed a cup of poison and suggested that they should die together. "Suicide by poison during temporary insanity" was the jury's verdict. Spilsbury, it is stated, was a native

the Potteries, and had a flourishing business in Hanley some years ago. Latterly he had travelled, making Swadlincote and Newhall his headquarters.

**AN EARLY EXAMPLE OF TYPOGRAPHY.**—According to a "Times" correspondent, several interesting archaeological discoveries were communicated to the Academy of Inscriptions at its last meeting. The most important was a clay disc, 16 centimetres (nearly 6½ in. in diameter), having on its two faces over 120 pictorial signs representing men, animals, trees, and the like. This discovery was made by the Italian investigators at present working at Phætos, in Crete. According to M. Salomon Reinach, the remarkable thing about the disc is that the signs are not engraved but imprinted by means of punches, and may therefore be regarded as a first attempt at typography, about 4,000 years ago.

**THE KORN SYSTEM OF PHOTO-TELEGRAPHY IN DENMARK.**—Our Danish contemporary, "Ingeniøren," contains a report of a lecture by Professor Korn, of Munich, in connection with the first apparatus being installed in Denmark for the daily paper, "Politiken." The apparatus described was similar to the installation recently experimented with at the offices of the "Daily Mirror" in London, and it is unnecessary to repeat the details of the arrangement for employing the variations in the resistance of selenium under the influence of light to attain the desired result. After the lecture Professor Korn showed the apparatus that is to be used by the daily paper, "Politiken," in Copenhagen, and "Dagens Nyheter," in Stockholm. A photograph was telegraphed from the one apparatus to the other, and after that an attempt was made to receive a photograph sent from Berlin. This was, however, not successful, because of some fault on the circuit by means of which the current from Berlin was considerably weakened. Professor Korn, however, claims to have sent photographs successfully over much greater distances, but it appears that mishaps like this will always be liable to take place as long as the circuits used are not especially arranged for the process.

**PHOTOGRAPHIC TRADE IN BAHIA.**—According to a report on the trade of Bahia (Brazil), which has just been issued by the Foreign Office, photographic appliances command a considerable sale at that city. At the present time the various appliances in question sold—cameras, lenses, plates, printing papers, etc., are supplied by the United States, by Germany, and by France.

## Correspondence.

- \**\* Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*
- \**\* We do not undertake responsibility for the opinions expressed by our correspondents.*

### THE R.P.S. FELLOWSHIP FOR HON. SECRETARIES.

To the Editors.

Gentlemen,—I notice in your correspondence columns this week a letter from a correspondent who is evidently much in favour of the Fellowship of the R.P.S. being granted to hon. secretaries who, by reason of long years of service spent in the interests of their respective societies, seem to deserve some recognition of their efforts.

Whilst agreeing that services of this sort deserve recognition in some shape or form, I would ask, why on earth grant them the Fellowship of the R.P.S., when one essential condition of the bestowal of this title is that the recipient thereof shall have made some practical contribution towards the dissemination of photography? Surely it is hardly logical to contend that because a man has worked hard in order that his society might contribute towards the advancement of photography, he, personally, is deserving of the honour which is, after all, meant only for those who have done practical work in this direction. If he has contributed practically, all well and good, but I certainly fail to see otherwise why he should be honoured in this particular way. It surely would be most unfair, both to those who have already received the title and to those who may be working now in the hope of receiving it at some future time. It is, of course, well known that the office of hon. secretary to a flourishing society is no sinecure, and I quite agree with Mr. Lloyd

in thinking that this should be recognised, but I cannot help think that the conscientious hon. secretary, who had this particular honour thrust upon him on the score of his having been an ex-officer, and not necessarily a good photographer, would feel much like the recipient of a "consolation prize." Do by all means let us keep our "honours" as honours, and not cheapen the thrusting them on people who, while deserving of all credit for efforts, have no real claim to such a title as F.R.P.S.—Faithfully yours,

MURIEL DAIN.

8, Ribblesdale Road, Hornsey, London, N.  
August 23, 1908.

### THE REVERSING ACTION OF RED LIGHT.

To the Editors.

Gentlemen,—The "Ex Cathedra" note on this subject in the current issue seems to me calculated to convey the impression that the reversing action of red light is a new discovery. But I distinctly remembrance that the phenomenon was known to the photographic investigators. I fancy, though I cannot be sure, in my present isolation have not the means of assuring myself it was Herschel who first recognised this peculiar reversing action on the photographic record, of red light.

At any rate, I know that at the time of acquiring the information I placed on my agenda list—that long list of so many things which ought to have been done—a suggestion for the following experiment. Over-expose a plate, cover half of it and expose unshielded half for some time to light passing through a monochromator transmitting only the red of the spectrum. Finally, develop the plate with a view to a comparison of the gradation of the two halves. It seemed to me just possible that "red light treatment" might be useful and beneficial in cases of over-exposure as it has proved to be in smallpox convalescence.—Yours faithfully,

Stonehaven, N.B.,

DOUGLAS CARNIE

August 29.

[In regard to photographic surfaces of the Daguerreotype date is certainly true that Herschel observed that red rays exert influence opposite to that of blue rays, and his observations were confirmed by Draper, Lerebours, and Claudet (see Claudet, "Philosophical Transactions," 1847, and the "Phil. Mag.," 1848, XXXII., p. 199). Our paragraph was intended to point out that investigators have of late somewhat disregarded this phenomenon. Eds. "B.J."]

### PHOTOGRAPHING TOMBSTONES.

To the Editors.

Gentlemen,—I have just noticed the query in your issue of August 21, re "Photographing Tombstones," and as I have some difficulty to deal with some years ago, I give result of my experience. The exposure should be made when the sun is shining at a right angle to the face of the stone on which inscription appears—thus, if the inscription faces east, as is usual, the exposure should be made with the sun shining at noon. I remember that, when I took this photograph, there was a discussion on in the "Journal" with reference to that class of work. I sent a note of it, with a print, to the then Editor, who remarked on the distinctness of the lettering. I would have sent a negative, but the negative has gone the way of the "time expired." I am, yours truly,

Clare, Suffolk,

F. STORR

September 1, 1908.

**AFFILIATION OF PHOTOGRAPHIC SOCIETIES.**—A large gathering anticipated at the annual meeting of members of the affiliated societies which takes place at the New Gallery, Regent Street, the courtesy of the Royal Photographic Society, on Friday, September 18. During the evening the 1908 competition slides will be shown.

Arrangements have been made to hold a meeting of Council and district at the house of the Royal Photographic Society on Friday, September 11.

The awards made for prints made on the occasion of the outing are as follows:—First, C. H. Connolly (North London); second, F. C. Boyes (Ilford P.S.); third, J. C. Fox (Staines). The lantern slide award was gained by W. Llewellyn White (London P.S.).



# Answers to Correspondents.

matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.

respondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.

communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., Wellington Street, Strand, London, W.C.

the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street Strand, W.C., undertake the registration of copyright photographs at a charge of 7d. each photograph, to cover cost of registration fee, form, etc. No unmounted copies of each photograph must be sent with the

## PHOTOGRAPHS REGISTERED:—

Greenway, 27, Abington Street, Northampton. Photograph of the Northampton Town Football Club, 1908-9.

Breach & Co., 37, White Rock, Hastings. Photograph of a Combined Photograph and Drawing of Harry Butt, Sussex Wicket-keeper. Over 1,000 prints in First-class Cricket. Showing Cricket Balls, Bats and Stumps, also a Hand.

1, 28, Queen's Place, Shoreham, Sussex. Photograph entitled: "A Scene in Angling Town, Shoreham, Sussex."

COLOURED BROMIDES.—I am enclosing a coloured bromide print. Do you consider £2 2s. a fair fee to be shown how to get this? 2. Is it an entirely new method?—A. Z.

It depends what business you can do in portrait prints of this type. 2. We do not profess to know what the method is, similar results have been obtained by methods of chemical printing. See the article in our issue of July 24, 1908.

PORTRAITURE.—I should be glad if, through the medium of "B.J.," you could recommend any really good and practical method on posing.—Pro-Pro.

As good as any is "The Pose in Portraiture," in the "Photography" Series. (Messrs. Dawbarn and Ward, 6, Farringdon Road, London, E.C. 6d. net.)

OSCOPIC WORK.—1. What is the best printing medium for stereoscopic work? I am enclosing a few specimens in P.O.P. I use anything better? 2. The prints I am sending are taken from a series taken during my holidays, and having only been taken up stereoscopically I shall be glad if you will kindly let me if they are fairly satisfactory as regards trimming, etc.? You will see, I have cut and transposed negatives. 3. I have a set of apparatus which a friend says is probably some form of stereoscope. It consists of a mahogany board about 3 ft. long, and like the bed of a lathe, into the groove fit three sliders, of which support vertical racks, which would securely hold up photographs, the other one supports a pair of hinged mirrors, which open to a right angle and are apparently intended to set vertically on the board. If, from the above description, can kindly tell me what the instrument is and how to use it I feel obliged.—X.

A grainless surface is necessary to give the best effect, otherwise the printing medium does not matter much. As a general rule a glossy or semi-glossy surface should be selected, as shadows are apt to be lost with matt papers. 2. Your specimens are very good, but you have mounted them rather closely for use in a prismatic stereoscope. The best separation is about  $\frac{3}{4}$  inch for distant objects on the horizon. If no distant objects are in view, then mount so that points in the mid-distance are about 3-16 ins. apart. The trimming is well done, but in one of the views you have not trimmed exactly to the nearest points. In "A View on the Penhill Burn" you should have had the trimming by the overhanging dark branch and taken more off the outside of each picture. In the "Murder Hole" you should have trimmed by the nearest rock. At present the rock appears to be a little in front of the mount, while the dark rock is behind it. A little more off the outside edges would put this right. Altogether, your prints are far more carefully made than we usually see them. 3. Your apparatus is a Wheat-

stone reflecting stereoscope; but in your sketch the mirrors are arranged wrongly. They should be turned round through a quarter of a circle, so that the outside angle faces the observer. The photographs are fixed to the other two supports and placed facing one another at a convenient distance apart. The angle mirrors are arranged between the photographs so that an observer standing in front of the angle sees the right hand picture in the right hand mirror with his right eye, and the left hand picture in the left hand mirror with his left eye. By trial you will soon find the right adjustment. Bear in mind that the images seen are reversed as regards right and left, and that the picture taken in the right hand camera must be the left hand picture in the stereoscope. Either the pictures or the mirrors should slide at right angles to the long baseboard. If you find difficulty in combining the pictures draw both photographs forward a bit or else push the mirrors back.

WORKING-UP.—(1) What is the pure oxide of zinc mixed with, as used by some artists for finishing enlargements? (2) I find the "Crayon Fixatif," as given in the "Almanac," dries in spots and streaks, and yet if I dilute it with more spirit it does not cover up the markings of the crayon. Can you give a formula that will dry evenly and cover up such markings?—CYNDERS.

(1) Most artists use the zinc white, as sold in tubes or cakes by the artists' colourmen. However, if you want to prepare it yourself you must grind it very finely on a glass slab and muller with gum-water and a little glycerine. (2) There is no fault in the formula; it is as good as can be used. Your trouble, we imagine, is due to the way you have used it—not spraying it on evenly, or perhaps to diluting it.

SULPHIDE TONING.—"Sulphide toning solutions should never be kept in a room where photographic materials are stored." Please say if above refers to gold toning solution for P.O.P. made up of gold chloride and ammonium sulphocyanide, as I keep stock toning solution in same press with plates.—J. A. C.

Certainly not. Sulphocyanides are quite without action. Our comment applied only to sulphide.

NEW YORK PERIODICAL.—I wish to obtain a berth in New York or some other large town in United States. Could you give me the name and address of the best American journal to advertise in, also if it would be possible to obtain a berth in U.S.A. by advertising in an English journal?—F. S.

Write to the "Bulletin of Photography," 606-608, Sansom Street, Philadelphia; or "Wilson's Photographic Magazine," 239, Fourth Avenue, New York.

POTASS. PERCARBONATE.—Could you give me a ready way of distinguishing potass. percarbonate from potass. bicarbonate? I have what I believe to be the former, but on immersing in its solution a plate from the fixing bath there is no visible effervescence.—CANTAB.

The percarbonate is a crystalline substance, which readily absorbs water from the air, becoming moist. If a little percarbonate be placed in a test tube and some diluted hydrochloric or sulphuric acid poured over it, there should be evolution of oxygen gas, which can be recognised by its re-kindling the glowing end of a wooden splinter.

W. DRAKE.—We think you cannot have seen the results on all the makes. We advise you to write also to, say, Kodak, Ltd., Birmingham Photographic Company, Ilford, Ltd., Marion and Co., and Rotary Photographic Company for specimen prints. We shall be surprised if one or other of these makes does not suit you.

A CASE OF NOTICE.—I was employed by a firm as an assistant to work at the head business at —; and if necessary to go and take charge temporarily at any of the firm's various branches. I was sent to — to take charge there, and whilst there was sacked. Am I legally entitled to my railway fare back? We have no written agreement.—CYNDERS.

A great deal may depend upon what you were "sacked" for, also, what arrangements you made when you were engaged, as to travelling expenses. These are points that a County Court will decide if you take the case there.

FRILLING.—As we are great users of plates for copying we have lately experienced inconvenience with same, as the film of some comes off when fixing or when washing in water. We do not leave them too long in the hypo or in the water. Also some of the same plates do not fix at all. For instance, last Friday we left some plates in

hypo for about four hours (strong hypo), the white was not off. We left them all night in the hypo, and in the following morning the white was on just the same. We have complained to the manufacturers, and the reply was that perhaps we are using hot developers. We do nothing of the kind. We always use cold developers.—EX.

We are afraid it is not possible for us to assist you, as you do not tell us anything of your working method. It is very rare to find plates frilling nowadays. Possibly the use of freshly made, and therefore chilled, hypo solution may have been the cause. As to the impossibility of fixing out the plates, we can make no other suggestion than that some other chemical than hypo has been supplied to you.

**COMBINATION PRINTING.**—Could you kindly supply me with a little information through the "B.J." as to the following? I have to take a group, size 12 by 10, of members of a club, but they want me to leave a space in the centre of group, and print in one of the heads of the club, to make him a presentation of same. I have secured a photograph of him and they would like to have the group (with him inserted) made without his knowledge. How can I block out same and print his photograph in so as to look as neat as possible? Shall I have to print from the two plates? A little help from you would greatly oblige.—W. E. T.

The method you had best use was described in an article by H. V. Todd in our issue of July 3 this year.

**VARIOUS.**—Please inform me of the uses of the two kinds of "Photometre Loupé"? What I desire to know is if they (either) are useful for interior churchwork? How would their scale compare with Watkins'? 2. In order to harden bromide prints, I use a 5 per cent. solution of formaline. I fix the prints, just rinse or dip in water, then transfer at once to formaline bath. I then wash, dry and sulphide-tone as usual. The formaline bath goes very brown after use. Is it any use for future use, and do I get the prints hard? I do it to prevent blistering.—S. H. C. St. Ives.

1. We are not familiar with Photometre Loupé, and so cannot answer this question. Visual exposure metres such as the Photometre Normal or Heyde's Facile Actino-Photometer are very useful for quick determinations in a bad light, but they require practice. We cannot compare their scales with those of meters such as Wynne or Watkins. 2. The discoloration is, no doubt, due to the hypo carried into the formaline bath. Except that the latter bath may stain the prints when thus altered, there is no objection to your method, though we should prefer to give a five or ten minutes' wash after the hypo. However, the hardening effect of the formaline should not be impaired.

**SERIES OF PHOTOGRAPHS.**—Of a series of photographs I am making one presents a difficulty I cannot see my way through, and to overcome this will be to complete the set. It has occurred to me that such a case may have been presented to you before, and you could offer a little help. My photographs are of local ship-building yards, in each case either taken from the water, or from across docks that are sufficiently wide to allow of the whole length of works to be shown with a water frontage. The photographs are 15 by 7½ taken on 15 by 12, but it is not necessary that I stick to the 15 in., it may be longer, if it has to be in two sections and joined together. All have been got on its one plate, excepting the last one, when the difficulty occurs. They are all very good, and taken with a 16 in. Cooke Anastigmat. The difficult case is where I have works all along one side of a long narrow dock, 150 yards long and about 40 yards wide. If I could get sufficiently far away to get all on one plate, I should not get the water frontage in, and would get buildings in this side of dock I do not want. Thinking I might manage by taking it twice, I made exposures, 50 yards apart, that is, 50 yards from each end of dock, using Cooke 7½ in. Anastigmat which, with care, nearly covers 12 by 10 sharp. You will see by prints enclosed, they will not join. No lens will cover the lot in one exposure, and it will mean 2 or 3 prints to be joined together. In this case I had my lens too low, so got my sky unduly cut off, that can be remedied. As long as I get one long picture whether in 2 or 3 pieces that I can join, it does not matter as to either length or width. Can you help me please in next week's paper?—CENTRAL.

Your difficulty is due to making wide-angle views which cannot

possibly join at the edges unless the subject is one plane. In a subject such as this you must take larger number of narrow angle views and arrange the joins come where there are fewest foreground. You must not have a join in the centre of the crane have now. The subject is a very difficult one as the subject is so short, and we doubt if you can expect a great success. A panoramic camera would probably give a truer idea of the subject. "SAM BUCK," "Old Reader," "G. W. B.," "Printer," and —In our next.

**BLACK BACKGROUND.**—I should be glad if you would kindly tell me, through the medium of the "B.J.," the best and cheapest way to make a black background. I should like, if possible, to have a recipe that will not peel or make black dust afterwards. HUTCHINGS.

The simplest and the best way to make a dead-black background is by the powder process. Full working details of it will be found on p. 155 of our volume for last year. In that whiting and pigment are given, but it goes without saying that for you the whiting must be omitted and the black only employed.

**ENAMELLING PRINTS.**—In your "Answers to Correspondents" column of June 26 last you say, *re* enamelling and emprints: "The enamelling is done in the usual way with collodion and gelatine." We should feel much indebted to you if you would kindly tell us: (1) How are the above solutions prepared and where obtainable? (2) How to proceed with that are to be enamelled — are they squeezed on an oiled glass or on ferrotype plates? (3) As the prints are to be frequently embossed, and are, therefore, to be mounted on thin card or cartridge paper (previous to actual mounting on of emprints with glue to mounts), when are they best mounted thin card so that high gloss does not come off prints when enamelling or after? Would like to obtain results similar to enclosed print, so that detailed information would greatly be appreciated.—ENAMELL.

To answer your different queries in such a way as to be of service to you would take up a full page of the "Journal." Full working details of the method of enamelling prints with collodion and gelatine were published so recently as December (p. 976), we cannot afford space to repeat them here, partly as most readers of the "Journal" are now familiar with them. We must therefore refer you to the article.

**MANITOBA.**—1. A lens with an aperture of  $f/4.5$  is rapid enough for portraiture, though lenses are made with a larger aperture than that. 2. There is no means of diffusing the focus with a lens named. It must be used intact. 3. Yes. 4. There is a lens in the Zeiss list, which has an aperture of  $f/3.5$ , but it is only made up to 12 in. focus. 5. We should advise you to try what you propose, but probably a better result would be obtained by having the magnets rewound to suit the present voltage. We think it would be well to consult an electrician, say one from the company that supplies you with the current.

**B. DOS SANTOS LEITAO (Lisbon).**—(1) Some few of the cameras have been made, but we believe they are not regularly on the market yet. (2 and 3) We suggest that you apply to Mr. Ed. Butler, 26, Craven Park, Willesden, N.W.

\* \* \* **NOTICE TO ADVERTISERS.**—Blocks and copy are received for the approval of the Publishers, and advertisements are accepted absolutely without condition, expressed or implied, as to what appears in the text portion of the paper.

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## SUMMARY.

Photographic Salon. A great majority of American work enters the Photographic Salon which opens to-day at 5a, Pall Mall East. The English members of the Linked Ring get a misrepresentation, and other leading pictorial workers practically none. Nevertheless, there is some fine work both as photographic and Autochrome transparencies. (P. 692.) The full review Salon will appear next week.

Printing-frames for colour photography and methods of stereocinematograph projection appear among patents of the week. (P. 692.)

The experimentally minded photographer, a system of making solutions of such chemical strength that a certain volume of equal to the same volume of another is recommended as content in use. (P. 681.)

G. R. Henderson, as the result of his own practice, advises a method of development followed by intensification for getting special qualities in the negatives. (P. 681.)

Describe the working of a paper for the production of direct prints in the camera. The results resemble good collodion prints. (P. 681.)

Comprehensive paper, contrived a year or two ago by Mr. C. R. Piper to a Continental journal, is reprinted on page 694, the reason that it provides the exact rules required for the practical correction of distortion and for the construction of apparatus in which such correction can be carried out.

## EX CATHEDRA.

### Rapid Bromide Printing.

The provision of one or other of the hand-fed printers may be said to be a necessity in turning out bromide work in any quantity. The use of an ordinary printing-frame is altogether too wasteful of time. Certain printers have the advantage that they can be used in the dark-room close at hand where developing is being done, since there is no escape of white light from the apparatus. A rough and ready but practical method of attaining the same end is to arrange a lamp and switch on the work bench, placing it in a box built from four printing-frames, which form vertical walls round the lamp, a fifth printing-frame being laid in position to form the top. This device is sufficient to make it unnecessary to cover up sensitive cards or paper, but it naturally requires that the negatives should be of equal printing speed. A device which can be easily extemporised, and is in some respects more convenient than a printing machine, consists of a box fitted under the dark-room bench. The top of the box is formed by the work bench, or rather an aperture is cut in the latter, and the box fitted therein. The aperture being glazed, and provided with a hinged cover, the negative is laid on the glass and the paper pressed into contact by the cover, which is readily adjusted to switch on the lamp.

\* \* \*

### A Novel Society Programme.

As typical of a number of letters which have reached us in reference to our paragraph last week on the photographic society programme, we insert that from the president of the Edinburgh Photographic Society in another column. The secretary of the Blackburn and District Camera Club has sent us the programme of his society, which takes the somewhat novel form of a wall placard with a tear-off list of fixtures attached. Members thus have the proceedings of their association kept prominently before them, and in addition are offered prizes for prints which may most suitably fill a space provided for the purpose in this novel society programme.

\* \* \*

### The Use of Pinholes as Stops.

The Rev. F. C. Lambert a long time ago pointed out that by taking advantage of the great depth given by very small stops it is possible to use a short focus lens as a long focus one, and vice versa, which means that the same lens can be used at a wide or narrow angle at will. Of course, this involves the use of very small stops, of about the intensity of  $f/100$  to perhaps  $f/150$ , and proportionately long exposures must be given, but the expedient is a very useful one at times. Even at  $f/64$  (generally the smallest stop available) a little can be done in this direction. If using Waterhouse diaphragms it is, however, an easy matter to

Provide extra ones with the required small apertures, but the iris is the usual form nowadays, and with this a special device must be adopted. There is no great difficulty in providing a perforated metal disc that can be inserted in the lens mount against the partially closed iris. When a doublet is used and a longer focus is required, the usual expedient is to remove the front combination and work with the back one alone. This often requires a longer camera extension than is available, and the pinhole stop may then come in useful to shorten the working focus of the single lens and render it serviceable. To shorten the working focus of a doublet, of course the front combination must be replaced when the stop has been inserted. It will be found in practice that a stop of about  $f/150$  gives a big latitude of movement, and that a 6-inch lens, for example, may be made to serve the purpose of any lens of between 4 and 10 to 12 inches. The exposures are, of course, long, and can be regulated in much the same way as those for pinhole work, but the definition is much finer than that given by a pinhole if the variation in extension is not carried to extremes.

\* \* \*

#### A Useful Experimental Device.

On another page we review a new book by Mr. A. M. Worthington entitled "A Study of Splashes," and we draw attention to the very simple and effective method adopted by the author for making his successive exposures at very short intervals of time. The problem that he had to solve in devising his apparatus was not a simple one by any means, yet one of a kind that many photographic experimenters have to tackle. Briefly, it may be stated thus:—To obtain photographs of a falling drop or ball at intervals of one-thousandth of a second. It being obviously impossible to take such exposures in succession during one fall of the ball, the apparatus had to be reset for every exposure, and the period between the release of the ball and the exposure had to be increased by one-thousandth of a second for each exposure. The method adopted was to use two balls dropping simultaneously. One ball in dropping passed between two terminals, and so completed an electric circuit, and this caused a spark that served to illuminate the other ball. By the simple expedient of dropping the timing ball from a greater height every time the period before the exposure was increased at the rate desired. This arrangement gave an accurate and easily adjusted time regulation, for a fairly considerable rise was required to increase the time even by such a short period as one-thousandth of a second. For example, if the height of fall down to the terminals be increased from 4ft. to

4ft. and two-fifths of an inch, then the time of fall is increased by just one-thousandth of a second. This is a device that can often be made to serve a useful purpose. The manner in which the falling ball completes the electric circuit is also a useful expedient worth special notice, for when the photographer attempts to regulate the completion of a circuit by the aid of a falling body, seldom has any better idea than that of allowing the weight to hit, and probably break, something.

\* \* \*

#### Very Short Spark Exposures.

A very bright light of very short duration is another thing often required by the photographer for special work, and Mr. Worthington's method of securing this is well worth noting. He uses two large Leyden jars, and charges the inside coating of one positively and the inside coating of the other negatively, with the aid of an ordinary electric machine. A Wimshurst machine is, of course, the best, but the old-fashioned and cheaper cylinder could be used. From the outside coating of each jar a stout wire is taken to the point where the light is required, and the ends of the two wires are armed with magnesium terminals, a set so as to leave a suitable spark gap. On connecting the inside coatings of the two jars, which connection is made in Mr. Worthington's experiments by the falling ball, a brilliant spark of extremely short duration passes the magnesium gap, and the exposure is made. The duration of this spark was found to be less than three-millionths of a second, whereas the spark given by an induction coil covers a very much longer period, and, in fact, gives much too long an exposure for such purposes as Mr. Worthington had in view.

\* \* \*

#### The Workroom Floor.

Excellent as is the cemented or tiled floor of a printing-room or dark-room from the point of view of cleanliness, it has drawbacks in other respects which may be worth consideration, since they affect the economical working of the establishment. Such floors are very cold to the feet, and unless the rooms are very well warmed, long spells of work such as are necessary before Christmas, may make the worker so miserable that he cannot do his work properly even if they do not induce worse symptoms. A much preferable form of support for the feet is a wooden rack, made of stuff 2 inches by 1 nailed on 1 inch cross-pieces with 1 inch between each board. These gratings are very warm and dry to the feet, and being raised from the floor and movable are a great help to cleanliness in the workroom.

## THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC FOR 1909.

Edited by GEORGE E. BROWN, F.I.C.

THE forty-eighth annual issue of THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC will be published on December 1. This year's ALMANAC reached a total of over 1,000 pages, and the entire edition of 25,000 copies was sold out immediately. Of no other photographic book ever issued can two such unique facts be recorded. The edition for 1909 will also consist of 25,000 copies.

The editorial article will deal very completely with the important subject of

#### REFLEX CAMERAS,

and the systematic review of the work of the year under the title "Epitome of Progress" will be a strong feature of the volume.

The lines followed in the previous editions of the ALMANAC will be maintained in general, but in a number of particulars the arrangement of the volume for 1909 will be

modified to make it more than ever the book of universal photographic reference.

The ALMANAC for 1909 will appeal to photographers the world over as a daily reference guide in practical work. The standard matter and formulæ will be revised and added to where necessary, and, wherever practicable, new features of an informative nature will be added.

**\*\* IMPORTANT NOTICE.**—The attention of advertisers is specially directed to the announcement that the entire edition of the ALMANAC (25,000 copies) will again be placed in the hands of dealers and the trade on December 1, as to be well in advance of the Christmas publishing season, and the co-operation of advertisers to that end will be esteemed by the publishers.



# EQUIVALENT SOLUTIONS FOR EXPERIMENTAL PURPOSES.

My article on recording the results of experiments were some simple hints intended for the benefit of the amateur investigator. Another hint that may be of service is the advice to prepare his testing and experimental solutions on what is known as the equivalent system. For the majority of his work this may not be a matter of great importance, but occasionally it is of very importance, and a great saving of time and trouble is effected if the properly adjusted solutions are to be used. To give a simple instance: it is often desirable to repeat an experiment made on, say, a chloride emulsion on paper, upon a preparation of simple silver chloride. The ordinary way silver nitrate and hydrochloric acid and sodium chloride will be at hand in solutions of various strengths, and when the experimenter comes to prepare a chloride he will have to make sundry calculations to find out how much of each solution he must take. If he is a careless worker he will probably jump to conclusions, and use too much of one of the ingredients, and not only waste material, but probably spoil his experiment, for it is somewhat a matter of considerable importance to avoid an excess of one of the ingredients. If equivalent or "normal" solutions are at hand, all he has to do is to take equal parts of them to obtain the product he wants, and an excess of one ingredient is necessary, a few extra drops will provide it. A so-called "normal" solution is one in which one litre of solution contains exactly the gram equivalent of the active reagent weighed in. Generally such a solution is too strong, therefore solutions of one-half or one-tenth that strength are used, called seminormal or decinormal solutions. The following table gives some of the most useful solutions in their proper strengths, but for general purposes these can be used to decinormal strength. A certain quantity of any solution here given will exactly neutralise an equal

quantity of any of the alkaline solutions, and if a halobromide salt of silver or copper is required, equal parts of the solutions will produce it. When used as test solutions the amount of the test solution required, of course, affords a measure of the quantity of the substance tested for, which fact is the basis of volumetric analysis. The figures in the table are the number of grammes that should be taken to make the litre of normal solution.

Hydrochloric acid .....	36.537	Iodine .....	126.5
Nitric acid .....	63	(with 180 grs. pot. iodide)	
Sulphuric acid .....	49	Potassium bromide .....	119
Ammonia .....	56 cc.	„ iodide .....	166
(use ammonia .880)		Silver nitrate .....	170
Ammonium bromide ..	98	Sodium chloride .....	58.5
Barium chloride .....	121.77	„ carbonate (dry) ..	53
Copper sulphate .....	249.5	„ hyposulphite ..	248

In making the normal solutions of acid and alkali it is best to make a solution of soda carbonate first, using pure carbonate that has been previously heated and allowed to cool, and weighing it out very carefully. This may be taken as a standard correct solution, and then the acid solutions can be checked against it, using methyl orange as the indicator. The normal sulphuric acid of 49 grams to the litre will be arrived at very nearly if 30 cc. of pure sulphuric acid of S.G. 1.84 is mixed with about 150 cc. of water, and when cool is diluted to 1 litre. An approximately accurate normal solution of hydrochloric acid is made by taking 181 grammes by weight of acid of S.G. 1.1 and diluting to 1 litre. The nitric acid solution should be made from colourless acid of S.G. 1.4. The ammonia solution keeps best in a half-normal strength—that is, 28 cc. of .880 ammonia should be diluted to 1 litre. One of the acids should be regulated by testing against the carbonate, and then the ammonia should be tested against the acid. In volumetric analysis it is, of course, necessary to adjust the solutions very carefully, and as exact equivalent adjustment is nearly impossible, the errors are determined and allowed for. For work of the kind that we have in view in this article it is not necessary to be so minutely exact. The point we wish to insist upon is the great convenience of using solutions made up on the principles of the equivalent system.

## A RELIABLE METHOD OF DEVELOPMENT.

Some time ago several of the photographic journals gave an account of a "modern" method of developing exposed plates by treating them with an alternative bath in what might be called No. 1 and No. 2 solutions. This so-called "modern" method was practised many years ago by a photographer of my school, whose photographs of architectural subjects were the despair of all who saw them. But whereas the adherents to the method advocate metol, pyro-soda, and the like for the purpose, my old friend used the ever-popular pyro-ammonia formula. I have for the last four years or so used his method, but with a slight modification in the proportion of the developer. Pyro-ammonia is perhaps the best *par excellence* for all work where differing textures of materials and flesh are to be faithfully represented; yet, in this, it is not used so extensively in everyday work as the other qualities justify. If it were only on the score of cheapness and detail-giving properties, this developer would be permanently housed in all dark-rooms. I am well aware of the fact that many photographers have failed to make good use of it, but I am afraid their efforts have been misdirected when they failed to make good negatives with

pyro-ammonia. As in the case of other formulæ, its peculiarities must be thoroughly understood. There are several ways in which pyro-ammonia may be successfully used, and even to the "alternative" method there is yet another alternative.

In explanation, I may as well describe my own way of using it. First, then, I make my pyro solution by dissolving 1 oz. of metabisulphite of soda in 7 oz. of water. I then pour this mixture into a bottle containing 1 oz. of Schering's pyro. When thoroughly dissolved, the solution is made up to 10 oz. with water. This forms a stock solution of pyro, from which 300 minims are taken and water added to make 10 oz., making the No. 1 working solution. The No. 2 working solution is made by dissolving 15 gr. of potassium bromide in about 7 oz. of water, adding 70 minims of ammonia .880, and making up to 10 oz.

As mentioned above, there are two ways of using these solutions successfully. Assuming that the plate has received an exposure sufficient to impress the shadow details thereon, the method to adopt is to allow the plate to soak in No. 1 solution for four minutes and then to transfer it, without washing,

The No. 2 solution for a similar period. The resulting negative will be a soft one, full of quality and detail, and entirely free from that bugbear, dichroic fog. The second plan is perhaps even better, and is the one I myself use successfully. Exactly the same solutions are used, but the plate is allowed to stay in each for only one minute. Fixing follows in the usual way, and the result is a thin negative, with perfect detail and exquisite gradation in the high-lights and shadows. For up-to-date printing processes it is very little use in its present condition, but a little manipulation will change all that. If the negative shows a slight veiling of the shadows, as it probably will do, it must be treated in a clearing bath made up as follows:—

Alum .....	2 oz.
Citric acid .....	1 oz.
Water .....	10 oz.

A few seconds' immersion in this bath will be found sufficient; and I may here mention that I always use this bath, as I find that subsequent operations are more easily carried out when the negative is cleared in this way. After a slight washing,

the negative is transferred to the following intensifying solution:—

Mercuric iodide .....	15 gr.
Soda sulphite .....	300 gr.
Water .....	3½ oz.

In a few minutes the negative will have attained sufficient density, and a solution of sodium sulphide (5 per cent.) should be applied for a few seconds. After washing—for not too long a time—the negative is complete. Batches of plates may be treated in this manner, and the saving of time over ordinary methods is considerable. A remarkable point to be noted is the total absence of halation, even when most expected. When dealing with interiors and portraits with drapery this quality is invaluable. I have experimented with various formulæ, but I have never been able to obtain such exquisite negatives as with the foregoing formula and method of working. I have often been asked by friends how I managed to get such brilliant effects and yet retain the softness so desirable in portrait work. The answer is here given for the benefit of the profession at large.

G. R. HENDERSON.

## THE GERMANO-AMERICAN SALON.

A PRELIMINARY look round at this choice and not too hardy annual reveals some interesting facts. We find the number of prints lower than ever, chiefly because the walls are for the most part occupied only by a single line of works. But let not the eager visitor imagine that he is to see a choice selection of the work of all his old Salon favourites. What he will see is a liberal selection of the work of a small handful mostly of newly forged links. The long wall to the left upon entering the R.W.S. gallery is furnished by a long line of Arbuthnots and De Meyers, with a little central group of Parisian oils bunched up in the middle. The small angle wall next, contains a clump of Beningtons. The north end wall is Coburn territory. The next angle wall has a handful of things, including a Mrs. Coburn, a single Evans, and a single Blake. The longest wall, after dallying with one Cadby, one Mrs. Cadby, and an Evershed, becomes more liberal with two Mrs. Brigmans, three Miss Blands, four Keighleys, ten Eugenes, ten Steichens, six Stieglitz and Whites, and ten Whites, and then tails off to a few general examples, seven in all. The south wall has three Mortimers and eight Craig Annans. The rest is a little general smattering, including one Craigie and one Keighley.

The middle of the room displays some excellent Autochrome in an erection furnished with eaves to shade the spectator and supplied within with a long gable of metal foil at a proper angle to transmit reflected light through the plates. The Autochrome section is important, and offers some first-rate work. There are two Craig Annans, eleven Coburns, twenty De Meyer (at twenty guineas apiece), a G. B. Shaw, which, by the silence of the catalogue, must be judged either priceless or worthless twenty-nine Steichens, and three Warburgs.

It will be seen that the exhibition is a Coburn show primarily, a Steichen show secondarily, a De Meyer show tertiarily. It will also be seen on reference to the catalogue that these gentlemen were active upon the selecting committee, and we may add upon good authority that the names of the other acting selection committeemen were Arbuthnot, Benington, Davison, and Keiley, though the latter's name is not printed as such. Mr. Craigie should have acted, but came rather late. We deduce that if a link wants a good show for himself he must be upon the selecting committee in the first place, and in the second place he must be an early bird upon the scene of action if he would find even the mangled remains of the proverbial worm.

## PORTRAIT PRINTS DIRECT IN THE CAMERA.

It may be remembered that some weeks ago we mentioned the so-called "Positype" process for the production of single positive prints as the result of direct exposure in the camera. Since then we have had the materials in our hands and have been able to obtain results in every way equal to those previously shown us as examples of what the process would do. The new method certainly is deserving of the attention of professional photographers, by whom its rapid production of a permanent photographic portrait may be utilised advantageously in various ways. But before touching on the process itself, we will first explain the principle of the method, and then go into details as to the practical working.

The "Positype" paper is evidently coated with an emulsion resembling that of bromide paper, though evidently also differing from this latter in some particulars. A finished result in the

way of a positive print is not, however, obtained as it was in the old glass positive days, and still is by means of the ferrotype picture; that is to say, by producing a negative image on a dark background, and, by suitable choice of developer, making this negative image of a whitish appearance. This old method of preparing a positive, excellent as it is in skilled hands, can never be a really popular process now that few persons are experienced in the wet-plate process. In the "Positype" process, an equally ancient method is employed; yet for the first time, so far as we know, in producing a really excellent photographic print on paper. The method is, in fact, nothing more than the reversal of the primary negative by a series of operations which are very similar to those conducted with the same object on the Autochrome plate. In other words, the negative image is dissolved away, and the residual (positive) image rendered visible.



suitable method. There is one reason why this method is particularly suitable for a process which is designed for the production of prints in a short space of time—there is no need to wash and therefore there is no washing out of hypo to be done. A feature is a strong point in favour of such reversal processes adapted for "rapid photography." The print, too, is a really fine photograph, and not something made to look like a fake by a species of trickery.

Following the directions given for the use of the "Positype" paper, the paper, after exposure as for a plate of "medium" quality, is developed up to a point at which the image (negative) is somewhat overdone, when looking down upon it in the developing dish. For this purpose two developers are given, one so-called "slow-acting," and another described as "instantaneous." The formulæ for these latter are as follows:—

#### SLOW-ACTING DEVELOPER.

Soda sulphite dry, pure .....	1½ ozs.
Potass. carbonate .....	1½ ozs.
Hydroquinone .....	180 grs.
Potass. bromide .....	40 grs.
Water .....	20 ozs.

#### INSTANTANEOUS DEVELOPER.

Soda sulphite dry, pure .....	2 ozs.
Water .....	15 ozs.
Caustic potash stick .....	1½ ozs.
Potass. oxalate .....	2 oz.
Potass. bromide .....	140 grs.
Water .....	5 ozs.

Mix the above, mix A and B, and add:—

Hydroquinone .....	1 oz.
--------------------	-------

As our trials have gone, this latter developer gives as good a result with considerably less exposure; it certainly acts much more quickly, which is in itself an advantage for portraiture where you wait."

Development lasts about two or three minutes. The print is rinsed under the tap for an instant only. It is then put one minute in a solution of sulphite of soda (1 oz. in water). It is then given a further wash of about one minute under the tap before placing in the "bleaching" or "reversing" solution. This is supplied for the Positype process under the name "Blanchite," and, from its yellow colour, would appear to be a bichromate preparation. Therefore, while no real harm results from any sulphite which remains in the print, the intention will be to destroy the "Blanchite," and for this reason washing should be fairly thorough. A minute, or no doubt under the spray jet should be ample.

The "Blanchite" acts very quickly; half a minute suffices to remove all traces of the image save a faint brown trace. As at this point is reached the light can be turned up in the dark-room, and the remaining operations done by either daylight.

After a short rinse under the tap from the "Blanchite," the print is placed for one minute in soda sulphite solution (1 : 8), and for this purpose a dish of solution different from that used

after development. In this bath the yellow tint of the "Blanchite" is discharged, and all that now remains is finally to tone or re-develop the print in one or other of the two solutions provided for the purpose—viz., "Septone" or "Nigro-tone." The result in the respective cases is a print of rich sepia colour or of warm black. Either solution acts in less than a couple of minutes, and a final rinse in clean water then completes the process. From their odour the two solutions "Septone" and "Nigro-tone" evidently contain sulphide or a similar body, but must be combined with other constituents, which act differently on the silver bromide image.

In order to take a glance over the succession of operations, we may, from the above directions, prepare a time-table of the process:—

Development in "instantaneous" or "slow" solution—2 to 3 minutes.

Washing under tap—½ minute.

Soaking in soda sulphite, 1 in 8—1 minute.

Short washing under jet—1 minute.

Treating in "Blanchite," 1 in 10, with rocking until image disappears—1 minute.

Washing—1 minute.

Treating with sulphite, 1 in 8—say 2 minutes.

Treating with "Septone" or "Nigro-tone," washing and drying off—5 minutes.

This table gives a total time of 13½ minutes for the making of a print, and 15 minutes, or 20 at the most, should be ample time in which to have a print in readiness after entering the dark-room, and this without leaving anything to chance as regards permanency.

Apparently the Positype paper is not made with gelatine emulsion; at any rate, the surface can be dried with perfect safety by aid of moderate heat, and gives a print with a surface best answering to the description of "semi-matt." It is not distinctly matt or glossy, but of the dead-fine character usually given the above description. As to this, however, a sample print of the paper, doubtless obtainable from the agent for the process, Mr. Charles Dawson, Holloway Hill, Godalming, is a better specification of the prints than any form of words.

As regards the use of the paper, the most obvious application is for photography of the while-you-wait order. For this, as we have already said when first mentioning the paper, the really handsome appearance of the prints is altogether too good. It is possible, of course, that the taste of persons patronising this order of photographer may be capable of elevation, but we doubt it. At any rate, for such occasions as bazaars, soirées, etc., a "Positype" portrait studio should be a source of profit, and the speed of the paper should be just about sufficient to permit of exposures by arc light.

The cleanness of the process should also render the paper useful for the making of enlarged negatives direct, although the emulsion for this purpose would have to be coated on a much thinner paper than the specially stout stock which has been used for the paper we have employed.

**FRIDAY BOOKLETS.**—The latest additions to the series of booklets published by the St. Catherine Press, Ltd., of 8, York Buildings, E.C.4, W.C., deal with the districts of Banff, Crediton, Farnham, and Kingsbridge and Salcombe. They contain much useful information for the guidance of the visitor, and copies may be had, post free, by applying to the Town Clerks of the respective districts.

**RIGHT TO ONE'S FACE.**—The "Conversations on Copyright," which have been published in the "British Journal" (writes "Sharn-Newton Zealand Photographer") explain very fully the law and the right of copyright in "the Old Country." A fact which comes out of the evidence is that there seems to be no remedy against a photographer who makes or publishes a libellous caricature of

well-meaning but unconscious citizens, by sudden "snaps" upon their persons. In New Zealand the public are protected against the camera fiend by the proviso that the photographer shall not print or publish portraits of persons or groups of persons without their express consent.

By the way, in the registration of photographs and works of art under the New Zealand Copyright Act, the cost is scheduled at one shilling for the form and a half-crown fee for registration; to this the registrar now adds five shillings for the certificate of registration. Surely this last payment might be suspended until the certificate was actually required, since a total payment of eight shillings and sixpence each makes a costly luxury of the legal protection of numerous works of small value.

## TONING, INTENSIFICATION, AND REDUCTION.

[In the following article in "Photo Notes" Mr. Morison describes several methods of intensification dependent on sulphiding process. It will be seen that he uses a mixture of a developer and of a sulphide that some readers may like to experiment with. If a developer alone were to be used, then bleaching solution No. 1 would of course give far more density than No. 2. In sulphide toning, No. 1 generally gives a darker colour than No. 1, but we doubt if it can give a greater printing density in any circumstances. We should be inclined to reverse the order of these two solutions.]

MANY readers are aware of the process of bleaching and blackening or sulphiding an image as a means of intensifying negatives, etc., but I think few are aware that the ordinary processes of bleaching and blackening have many variations. I have endeavoured in the following article to explain fully some of them. The processes detailed consist of a reducer for strong contrasted negatives and prints, and intensifiers for different degrees of intensification which are also of use for toning bromides all shades of brown. In the first place the bleaching solutions are put forward in the order of intensity in the finished result.

Starting with the lowest :—

### No. 1.

Potash bichromate .....	2 parts.
Hydrochloric acid .....	1 part.
Water .....	100 parts.

### No. 2.

Potass ferricyanide .....	10 grains.
Potass bromide .....	10 grains.
Water .....	10 oz.

### No. 3.—Extreme density for line-work negatives.

Lead nitrate .....	40 grains.
Potass ferricyanide .....	60 grains.
Acetic acid .....	18 mins.
Water to .....	2 oz.

After bleaching with No. 3, wash carefully once in 10 per cent. nitric acid, then in water.

The following darkening solutions are also in the order of intensity beginning with the weakest :—

A. Rodinal .....	20 to 30 drops.
Sodium sulphide saturated solution .....	30 drops.
Water .....	2 oz.
The more rodinal the less increase of density.	
B. Schlippe salts .....	1 part.
Ammonia (25 per cent. sol.) .....	1 part.
Water .....	100 parts.
C. Sodium sulphide .....	1 oz.
Water .....	100 oz.

With the use of No. 1 as a bleacher and A as a darkener very little intensification, or a nice warm black on bromide paper.

B instead of A gives a light reddish brown, C a dark brown.

Then also we can use No. 2 as the bleacher and darken with C, while the use of No. 3 and C together gives a very strong only suitable for line work.

To reduce harsh contrasts on negatives, or bromide, gaslight P.O.P. prints (fixed and washed only) bleach in No. 1 or 2 and develop with rodinal 1 part, water 50 parts. When development reaches the density wanted, wash and transfer to an ordinary bath. The action of the developer proceeds evenly through the so that the thinner parts are developed first and so on in rotation the image has acquired its original density; therefore it will be that we can stop at any density. The fixing bath, of course, solves out the remainder of unaltered salts. P.O.P. prints toned after this treatment.

W. MORISON

## THE CORRECTION OF DISTORTION PRODUCED BY TILTING THE CAMERA.

[As the rules on which is based the correction of the distortion particularly in the design of copying cameras and other apparatus the papers contributed by Mr. C. Welborne Piper to the now defunct "B.J." some years ago, but the following article is the only

produced by tilting the camera are of considerable interest, serving for the preparation of undistorted copies, we reprint the "Camera Obscura." A preliminary paper on the subject appeared one containing a full treatment of the question.—Eds. "B.J."]

WHEN the camera is tilted for the purpose of bringing the upper portion of a high building on to the plate, a distorted image is produced if the plate holder is not swung forward into a vertical position. Such distortion cannot always be avoided, but, under certain conditions, the image can be afterwards corrected by a process of copying.

In this article I propose to consider only the nature, amount, and correction of the distortion produced with the plate holder fixed at right angles to the principal axis of the lens, the swing back not being used at all. It is unnecessary to study the more complicated problems relating to the misuse of the swing back.

### The Nature of the Distortion.

Instead of a high building we will assume the object to be a plane rectangular diagram pinned to a vertical wall at some distance from the ground, this being a general case that will cover all possible cases. In figure 1 the object is shown in vertical section at DE. The camera is in front in position 1, and is tilted so that the principal axis of the lens is directed towards the approximate centre of the object, or to the point P. The vertical plane in which the principal axis lies is supposed to be at right angles to the wall. The angle of tilt of the camera is represented by the angle A1, which is equal to the vertical angle A2 between the object and a line normal to the principal axis, or the inclination A3 of the camera-back from

the vertical, when the back remains at right angles with the principal axis.

Suppose now we take two photographs of the object, one with the plate adjusted vertically, as at I J, and the other with the back

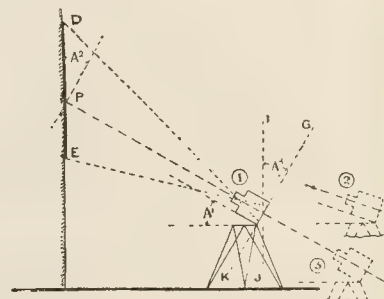


Fig. 1.

right angles to the principal axis, as at GK, preserving sharp focus at the point P in each case. The former is then a correctly proportioned image of the plane object, and the latter is a distorted image



as both are on the same scale of reduction, the second image may be looked upon as a distorted copy of the first on a scale of equal size. Little consideration will show that if we tilt the camera to a certain angle from the horizontal when taking a vertical object, the result is identical with that which would be produced if we kept the camera level and inclined the object to the same angle from the vertical, and this forms the most convenient method of representing the effect of tilting the camera.

In figure 2 the object is represented in vertical section by the line

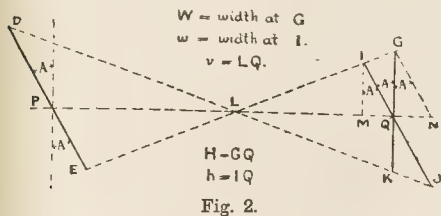


Fig. 2.

the principal axis of the lens by the line PLQ, the lens being at L, and GQK represents the plate in a position normal to the lens. If the camera-back is swung to the position IQJ, parallel with the plate, a correct image is produced, but with the back in the position K we have a distorted image. The tilt of the camera is represented by the inclination of either DPE or IQJ from the vertical, and is by the angle marked A, which letter throughout this article represents the angle of tilt under which the distorted negative is taken.

Figure 3 shows in elevation the correct image produced with the camera level, and over it the distorted image produced by the swingback in thick dotted lines, and over it the distorted

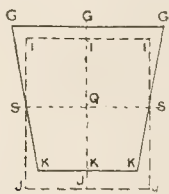


Fig. 3.

image is drawn in full lines. The point Q corresponds with Q in figure 2, and the horizontal line SS, passing through the point Q, divides both images into upper and lower portions.

The most prominent characteristic of the distorted image is its horizontal distortion, by reason of which the sides in the lower half diverge downwards, and in the upper half diverge upwards, the width being correct only on the line SS. There is, however, also vertical distortion; the height of the lower part of the image is increased, and that of the upper part is increased, while the total height is too small. These conditions are those most likely to be met with in practice, but they are not invariable. If the distance from the lens to the object in figure 2 is considerably shortened without altering the angle of tilt, the total height of the distorted image will be greater than that of the correct image; while if PL is increased beyond a certain distance, equal to PE cot.  $\frac{1}{2}A$ , the height of the upper part of the image will be dwarfed, not increased.

If, however, the camera stands on level ground an increase of distance between object and lens necessitates a less angle of tilt, as shown in position 2 in figure 1, and, as a diminution in this angle increases the value of PE cot.  $\frac{1}{2}A$ , the special condition is not likely to be fulfilled. The distance PL can only be increased without altering the angle A, or independently of the value of PE cot.  $\frac{1}{2}A$ , when the ground slopes from the object at an angle from the horizontal equalling the angle of tilt, that is to say, when a movement of the camera from the object necessitates a retirement down a hill of a certain gradient, as shown in position 3. This condition being exceptional one, some, judging only from distortions produced by the camera, have come to the erroneous conclusion that the upper part of the image is necessarily always increased in height. The effect of horizontal distortion diminishes as the distance PL (figure 2) increases, hence, at an extreme distance convergency

practically disappears, or the width of the image is apparently correct at all parts, while the total height is dwarfed to a minimum. In such a case varying heights are all reduced proportionately, so that though all are dwarfed they are relatively correct compared with one another. We may consider vertical distortion to be productive of two distinct effects. Simple vertical dimensions may be exaggerated, dwarfed, or correct, while different vertical dimensions may be correct or incorrect in their ratios to one another. Suppose, for example, the object is a chessboard. If the principal axis of the lens is directed towards the centre, the upper and lower halves of the object are each divided into four equal heights. Let each height equal H, then, in the upper part of the image, the total height is correct when the distance of the camera from the object =  $4H \cot. \frac{1}{2}A$ , all lower heights being dwarfed. The total height of three squares is correct when the distance =  $3H \cot. \frac{1}{2}A$ , but the height of four squares is then excessive, while that of two is dwarfed. Only one dimension is correct at any one particular distance, and therefore the various heights of one, two, three, or four squares are relatively incorrect.

When the distance exceeds  $4H \cot. \frac{1}{2}A$  all heights are dwarfed, and none are correct, either absolutely or relatively, until the distance approaches infinity, when all absolute heights reach a minimum, but are relatively correct.

In the lower part of the image heights are dwarfed at any distance and are relatively incorrect until the distance PL reaches infinity.

### The Measurement of the Distortion.

The vertical and horizontal dimensions of either the upper or lower portions of the distorted image can be calculated from the following formulæ, all heights being measured vertically, up or down, from the horizontal line marked SS passing through Q in figure 3, and all widths being measured at the level reached by the vertical dimension. With an irregular plane object widths would have to be measured on either side of a vertical line GQJ passing through Q, the whole image being considered to be divided into right and left upper, and right and left lower quarters. A symmetrical rectangular object, such as that under consideration, need only be divided into upper and lower halves, and the widths may be taken right across the image.

In these formulæ the dimensions of the distorted image are given in terms of the corresponding dimensions of the correct image on an equal scale, shown in figures 2 and 3. The size of the correct image can, of course, be easily ascertained from the dimensions of the object and the scale of reduction, and the scale of reduction can be arrived at by comparing the length of the non-distorted line SS in figure 3 with the corresponding dimension in the original.

Each half or quarter image being considered separately, let

H = vertical height of distorted image above or below point Q; = GQ or QK in figures 2 and 3.

h = corresponding height of correct image; = IQ or QJ in figures 2 and 3.

W = either half or complete width of distorted image at level reached by H; = GG or KK in figure 3.

w = corresponding width of correct image; = II or JJ in figure 3.

v = distance from lens to image; = LQ in figure 2.

A = angle of tilt; = MIQ in figure 2.

We then have,

1. In upper part of image

$$H = h \cos A \frac{v}{v - h \sin A} \quad (1)$$

$$W = w \frac{v}{v - h \sin A} \quad (2)$$

H is greater than h when v is less than h cot.  $\frac{1}{2}A$ .....(3)

2. In lower part of image

$$H = h \cos A \frac{v}{v + h \sin A} \quad (4)$$

$$W = w \frac{v}{v + h \sin A} \quad (5)$$

H is always less than h.

The amount of distortion depends actually on the angle of tilt, the distance of object from lens, and the size of object, but in the equations the distance of image from lens and size of correct image are substituted for the second two factors.

The manner in which these formulæ are arrived at is apparent from figure 2, for, considering the upper image only, if we draw IM vertical to LQ, then GQ:IM::LQ:LM, and, width at G: width at I::LQ:LM. Equation 3 is found by considering the special case when GQ=IQ.

### The Correction of the Distortion.

Suppose now we have a distorted negative, such as we have been considering, and endeavour to produce from it a correct positive copy in the camera; keeping the negative in its original inverted position, and making all adjustments tentatively. We find that we can correct the horizontal distortion, or convergency, alone, in an infinite number of ways. A cure is effected if we incline either the copy or the negative or both together to certain angles; but only when the two are inclined in opposite directions to particular angles is it possible to also secure sharp focus in all parts of the copy. Next, we find that height is increased or diminished, according as we incline the copy away from or towards the negative, or the negative to or from the copy; and, while a number of positions may be again found in which height alone is corrected, there is only one in which both height and convergency are corrected. This position is difficult to find exactly, and further it most probably is not the position in which sharp focus is also secured.

If we repeat these experimental adjustments with the lens at a different distance from the negative, that is, try the effect of copying on a different scale, it will then be found that the angles at which correct width and focus, or correct width and height are secured vary considerably from the former results; hence, it is apparent that with any particular lens the scale on which we copy is an important factor. It is difficult to make these tentative adjustments when both negative and copy require to be arranged simultaneously, and it is practically impossible tentatively to hit off the exact adjustments essential to securing correctness of height, width, and focus.

### Data Essential to Correction.

Referring to equations 1 and 2, or 4 and 5, it is evident that the proportions of the correct image, or the values of  $w$  and  $h$ , can be calculated if we know the values of  $A$ ,  $v$ ,  $W$ , and  $H$ .  $A$  and  $v$  were presumably recorded at the time of taking the original negative.  $H$  and  $W$  can be measured from the distorted image if the point  $Q$  (figures 2 and 3) is recorded. The factors necessary for the calculation of the correct image are also necessary for its reproduction in the camera, and by directing the axis of the lens used for correction on to the fixed point  $Q$ , we keep  $H$  and  $W$  constant in value, while the recorded values of  $A$  and  $v$  have to be considered in making the other adjustments. The correction process, however, introduces a new factor. The original distance between the lens and the negative cannot well be preserved, and therefore a new variable factor,  $V$ , must be considered. To exactly determine the conditions of correction we must then keep the lens axis directed to the point  $Q$ , and pay regard to the values of  $A$ ,  $v$ , and  $V$ . It is obvious that  $V$  will vary with the focal length of the lens and the scale on which we copy.

### Explanation of Figures and Formulæ.

In figure 4 we have a diagram constructed similarly to figure 2, but showing the distorted negative GQK and the corrected copy d p e inclined in opposite directions, which is a condition essential

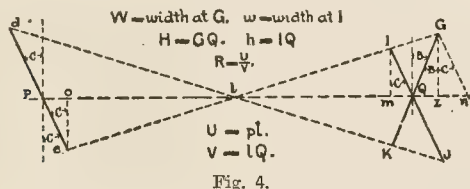


Fig. 4.

to the attainment of sharp definition. The lens is at  $l$  and  $pl$  is the lens axis. Draw  $IQJ$  parallel to  $dpe$ . It is then apparent that  $IQJ$  is a vertical section of a correct image similar to  $dpe$ ; and, further, if  $GQK$  in figure 4 corresponds with  $GQK$  in figure 2, and the point  $Q$  in figure 4 corresponds with  $Q$  in figure 2, it is evident that the corrected image  $IQJ$  in figure 4 corresponds in all respects with the correct image  $IQJ$  in figure 2, and may be looked

upon as a corrected copy of the distorted image on a full size scale. If therefore we presume  $IQJ$  in figure 4 to be a corrected image,  $IQ$  must be equal to  $IQ$  in figure 2, and the width at  $I$  must be the same in both cases. Therefore,  $H$ ,  $h$ ,  $W$ , and  $w$  have the same value in figure 4 as in figure 2.

In figure 2 the different points of the diagram are marked in capital letters. In figure 4, lines that remain of the same length as in figure 2 are still marked by capitals, but all variable dimensions are marked by lower case letters.

In studying the matter of correction we need only consider half of the image, as, if that half is corrected, the other must also be corrected as a natural consequence. The upper half only of the image is considered in working out the necessary formulæ, in which we employ the following symbols in addition to those used in equations 1 to 5.

$B$  = angle of inclination of negative from vertical;  $=QGz$  in figure 4,  $Gz$  being drawn vertical to lens axis.

$C$  = angle of inclination of copy;  $=peo$ .

$V$  = distance of correcting lens from negative;  $=lQ$ .

$U$  = distance of lens from copy;  $=pl$ .

$F$  = focal length of lens used for correction.

$x = V - F$ .

$R$  = ratio of copy to negative;  $= \frac{U}{V} = \frac{F}{x}$ .

**To Secure Correct Focus.**—The condition governing the attainment of correct focus must be considered first. In figure 4,  $Gn$  parallel to  $IQ$  and  $pe$  and  $eo$  and  $Im$  vertical to the lens axis. If the copy  $dpe$  is in sharp focus at all points then the distances  $pl$  and  $IQ$ , and also  $ol$  and  $lz$ , are conjugates, and

$$\frac{1}{U} + \frac{1}{V} = \frac{1}{ol} + \frac{1}{lz}$$

From the figure it is evident that  $U:V::ol:lm$ ; and  $lm:lz::lQ:ln$ , from these data we can arrive at the following equation.

$$\frac{U}{V} + \frac{\tan C}{\tan B} = \frac{F}{x} = R \dots \dots \dots$$

This equation must therefore be fulfilled when the copy is in sharp focus.

**To Secure Correct Width.**—In figure 2 draw  $GN$  parallel to  $IQ$ .

In figure 2,  $\frac{W}{w} = \frac{\text{width at } G}{\text{width at } I} = \frac{LN}{LQ} = 1 + \frac{H}{V} \tan A$ .

In figure 4,  $\frac{W}{w} = \frac{\text{width at } G}{\text{width at } I} = \frac{ln}{lQ} = 1 + \frac{H}{V} \cos B (\tan B + \tan C)$ .

Therefore as  $\frac{W}{w}$  in figure 4 equals  $\frac{W}{w}$  in figure 2

$$\cos B (\tan B + \tan C) = \frac{V}{F} \tan A \dots \dots \dots$$

This equation represents a condition that must be fulfilled when horizontal correction is secured. It allows  $B$  and  $C$  to vary, but we assign any particular value to one angle the other can then be found.

The following special cases should be noted.

If  $C=0$ , horizontal correction can be secured by inclining the negative only, so that

$$\sin B = \frac{V}{F} \tan A \dots \dots \dots$$

If  $B=0$ , horizontal correction is secured by inclining the copy only, so that

$$\tan C = \frac{V}{F} \tan A \dots \dots \dots$$

All these adjustments can be easily made tentatively without aid of formulæ, but the equations are of importance for purposes, as will be seen later.

**To Secure Correct Width and Focus.**—From equations 6 and 7 we can find that when the width is corrected and focus secured

$$\sin B = \frac{x}{F} \tan A \dots \dots \dots$$

$$\tan C = \frac{F \tan A}{V \cos B} \text{ or } \frac{F}{x} \tan B \dots \dots \dots$$

$F$  being the focal length of the correcting lens, the value depends on the scale of copying.



If B is found from equation 10, C can be easily arrived at by tilting the copy until the horizontal distortion disappears.

*To Secure Correct Height and Width.*—It is unnecessary to consider the correction of height alone, and the simpler equations that govern the simultaneous correction of height and width are easily derived.

Referring to equations 1 and 2, and to figure 2, if we divide the first equation by the second and transpose slightly we have

$$\frac{Hw}{Wh} = \cos A.$$

From figure 4 it is apparent that  $\frac{\cos C}{\cos B} = \frac{\text{Im}}{\text{IQ}} \times \frac{\text{GQ}}{\text{Gz}} = \frac{Hw}{Wh}$

Assuming that in figure 4 the copy is correct, w and h have the same value as in figure 2, therefore

$$\frac{\cos C}{\cos B} = \cos A. \quad (12)$$

This equation does not give definite values to either C or B, it only expresses a general ratio that must be fulfilled when the horizontal and vertical distortions are both corrected. Fulfilment of the ratio is not, however, necessarily imply correction. By combining equations 7 and 12 we can arrive at formulæ giving definite values to the angles.

$$\sin B = \tan A \frac{V^2 - v^2}{2Vv} \quad (13)$$

$$\sin C = \sin A \frac{V^2 + v^2}{2Vv} \quad (14)$$

The value of V is fixed according to the focal length of the lens, and the scale on which the copy is made.

Especially note, that from these formulæ C must always be greater than either B or A; and, V must be greater than v to secure opposite inclinations of the negative and copy, the condition necessary to obtain sharp focus.

If V=v, the angle B disappears and C becomes equal to A, which means that the conditions under which the original negative was taken must be restored more or less completely to obtain focus. If V is less than v, sin B is a negative quantity, which implies that the negative and the copy must both be inclined in the same direction; a condition quite antagonistic to sharp focus.

*To Secure Correct Width, Height, and Sharp Focus.*—If we multiply equation 12 by equation 6 we have a ratio expressing a condition that must be fulfilled when height, width, and focus are correct, viz.

$$\frac{\sin C}{\sin B} = \frac{U}{V} \cos A.$$

Dividing equation 14 by equation 13 we have a ratio that must be complied with when height and width only are correct, viz.;

$$\frac{\sin C}{\sin B} = \cos A \frac{V^2 + v^2}{V^2 - v^2}.$$

Therefore it is evident that to correct height, and width, and preserve sharp focus we must observe the following ratio

$$\frac{V^2 + v^2}{V^2 - v^2} = \frac{U}{V} - \frac{F}{x} = R. \quad (15)$$

That is to say, we must copy on a scale equal to  $\frac{V^2 + v^2}{V^2 - v^2}$ , which necessarily involves enlargement.

V being unknown until the value of R is fixed, equation 15 must be modified into a practicable form. From it we can find the value of x in terms of the known quantities F and v, thus

$$x = \sqrt{F^2 - v^2}. \quad (16)$$

It is then evident that

$$R = \frac{F}{x} = \frac{F}{\sqrt{F^2 - v^2}}. \quad (17)$$

Therefore, having a lens of known focal length, F, we can find the value that must be assigned to x to give an enlargement on the required scale, and, having set the copy and the negative at the proper distances from the lens, the angles can then be adjusted by

equations 13 and 14, but more conveniently by the simpler equations which follow.

From equation 15 we have,  $F = \frac{V^2 + v^2}{2V}$  and  $x = \frac{V^2 - v^2}{2V}$

Substituting these values in equations 13 and 14 we have

$$\sin B = \tan A \frac{x}{v} \quad (18)$$

$$\sin C = \sin A \frac{F}{v} \quad (19)$$

C can be adjusted to B tentatively, but note: as equation 18 is the same as 10, it follows that if we set out the angle B by equation 18 and tentatively adjust C to B, but omit to observe the correct scale of enlargement, we simply secure horizontal correction and focus as with equations 10 and 11. The observance of the correct scale introduces vertical correction.

If we adjust the angles by 13 and 14, the observance of scale introduces sharp focus.

Adjustment by 18 and 19 without observance of scale leads to no good result.

It is important to observe that from equation 16, correct height, width, and focus can only be obtained with a lens the focal length of which is greater than v. The greater the focal length of the lens the less the required ratio of enlargement to produce a perfect copy.

If we rely on stopping down the lens to secure focus, we can depart slightly from the proper scale, and with a lens of sufficient focal length can produce a corrected copy on a scale of equal size by the aid of equations 13 and 14.

It may be noted here that though in all cases equations for both angles have been given, yet in practice it will generally be sufficient to calculate one angle only, and to tentatively adjust the other until horizontal distortion disappears. If accurate vertical correction is essential, it is however better to calculate both angles.

If the angles dealt with are small, we may eliminate the trigonometrical ratios and substitute the size of the angles in degrees, for, with small angles, sines and tangents vary very nearly with the angles. The errors thus introduced vary with the value of V. For example, if in the equations we substitute angle A for tan A, and A is not greater than 15 deg., while V does not exceed 2v, the error in B is negligible. If A is 10 deg., V may equal 3v; or if A is 5 deg. V may equal 5v. Under these conditions the resultant angles are slightly too small.

*Correction when All Factors are Not Known.*—In all the systems of correction hitherto given it is assumed that we know the original angle of tilt, or the angle A, the distance v, and the position of the axial centre, Q. The latter factor may be assumed to be always known, as the point is usually the centre of the plate, but either A or v may be unknown, and in such a case the unknown factor may be determined as follows. Set the lens at a certain distance V from the negative, and focus the distorted image on a screen. Then incline the negative until convergency is corrected, and measure the inclination. The sine of this angle is equal to  $\frac{V}{v} \tan A$  (see equation 8) and from this value either v or A can be calculated, one of them being known.

If we know v it is not necessary to calculate A. Knowing v and having a lens of focal length greater than v we can find x (and therefore V and U) from equation 16. Set up the negative and the copy at the required distances from the lens, and find value of  $\frac{V}{v} \tan A$  by inclining the negative only. We can then adjust the negative and the copy, to secure correct height, width and focus, by the following equations, in which Y is substituted for the value of  $\frac{V}{v} \tan A$ , while R is the ratio of enlargement.

$$\sin B = \frac{x}{v} Y = \frac{Y}{R + 1} \quad (20)$$

$$\tan C = R \tan B. \quad (21)$$

If we ignore equation 16 and select another value for x we secure horizontal correction and focus only. Or we may secure horizontal and vertical correction only, by assigning a certain value to V, finding the corresponding value of Y, and then adjusting angle B by

$$\sin B = Y \frac{V^2 - v^2}{2V^2} \quad (22)$$

C can then be found by tentative adjustment, or by equation 21.

We know neither  $v$  nor  $A$ , we cannot find a true value for  $R$  and must assume one. We can then adjust the angle  $B$  by equation 20 and secure correct width and focus, but without knowing  $v$  we cannot secure correct height.

The value  $v$  can generally be pretty nearly ascertained if we know the focal length of the lens with which the original was taken. Assuming the original to be taken with a "fixed focus" camera,  $v$  has always a constant value, hence, if we always correct with a lens of certain focal length we must always enlarge on the same scale. This gives  $R$  a constant value, and also the other expressions which

occur in the formulæ,  $\frac{x}{v}$ ,  $\frac{F}{v}$ ,  $R+1$ , etc., etc.; the adjustments for correction are then very simple, whether we know  $A$  or not.

With hand-camera work  $A$  is not likely to be known, and we must find the value of  $Y$  and divide it by the constant representing  $R+1$  to find the angle  $B$ . It is not necessary to make any record at the time of exposure with a fixed focus camera possessing no movements. The lens being fixed, the axial centre can be automatically recorded on every plate by small notches cut in the edges of the rebates of the dark slides; and with a fixed focus enlarging camera, with central swings at both ends, the negative can be at once placed in exact register with the principal axis of the lens. The only adjustments then required are those of the angles.

### Estimating Amount of Distortion.

Assume the object to be a vertical rectangle measuring 5.5 metres in height and 4.5 metres in width. The camera is placed with its back parallel horizontally to the object but inclined vertically, the tilt being 15 deg. from the vertical. The lens axis is directed to a point in the object 3 metres from the top and 2 metres from the left side, and the distance from lens to plate is 12 centimetres. The ratio of image to object is as 1:50 and the dimensions of the correct inverted image, shown in figure 5, should be 11 x 9 cms., the axial centre  $Q$  being 6 cms. from bottom, and 4 cms. from right side.

To find the value of  $W$  in the distorted image we must consider each quarter of the image separately, as  $Q$  is not symmetrically situated; but it is only necessary to consider the upper and lower halves of the image when finding the value of  $H$ .

In upper half of image  $h=5$ , and from equation 1

$$H = h \cos A \frac{v}{v - h \sin A} = \frac{5 \times \cos 15^\circ \times 12}{12 - 5 \sin 15^\circ} = 5.413 \text{ cms.}$$

In lower half of image  $h=6$ , and from equation 4

$$H = h \cos A \frac{v}{v + h \sin A} = \frac{6 \times \cos 15^\circ \times 12}{12 + 6 \sin 15^\circ} = 5.131 \text{ cms.}$$

In upper right hand quarter of image  $w=4$ , and  $h=5$ , and from equation 2

$$W = \frac{wv}{v - h \sin A} = \frac{4 \times 12}{12 - 5 \sin 15^\circ} = 4.483 \text{ cms.}$$

In upper left hand quarter of image  $w=5$ ; and  $h=5$ ; and from same equation

$$W = \frac{wv}{v - h \sin A} = \frac{5 \times 12}{12 - 5 \sin 15^\circ} = 5.602 \text{ cms.}$$

In lower right hand quarter  $w=4$ , and  $h=6$ ; and from equation 5

$$W = \frac{wv}{v + h \sin A} = \frac{4 \times 12}{12 + 6 \sin 15^\circ} = 3.541 \text{ cms.}$$

In lower left hand quarter  $w=5$ , and  $h=6$ ; and from same equation

$$W = \frac{wv}{v + h \sin A} = \frac{5 \times 12}{12 + 6 \sin 15^\circ} = 4.426 \text{ cms.}$$

In figure 5, the distorted image is correctly set out with figured dimensions, and the correct image is repeated in dotted lines for comparison.

### Correction of Distortion.

To simultaneously correct height and width and secure sharp focus, it is necessary to employ a lens the focal length of which is greater than  $v$ . In order that results may be compared we will assume, in all cases, that a 15 cms. lens is required for the correction of the image, the distortion of which has just been calculated.

It is understood that the lens axis must always intersect the centre and that the values,  $v=12$  cms., and  $A=15$  deg., are constant. *Width Only.*—Assume that we copy on a scale of equal size, t

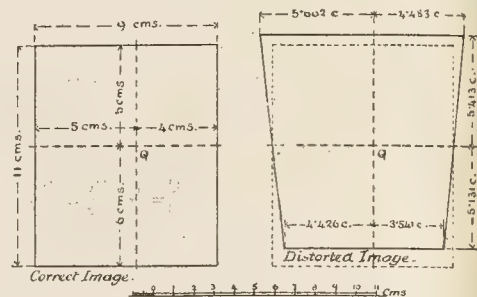


Fig. 5.

$V=30$  cms. If negative only is inclined, from equation 8 width corrected when

$$\sin B = \frac{V}{v} \tan A = \frac{30 \times \tan 15^\circ}{12} = .66985.$$

$$\text{or } B = 42^\circ .3'.$$

If copy only is inclined, from equation 9 width is corrected when

$$\tan C = \frac{V}{v} \tan A = \frac{30 \times \tan 15^\circ}{12} = .66985.$$

$$\text{or } C = 33^\circ .49'.$$

If both copy and negative are inclined, and we assume  $B=13$  deg., then from equation 7 we have

$$\tan C = \frac{V \tan A - v \sin B}{v \cos B} = \frac{30 \tan 15^\circ - 12 \sin 13^\circ}{12 \cos 13^\circ} = .446$$

$$\text{or } C = 24^\circ .32'.$$

The trigonometrical ratios must be observed with these equations. *Width and Focus.*—As before, assume we copy full-size,  $F=1$ , and  $x=F=15$  cms.

Inclination of negative is found from equation 10

$$\sin B = \frac{x}{v} \tan A = \frac{15 \tan 15^\circ}{12} = .33492.$$

$$\text{or } B = 19^\circ .34'.$$

Inclination of copy from equation 11

$$\tan C = R \tan B = \tan B$$

$$C = B = 19^\circ .34'.$$

Disregarding the trigonometrical ratios, we have the approximate results

$$B = \frac{x}{v} A = 1 \frac{1}{4} A = 18^\circ .45'.$$

$$C = RB = 18^\circ .45'.$$

This is a case in which  $V$  exceeds  $2v$ , while  $A=15$  deg.: therefore the errors in the approximate results are rather excessive. The error in each is less than one degree, the sum of the two exceeds  $1\frac{1}{2}$  deg.

*Width and Height.*—Still copying full size, we have,  $V=30$  cms. before, and

Inclination of negative is found from equation 13

$$\sin B = \frac{V^2 - v^2}{2Vv} \tan A = \frac{(30^2 - 12^2) \tan 15^\circ}{2 \times 30 \times 12} = .28133.$$

$$\text{or } B = 16^\circ .20'.$$

Inclination of copy from equation 14

$$\sin C = \frac{V^2 + v^2}{2Vv} \sin A = \frac{(30^2 + 12^2) \sin 15^\circ}{2 \times 30 \times 12} = .37528.$$

$$\text{or } C = 22^\circ .2'.$$

By approximate method

$$B = \frac{V^2 - v^2}{2Vv} A = \frac{(30^2 - 12^2) 15^\circ}{2 \times 30 \times 12} = 15^\circ .45'.$$

$$C = \frac{V^2 + v^2}{2Vv} A = \frac{(30^2 + 12^2)}{2 \times 30 \times 12} = 21^\circ .45'.$$

The combined errors are here less than one degree.



*Width, Height and Focus.*—In this case we cannot copy full size, and have to enlarge on a certain definite scale. We must therefore find the value of  $R$  before the angles can be calculated.

From equation 16

$$X = \sqrt{F^2 - v^2} = \sqrt{10^2 - 12^2} = 9 \text{ cms.}$$

$$R = \frac{F}{x} = \frac{15}{9} = 1 \frac{2}{3}.$$

$$\text{and } V = F + x = 15 + 9 = 24 \text{ cms.}$$

$$U = RV = 40 \text{ cms.}$$

Setting negative lens and copy at these distances, and knowing the value of  $A$ , we can find the inclination of negative from equation 18,

$$\sin B = \frac{x}{v} \tan A = \frac{9 \tan 15^\circ}{12} = .20095,$$

$$\text{or } B = 11^\circ 35'.$$

Inclination of copy from equation 19.

$$\sin C = \frac{F}{v} \sin A = \frac{15 \sin 15^\circ}{12} = .32352.$$

$$\text{or } C = 18^\circ 52'.$$

By approximate method.

$$B = \frac{x}{v} A = \frac{9 \times 15^\circ}{12} = 11^\circ 15'.$$

$$C = \frac{F}{v} A = \frac{15 \times 15^\circ}{12} = 18^\circ 45'.$$

As  $V$ , in this case, does not exceed  $2v$ , and  $A$  is not greater than  $45^\circ$ , the approximate results are very nearly correct.

If the angle  $A$  is unknown we can still find the values of  $x$ ,  $V$ , and  $U$ , as above; and then, after setting negative, lens, and copy at the proper distances, we can find tentatively the angle of inclination at must be given to the negative, alone, to secure horizontal correction. Assume that we find this angle to be  $32\frac{1}{2}^\circ$ , which is as far as we should be likely to get to the true value. Then, from equation 20, the required inclination of the negative can be found.

$$\sin B = \frac{Y}{R+1} = \frac{\sin 32\frac{1}{2}^\circ}{\frac{2}{1\frac{2}{3}} + 1} = .20056$$

$$\text{or } B = 11^\circ 34'.$$

Inclination of copy from equation 21

$$\tan C = R \tan B = .34110.$$

$$\text{or } C = 18^\circ 50'.$$

These angles are slightly less than those before calculated, owing to assumed slight error in measurement of angle which determines value of  $Y$ .

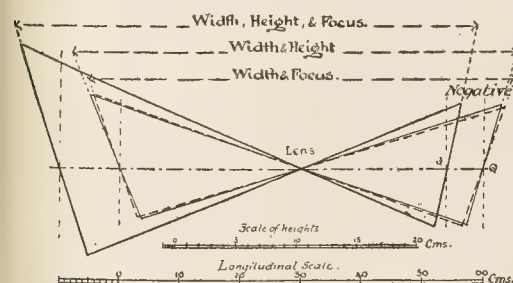


Fig. 6.

In figure 6 the methods of correction involving correct width and height, width and height, and width and focus, are illustrated. The position of the lens being fixed the various settings of negatives and copy can be compared. The arrangement securing correct width and focus is shown in dotted lines; that for correcting width and height in thin full lines; and that for securing width, height, and focus in thicker lines. The difference between the first two positions does not appear in the diagram to be very considerable, but the second position marginal portions of the image would be quite out of focus with a large aperture.

It should be noted here that the inclination necessary to secure focus must practically vary with the type of lens, when large apertures are used. The formulæ given are based on the assumption that the focal field of the lens is perfectly flat with near objects.

C. WELBORNE PIPER.

## A SOCIETY PROGRAMME.

As requested by a correspondent, we give below the programme of the Liverpool Amateur Photographic Association, referred to in our issue of last week:—

September 24: Lantern lecture, "Gorges of the River Ardèche," by G. E. Thompson.

The Ardèche rises in the mountains of the Cevennes. It is quite possible to travel through the Cevennes without a donkey! The lecture when completed will no doubt embody descriptions evolved by the lecturer after two visits to the district during last autumn and May of this year. At the time of going to press the slides were already finished; the libretto is simmering and awaiting inspiration. The following places are likely to be mentioned:—Aubenas, Vals, Thuyts, Jaujac, Antraigues, Largentière, Ruoms, Vallon and St. Martin. The crowning feature will be the more or less truthful accounts of two descents by boat through twenty-five miles of limestone gorges, amid crags and precipices stupendous, and shooting tempestuous and furious rapids surrounded by grand natural scenery unspoiled by the hand of man!

October 1: Lantern lecture, "The Life and Times of Shakespeare," by W. R. Yardley.

Synopsis: Shakespeare's historical and local environment—Parentage, Birth, and Schooldays—Marriage and Life in London—Theatres of the Period—His Work—Return to Stratford—Early Death—Monuments in the World—Portraits—Baconian Theory—Conclusion.

October 8: Lantern lecture, "Eastward Ho!" being reminiscent of a journey to Ceylon, India, and Burmah, by F. Gregory Jones.

Synopsis: Overland, through Mont Cenis to Brindisi—Suez Canal—Aden to Ceylon—Colombo Perydenia Gardens—Kandy and tea plantations—Southern India, including Dravidian Temples at Madura and Tanjore—Madras and Seringapatam—North-Western India, including Caves of Elephanta, Bombay—Kurrachee and Lahore—the Cities of the Ganges Valley, including Delhi—Agra—Lucknow—Cawnpore and Benares—at Darjeeling, in sight of the Himalayas—Mount Everest and Mount Kinchunga—Calcutta—Across the Bay of Bengal to Burma—The Great Pagodas at Rangoon and Mandalay.

October 15: Lantern lecture, "The Caucasian Alps," by Herman Woolley (President of the Alpine Club).

October 22: Beginners' demonstration, "Platinotype Printing," by C. F. Inston, F.R.P.S.

October 29: Monthly meeting. Lantern lecture, "By Battlement, Wall, and Tower," or Scenes in an Old Bavarian City, by James Shaw.

Synopsis: Limburg on the Lahn—Fine Romanesque Cathedral—A Noble Font—Regensburg—The Porch Beautiful—the long-drawn Aisle and fretted Vault—Bamberg—A Famous Crypt—Renovation as it should be—A Curious Monumental Tomb—Milteneburg on the Main—An Old World Market Square—Rothenburg o/d Tauber—A Unique Mediæval City—Walls, Towers, and Gates Galore—Picturesque Kindly People—A Glorious Market Place—The Three Town Halls—Quaint Interiors—The Fortified Church—The "Devil and the Rothenburger"—A Real Pageant—The Big Drink versus the Mighty Thirst—A Sudden Dive into the Middle Ages—Wonderful Representation by the Townsmen of the Siege and Capture of the City by Marshal Tilly during the Thirty Years' War. Characters splendidly realised—arms, armour, dresses, etc., carried out perfectly—Conclusion.

November 5: Practical demonstration, "Lantern Slide Making," by Fred. G. Tryhorn.

November 12: Lantern lecture, "Some Picturesque Midland and Cotswold Villages," by Wm. A. Clark.

Synopsis: The Avon Valley and Vale of Evesham contrasted and compared with the Cotswolds—The Heart and Soul of England—Shakespeare's Country—The Great Forest of Arden—The Dwellings of the People influenced by the Nature of the Country—Some Villages of the By-ways.

November 19: Practical demonstration, "Hints on Lenses for Photographers" (illustrated by lantern slides), by F. W. Parrott.

Synopsis: On Light; its propagation, reflection, and refraction—Formation of Images by Pinholes and by Lenses—Focus, Equivalent Focus, Conjugate Foci—Diaphragms: their value and use—Simple tests for common faults—Features of various types of lenses, Landscape, Portrait, Wide Angle, Rectilinear, Telephoto, etc.

November 22, Monday (Special): Lantern in use for members to test slides, from 8 to 9.30 p.m.

November 26: Monthly meeting. Lantern lecture, "Rambles and Scrambles on the Pacific Slope and in the Yellowstone Regions of the Far West," by Harold E. Young.

Synopsis: I Leave Japan—The Lonely Pacific—Honolulu—San Francisco in Earthquake Times—A Home on an Oil Field—Fruits at Fresno—The Yosemite Valley—Breaking the Trail to Glacier Point—Yosemite Falls—Prospecting Cloud's Nest—An Adventure with Bears—With the Red Indians—The Mariposa Grove of Big Trees—Back to San Francisco—Across to Salt Lake City—The Town of the Mormons—A New Trail in Wyoming—A Disaster on the North Fork of Snake River—Life on a Cattle Ranch—The Wonderful Yellowstone Regions—Geyser Land—Old Faithful—Among the Buffaloes—I Sight a Grizzly Bear—The Wild Animals of the Far West.

Entries for the annual competitions close November 30.

December 3: Practical demonstration, "The Printing, Developing, and Toning of Velox Paper," by W. F. Slater, F.R.P.S.

This demonstration will deal fully with the advantages of the various grades of this paper, and will be exceedingly instructive and interesting to all photographers using bromide papers.

December 10: Lantern lecture, "The City of Oxford," being a record of the society's Whitsuntide excursion, June 5 to June 9, 1908, by W. A. Taylor.

Synopsis: Views of the City and its College, as well as views taken in a drive through the Yorkshire villages of Botley, Cumnor, Northmoor, Stanton-Harcourt, and New Bridge. Included also will be views of Ashow, Kenilworth, and Warwick, visited by the party on the return journey.

December 17: Smoking social in club rooms.

December 24: No meeting.

December 31: No meeting.

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January 7: Lantern Lecture, "The Sun's Corona," by Rev. Father A. L. Cortie, S.J., F.R.A.S., Stonyhurst Observatory.

January 14: The prize slides of the 1908 competition of the affiliated societies will be shown. In this competition the L.A.P.A. won second place.

January 28: Practical demonstration, "Carbon Printing," by Ernest Scott.

Synopsis: Preparing the tissue—Sensitising the tissue—Drying the tissue—Keeping the tissue—The Use of the Actinometer—The Actual Printing—Transfer to Single Final Support—Development—Double Transfer Process Explained—Temporary Support—Final Support.

February 4: Lantern Lecture, "Some Spanish Scenes and People, and a Bull Fight," by Arthur Marshall, A.R.I.B.A., F.R.P.S.

Synopsis: To Madrid—On the way there—Halting places by the way—Biarritz—Bayonne, Feuentarabia, civilisation in the slums—San Sebastian, the seaside resort, *par excellence*, its palaces and buildings—Climbing the Sierras—The Night Ride—Nightingales and Crickets—Burgos and its markets, and Madrid—The Bull Fight, types of Spanish beauty.

February 11: Lantern lecture, "Mountaineering in Skye," by Henry E. Bowron.

Synopsis: The Coolin—Sligachan—Sgurr nan Gilleann—Ridge Scrambling—Thirst—Climbing light—Camping out—Clach Glas—The Waterpipe Gully—Alleged wit—A First Ascent—How to Take Pictures—The Bhastair Face Traverse—Corrie Labain—The "Inaccessible" Pinnacle—Sgurr Alasdair—Amphibious Climbing—N.E. Ridge of Ben Nevis.

February 18: Lantern lecture, "May Certain Phases of Photography be Reckoned Among the Fine Arts?" by Lieut.-Colonel A. Grimshaw Haywood, V.D.

February 22, Monday (Special): Social evening and whist drive.

February 25: Monthly meeting. Lantern lecture, subject to be announced later, by Fred. W. Saxby.

March 4: Lantern lecture, "Painters as Story-Tellers," by Rimbault Dibdin.

Synopsis: The "Art for Art's Sake" Idea Considered—the Value of Subject in a Picture—The Teaching of the Past—Roman, Byzantine, early mediæval art—Religious Story-telling by Early Painters—Illustrated—The Birth of the Pictorial "Anecdote"—Illustrations of Stories, sacred and secular, and original inventions—The Services of Painters to Human Imagination in illustrating Bible story, history, and secular prose and poetry—The Seven Ages of Man, illustrated by notable pictures.

March 9, Tuesday (Special): Sale by auction of members' superfluous goods.

March 11: Practical demonstration, "The Oil Process" (by request) by Chas. F. Stuart.

March 18: Lantern lecture, "Spring Under Italian Skies," by Dudley Johnston.

Synopsis: Records of Sunny Days at the Italian Lakes and Verona—We Arrive at Lake Maggiore—Baveno and the Borromean Islands—The Lakes of Orta and Mergozzo—The Lake of Como—Menaggio—Varenna—The Tremizzina—Days on the Lake—Como—Milan—Verona—Venice, the Ancient Mistress of the Seas—the Beauty of Sunshine and Colour—Her Treasures of Art—The Pathos of December.

March 25: Monthly meeting. Lantern lecture, "Poetry and Photography of the English Lake District," by Dr. John W. Ellis, F.E.S.

April 1: Lantern lecture, "My Rambles with a Camera," by R. Davies.

April 8: No meeting.

April 15: Demonstration on "Stereoscopic Photography" (by lantern illustrations), by W. H. Tomkinson.

#### LECTURES AT THE L.C.C. SCHOOL OF PHOTO-ENGRAVING.

A SERIES of lectures has been arranged to be given by various specialists at the L.C.C. School of Photo-Engraving, Bolt Court, Fleet Street, on Wednesday or Thursday evenings from October 1908, to April 1, 1909, as shown below, at 8 p.m., upon subjects of interest to all engaged in any of the crafts concerned with illustration: in photography, and book, magazine, or newspaper production. Admission is free by ticket to be obtained upon application at the School.

ON PARTICULAR SUBJECTS, BY VARIOUS AUTHORITIES.

1908.

October 1.—A. Johnson: "The Selection of Photographs and Drawings for Illustrated Papers."

October 8.—G. H. Palmer, B.A.: "MS. Sources of Type Printed Decoration of Books."

October 15.—F. C. Tilney: "An Artist's View of Current Reduction."

October 22.—F. C. Batter: "Large Size Engravings and Illustrations for Publishers."

November 4 (Wednesday).—Will Rothenstein: A lecture.

November 11 (Wednesday).—W. H. St. John Hope: "The Art Treatment of Heraldry."

November 18 (Wednesday).—E. F. Strange: "Book Ornament."

November 25 (Wednesday).—W. Seymour: "Beauty and Simplicity in Art."

November 26.—A. J. Newton: "Some Considerations Affecting Photo-Mechanical Etching."

December 4.—W. Gamble: "Max Levy Etching Machine."

December 11.—Albert Etching Machine.

December 18.—G. Venner Dear: "Mark-Smith Etching Machine."

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January 7.—Arthur Cox: "The Commercial Side of a Photo-engraving House."

January 14.—M. H. Calmels: "New Considerations on the Theory of the Cross Line Screen."

January 21.—C. E. Kenneth Mees, D.Sc.: "Some Applications of Theory to Practical Photography."

January 28.—R. Vincent: "The Process Man—A Character Study."

February 4.—A. G. Symmons: "Application of Photography to Lithography, including the Bitumen Grain Process."



February 11.—Colonel G. N. Grant: "The Production of Ordnance Survey Maps."  
 February 18.—A. J. Rowley: "Oils, Colours, and Varnishes in Relation to Lithographic Tin and Offset Printing."  
 February 25.—C. I. Smyth: "Colour Inks."  
 March 4.—J. R. Riddell: "Three-Colour Printing."  
 March 11.—J. Widdop: "Some Experiences of Lithography and Photo-Lithography."  
 March 18.—Arthur S. Newman: "The Design and Construction of Lithographic Cameras."  
 March 25.—A. Mackie: "Some Aspects of Technical Photography."  
 April 1.—H. W. Bennett: "Photography of Machinery."

## THE OPACITY OF BONES TO ROENTGEN RAYS AS AN INDICATION OF AGE.

(A Paper in the "Scientific American.")

ACCORDING to the law of Flourens, the duration of the period of life which bears a definite relation to longevity, and, in particular, the time occupied by any animal in attaining its maximum stature is a definite fraction, constant for all the individuals of the species, of the duration of the animal's life. Now, the maximum stature is attained simultaneously with the maximum development of the skeleton, and, as the weight of the skeleton is a function of the amount of mineral salts which it contains, the law may be expressed in a more mathematical form by saying that the percentage of mineral salts in the bones of all animals of the same species may be represented by similar curves of growth and decline, which will differ only in the values of individual constants.

Professor Charles Henry, taking advantage of the possibility of determining, indirectly, the mineral content of bones in the living subject, by means of their opacity to Röntgen rays, has been examining the hands of a large number of human subjects of various ages in order to verify the law of Flourens.

Henry used a Röntgen tube with a double anode, a Carpentier tube, and Lumière Sigma photographic plates. In order to eliminate the influence of variations in the tube and the coil, simultaneous radiographs were made of the hand and of a strip of aluminium foil of varying thickness, which served as a standard. After the plates had been developed the films were stripped from the glass, and the degree of transparency of certain parts was measured with a D'Arsonval diaphragm photometer. As the films are negatives, the transparency of the film is evidently proportional to the opacity of the bone. The portions of the film selected for photometric measurement were the image of the aluminium foil and usually that of the third phalanx of the middle finger. Finally, one of the films was taken as a standard, the aluminium strip of that film being compared in the photometer with the aluminium strip of each of the other films. The source of light for the photometer measurements was an Auer burner, the light of which was diffused by a ground glass screen. The opacities of the bones were expressed in thickness of aluminium.

From his examinations of subjects of various ages Professor Henry has deduced a maximum opacity at from 30 to 32 years (the age at which the height and weight normally reach their maxima), and a minimum opacity at 45 years. Tribob has supplemented these radiographic results by analysing the ash of bones of deceased persons of various ages and both sexes, with special reference to the percentage of calcium phosphate. The results of the chemical analysis confirm those of the radiographic examination, but appear to indicate a second minimum of opacity at 65 years of age.

The measurements that have already been completed are too few to warrant the drawing of more definite conclusions. A great many terminations will be required in order to establish the mean curve and find the positive or negative deviation corresponding to any given age. After all this has been done it will be possible to draw conclusions with respect to mean longevity and to calculate the "expectation of life" of a person of given age and measured opacity. It will then be possible also to calculate the personal coefficient of correction, and from this to establish life insurance premiums on a more equitable basis than is furnished by tables of mortality. But it would be a waste perhaps to ask insurance companies to change

a system which they have found so profitable or to endeavour to induce the insured to submit to an examination which would result in condemnation to death at a more or less distant date.

JACQUES BOYER.

## Photo-Mechanical Notes.

### Metal Printing Plates.

The production of a metal plate for half-tone and other processes, in which copper points are distributed throughout a zinc-plate, has been described in the recent specification (No. 9,500, 1908) of F. A. Roux, 12, Rue des Concours, Paris. The metal is obtained by first covering the zinc metal base with a layer of metal for printing (copper) and afterwards forming by mechanical pressure a large number of very small and fine holes which extend into both metals, the depth being the thickness of the superficial layer of copper.

The plate is next ground so as to form a smooth surface in which copper points appear in the midst of zinc points. In practice a sheet metal base (zinc, for example) is covered with a layer of copper, which is polished; then with an engraved matrix there is formed, by pressure, a chequer composed of small cavities very near together in this plate of coppered zinc. The surface of the plate thus matrixed is polished and then covered with small holes very close together in such a manner that the polishing produces a very smooth surface. The polishing reaches at least to the bottom of the small cavities, and the surface thus obtained shows points of copper which are those obtained in the plan of the bottoms of the small cavities, and points of zinc which are those of the subjacent metal uncovered by the wear due to the polishing of the copper which covers them.

These metal plates are very suitable for photo-engraving, heliographic engraving, and photo-lithography, either by directly applying a photographic image on the metal or by exposing the sensitized metal under a negative to obtain an etched plate.

In certain cases, after having applied a very thin layer of printing metal (copper) on the metal base (zinc), it is possible to transfer on to the surface of the metal which forms the covering a proof in fatty ink. Treatment with an acid which dissolves the metal in the part not protected by the fatty ink then follows, and, finally, the plate is cleaned to remove the protecting ink. A plate is thus obtained bearing the metallic image in slight relief; if required, a roller can be passed over the surface to level it.

### PHOTO-MECHANICAL PATENTS.

THE following patent has been applied for:—

STENCIL PLATES, No. 18,021. Improvements in stencil plates and in the process of reproducing drawings or maps by photo-lithography, photo-etching, zincography, or similar processes. Frederick Samuel Buckingham, 68, Primrose Mansions, Battersea Park, London.

### FORTHCOMING EXHIBITIONS.

September 11 to October 24.—Photographic Salon. Sec., Reginald Craigie, 5A, Pall Mall East, London, S.W.

September 17 to October 24.—Royal Photographic Society. Sec., J. McIntosh, 66, Russell Square, London, W.C.

October 13 to 17.—Southampton Camera Club. Entries close October 6. Exhibits by October 8. Hon. Sec., S. G. Kimber, Oakdene, Highfield, Southampton.

October 14 to 17.—Rotherham Photographic Society. Entries close October 5. Sec., H. C. Hemmingway, Tooker Road, Rotherham.

November 23 to 26.—Lancaster Photographic Society. Sec., J. Holt, 11, Fern Bank, Lancaster.

December, 1908, to January, 1909.—Kiew International Photographic. Sec., S. T. Horovitz, Technical Society, Kreshchtatik, 10, Kiew, Russia.

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January 6 to 27.—Northern Photographic (Manchester). Entries close December 11, 1908. Sec., S. L. Coulthurst, Broad Oak Road, Worsley, Manchester.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents were made between August 24 and 29:—

**LANTERN SLIDE BOX.**—No. 17,761. Improved box for holding lantern slides and the like. William Frederic Butcher, 322, High Holborn, London.

**CINEMATOGRAPH-PHONOGRAPH.**—No. 17,765. Improved means for effecting the synchronous running of gramophones and the like, and cinematographic apparatus. Alfred Wrench and William Engelke, 4, South Street, Finsbury, London.

**DEVELOPING APPARATUS.**—No. 17,907. Improved apparatus for developing photographic plates or films. Arthur Woolsey Blacklock, The Union Workhouse, Gateshead.

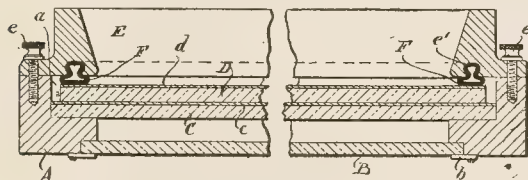
**DAYLIGHT DEVELOPMENT.**—No. 17,914. Daylight plate developing tank for use in connection with single dark slides straight from the camera without having recourse to the dark-room. Abram Zeitlin, 4, Northbank Terrace, North Kelvinside, Glasgow.

**CINEMATOGRAPHS.**—No. 17,920. Improvements in or connected with phonograph-cinematographic apparatus. Thomas Ernest Raymond Phillips, 15, Water Street, Liverpool.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

**PRINTING FRAMES FOR COPYING SCREEN-PLATES.**—No. 10,802. 1908. The invention relates to a frame to be employed for the production of colour prints by successive staining in the different colours without moving the films. The frame is recessed to receive two plates, the original or negative and the printing plate, and on the main frame is secured by screws or otherwise a cover frame having a rubber cushion inside, which, when the cover is secured, presses firmly upon the film surface of the second plate, the latter carrying usually a bichromated film. The cover is deep and forms, with the plate and rubber cushion, a developing dish, allowing the plate to be treated while in place. At the other side of the printing frame is a removable light filter which allows parallel or conical light of the required colour to pass



and produce upon the second film the picture or pattern of the original. The second plate is printed by parallel or conical light of one colour, stained and developed, then recoated with emulsion, printed again by light of another colour and the process repeated for each colour employed, producing a true copy of the original.

The lower or main part A of the frame receives the light filter or coloured screen B at the lower side, secured by the buttons b or other simple means allowing it to be replaced. The frame A is recessed at a to receive the two plates C and D, C being the original and carrying a coloured film c on its upper surface, while the plate D has a bichromated or other film d, the two films being separated by the thickness of the glass.

The cover or second frame E rests on top of the flanged edges of the frame A and is secured firmly by means of the set screws e or other equivalent device. The lower side of the frame E is

channelled at e<sup>1</sup> to receive the india-rubber cushion F extending completely around the frame and pressing firmly upon the upper edge of the plate D. It will be seen that the frame E forms with the plate D and the india-rubber cushion F a developing dish of convenient depth and the film d can be treated in any desired manner without removing it from the frame or shifting its position in the slightest degree with relation to the plate C.

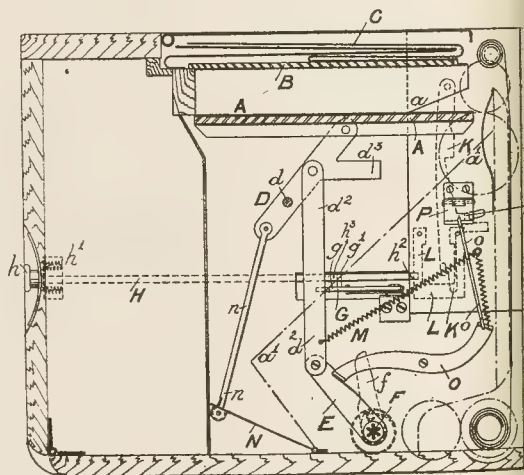
The method of using the frame for the reproduction of a colour picture or pattern, such (screen-plate) for example as a colour screen in which the colour elements form a mosaic, is as follows:—After the two plates C and D have been placed in position and the frame E secured on top, with a colour screen B, for example a red screen, at the bottom of the frame parallel light is passed through B and the coloured light resulting then passes through the screen or original film c reproducing exactly on the second film d the pattern of the original in the colour of the light employed. After suitable exposure in the manner the film d is stained appropriately and developed, leaving the red print. The plate D is recoated with emulsion and the plate B changed for a green screen and the process is repeated for the three colours or other number of colours employed in the original plate. The film d may then be transferred to paper if required.

Enlargements or reductions may also be produced by a slightly modified frame on employing lenses or reflectors to produce divergent or conical light, the printing frame being kept stationary throughout all the operations. The frame is in this case made so as to allow the original and copy plates to be separated at a substantial thickness of glass.

Reductions can be made from a large sized colour screen of a pattern, with the sensitive plate only in the recess, by focussing an image of the screen upon it. The frame is also useful for the production of colour blocks. A suitable method is to focus the plate through a mosaic colour screen and a different light filter for each block, develop and transfer to the block and bite the ground not protected; or the mosaic screen may be dispensed with and the three colours in the original picture copied successively.

As there is no relative movement of the films c and d the original picture or pattern can be reproduced with the greatest facility and accuracy, avoiding any special arrangement for registering. James Mark Child, 47, Harrington Street, Pearl Street, Derby.

**REFLEX CAMERAS.**—No. 10,469, 1908. The invention relates to reflex cameras of the type in which the reflector is pivoted at or near its centre between two rocking arms or levers which permit it to lie closely against the horizontal support and also against



inclined support, and is designed to provide mechanism for holding and releasing the mirror and other mechanism of the camera.

The camera body and the mirror A, the focussing screen B,



the hood C are of any ordinary construction. The reflector is pivoted between two levers D and D<sup>1</sup> between which it is free to swing loosely. The levers D D<sup>1</sup> are pivoted to the sides of the camera box by pins *d d*<sup>1</sup> and are connected by links *d*<sup>2</sup> with levers or cranks E on a rocking bar or operating rod F placed across the bottom of the camera box. The bar or rod F is provided at its end outside the box with an operating lever or handle *f* by which it is rotated in one direction.

The lever D is provided on its lower side with an arm or projecting member *d*<sup>3</sup> which when that end of the lever is drawn down engages and pushes back a latch G which holds it and retains the reflector A in its set or operative position until released. A similar latch G may be placed on the other side and the lever D<sup>1</sup> also provided with a projecting arm to engage therewith. The arm *d*<sup>3</sup> of the lever engages the shoulder *g* on the latch which prevents its return. The latch is provided with a projecting pin *g*<sup>1</sup> by which it is drawn back to release the lever D by a cranked rod H. The rod H extends to the front of the camera and is provided with a push knob *h* by which it is forced backwards to release the reflector being returned to normal position by springs *h*<sup>1</sup>. The rear end of the rod H is provided with an incline *h*<sup>2</sup>. Between the ordinary shutter releasing lever K and the side of the camera a swinging bracket L is placed with which the inclined end *h*<sup>2</sup> of the rod H engages when it is forced backwards and forcing the swinging bracket L outwards carries with it the lever K and releases the shutter. Thus the action of the rod is to first release the reflector A and then to release the shutter when set for a "time" exposure.

The reflector A is drawn back by the springs M attached to the connecting links *d*<sup>2</sup>, and the camera side.

The opposite or free ends of the levers D D<sup>1</sup> are connected to a hinged safety light excluder N by links *n* which raise the latter into close contact with the lower edge of the reflector A when drawn down.

A lever O is pivoted to the side of the camera box or body above the crank lever E the lower end of which the crank lever strikes when the latch G is released and the reflector A springs back. The upper end of the lever O is connected by a link *o* with a swinging plate P hinged to the side of the box or body above the lever O. A finger *k* on the shutter releasing lever K projects through the side and is engaged by the swinging plate P when the releasing lever is in the "instantaneous" position but is free of it when the releasing lever is in the "time" position. When the shutter is set for "instantaneous" exposure the movement of lever O and plate P releases the shutter independently of the inclined end *h*<sup>2</sup> of the rod H acting in advance of it. Thornton-Pickard Manufacturing Co., Ltd., Altrincham, Arthur Gray Pickard and Thomas William Piercy.

#### STEREOSCOPIC CINEMATOGRAPH PROJECTION.—No. 7,897, 1908.

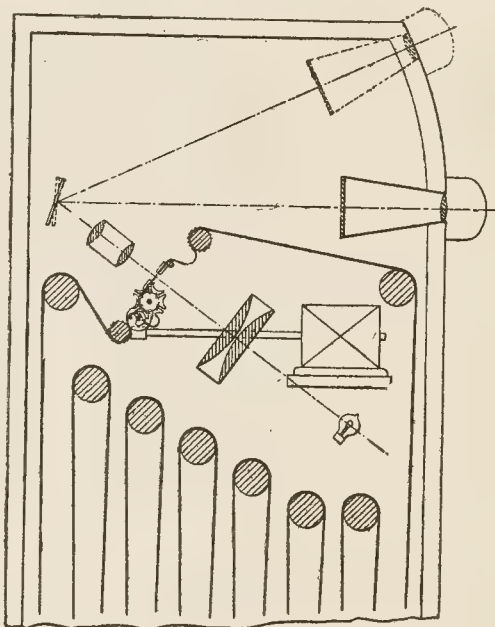
According to this invention a special cinematographic film is used, the stereoscopic elements being formed in pairs side by side, that is to say, the small images are arranged on each side of a central line and the length of the film employed for each stereoscopic couple corresponds to two and a half perforations. Such a film is prepared as follows using standard film of 3.5 mm. width and standard perforation.

The registering apparatus is arranged so as to obtain a succession of stereoscopic images simultaneously on two films which each correspond to a lens, and the width of each image not exceeding one half of the width of the available part of each film so that, in two distinct operations, the whole of their surface may be utilised. This apparatus is composed of two lenses with a stereoscopic separation, of two vertical slides guiding the films and exteriorly eccentric in relation to the lenses: two openings limit the width of the images to one half of the distance between the interior edges of the two rows of perforations, that is to about 12 millimetres, and to a height corresponding to a width of two and a half perforations, that is to about 11 millimetres. The feed mechanism operating simultaneously on the two films is composed essentially of two toothed drums the mesh of which gear with the perforations; these drums are keyed on the same shaft to which appropriate mechanism imparts an intermittent rotary movement such that the feed of the films corresponds to two and a half perforations.

The printing apparatus will be arranged to be contact print

brook, photo- therefore possess a travel of five perforations and the opening of its window will correspond to the height of two images and to the width of one only. This window will be movable in the transverse direction to imprint the two sides in two successive passages. A registering point on the original positive film determines the departure of each impression with each negative film. In the first printing, the left hand row of images will be imprinted, for example, then the window will be displaced transversely for the second printing on the same positive film, the register of the first start being observed, so as to obtain a positive stereoscopic film on which the corresponding stereoscopic images are juxtaposed; the transposition is ensured seeing that the internal edges of the negative images at the moment of sighting become external on the positive film.

The stereoscopic film thus obtained is therefore composed of a succession of stereoscopic images capable of being confined in an opening measuring approximately 24 millimetres in width by 11 millimetres in height; in spite of the smallness of these images it suffices to present them to view as if they were the usual size of normal stereoscopic images, in which the width of each image



corresponds approximately to the mean distance between the eyes.

The arrangement forming the object of the present system realises these conditions, by the projection of small images on a translucent screen of the mean size of 7 centimetres by 14 centimetres, this screen being viewed in a stereoscope giving the same result as direct images of large size and the succession of images adding the illusion of motion to that of relief.

The drawing is a diagram of the vertical section of an automatic apparatus for animated stereoscopy objects of the invention. It consists of a cinematographic projector, a stereoscope with translucent screen, an endless stereoscopic film, travelling over a series of rollers, a motor actuating the mechanism, the whole enclosed in a case; a small electric lamp in the focus of a condenser illuminates the window of the projector and a single lens projects, juxtaposed on the screen, the enlargement of the stereoscopic pairs of film. Two unwinding drums, toothed, actuated by the motor, ensure the continuous feed of the film. The mechanical organs may be placed in operation by the introduction of a coin. The distance of the prisms or lenses of the stereoscope from the roughened glass constituting the screen is variable to permit of accommodation to the sight of the spectator. Charles Dupuis, 18, Rue de Paris, Vincennes, France.

**SCOPIC CINEMATOGRAPH PROJECTION.**—No. 2,584, 1908. The invention is an arrangement for the production of stereoscopic relief in a cinematograph projection. Two cinematographs are used for taking the pictures, which run synchronously and are arranged so that only every second section is exposed. Consequently, on the strip a picture alternates with a blank of equal size. The film bands made in this way are so printed that on a positive film the pictures belonging to each other, for the time being, of both cinematographs lie side by side. This object can be attained by two ordinary cinematographs being used in which an aperture of the shutter is closed, or the latter is so slowly turned round that the same only releases every second picture space. A positive film band produced in this way can be projected with any ordinary cinematograph.

As printing apparatus one of the cinematographs is here used of which the picture-taking apparatus consists. One and the same positive band is next printed under the one negative picture-strip and then under the other whereby the parts which have remained blank during the first printing are filled out by the second printing. After the development a positive band is received which consists alternately of single pictures of the right and left-hand lens of the stereoscopic-cinematograph. Dr. Boris Weinberg, University, St. Petersburg.

**CINEMATOGRAPH MECHANISM.**—No. 11,551, 1908. The invention is for mechanism for driving a band of film and includes a crank-disc and a transverse frame, a connecting rod between the crank-disc and the frame, a plate carrying claws and intermittently raised and lowered by the frame, claws for engaging the band and means for causing the claws to periodically engage with and move the band and disengage. There is also a reciprocating frame, a groove therein inclined centrally with straight ends and a slight projection at the junction of the inclined portion with one of the straight portions. Carlo Rossi, 85, Via Madama Cristina, Turin, Italy.

## New Trade Names.

**CEAZIT.**—No. 304,457. Chemical substances used in manufactures, photography, or philosophical research, and anti-corrosives, but not including preparations for use in case hardening iron and steel, and not including any goods of a like kind to preparations for use in case hardening iron and steel. Alexander Waldberg, 9, Rue Benjamin Godard, Paris, France, Manufacturer. July 4 1908.

**CRAYONITE.**—No. 304,899. Photographic prints and photographic enlargements. Alexander Robert Hogg, 13, Trinity Street, Belfast, photographic specialist. July 22, 1908.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Notes on Bromoil.

There can be no doubt (writes Mr. T. H. Greenall, in "The Amateur Photographer and Photographic News" for September 8) that the gelatine of most bromide papers is rather too soft for the oil process when it comes to much brush work, and, of course, this is especially the case during the hot weather. The emulsion is apt to pull or rub up, and the use of any but the softest brushes is often attended with disastrous results. I have found, however, that treated, before making the silver print, with a solution of formalin in alcohol, these papers yield a surface which is everything the oil worker can possibly desire. Whether one uses the ammonia bath (which now does no hurt) or not, the papers so treated, whilst quick to take the pigment, allow any amount of after-work to be done on them, not excluding friction with an artist's flat hog-hair brush, and this after the paper has been in the moist condition for several hours. In fact, the worker has the same power of manipulating his work as in the oil process direct. The bath, which will keep and may be

used repeatedly, consists of 50 minims of 40 per cent. formalin, dissolved in five ounces of ordinary mineralised (methylated) spirit. The time of immersion is half a minute, and the paper is then pinned up to dry. Of course, several sheets may be hardened at one operation, but whether it is desirable to prepare more than is likely to be used during the next week or so I am not in a position to say. It appears necessary to use the formalin *before* making the bromide print, and not at later stages, when it has not proved successful in my hands.

## New Books.

"A Study of Splashes." By A. M. Worthington, C.B., M.A. F.R.S. (London: Longmans, Green, and Co.) 6s. 6d. net.

This is a well-printed and finely illustrated record of a remarkable photographic achievement. Mr. Worthington, with the assistance of Mr. R. S. Cole, Dr. E. B. Bryan, and Mr. G. F. Page, has for long time been engaged in the investigation of splashes, his method being that of photographing the splashes at intervals differing by about two-thousandths of a second, with exposures of less than three-millionths of a second. Naturally, no attempt was made by cinematographic methods. A drop or ball was allowed to fall into a basin of liquid and photographed at a certain interval of time after it commenced to fall. A second precisely similar drop was then caused to fall in exactly the same manner, and this was photographed on another plate after an interval one-thousandth of a second longer than the previous one. In this way a whole series of photographs was produced, giving practically the life history of the drop and its splash. The photographs illustrate the phenomena that occur both above and under the surface of the water, and the investigation covers the behaviour of liquid drops falling into different fluids, and that of polished and roughened spheres falling from various heights and at differing velocities into sundry media. From the physical point of view the work is most admirable, and though the subject may seem a trivial one to the uninitiated, yet the importance of the results obtained will be manifest to the reader.

Possibly the photographer will take the greatest interest in the manner of obtaining the records, and those unacquainted with the methods of practised scientific workers will perhaps be astonished at the comparatively simple arrangements that sufficed to produce the required results. Many valuable hints can be gathered from the chapter describing the apparatus. The catapult method of releasing the falling ball and the device for making the exposure at a predetermined time are both suggestive of ways of arranging shutter-testing apparatus. In regard to the photographic work, the results are beyond cavil, but still, considering that exceptionally sensitive plates were required, it seems curious that those mostly used were Thomas's A 1 ordinary, the Watkins number for which is only 13. Much faster plates were available. Then, again, we rather regret the fact that none of the results published are stereoscopic, as it appears to us that in work of this description the stereoscopic camera should be invaluable. Its use would not have added to the labour in any way, and the results might have given rather clearer records of some of the more doubtful details. The work done is, however, so admirable that we have no wish to criticise it, and we merely express a hope that the stereoscopic camera will not be quite ignored in further work done on the same lines. We refer on another page more fully to some of Mr. Worthington's expedients.

**OUTINGS FROM PLYMOUTH.**—Visitors to Plymouth and the West Country, more particularly those who carry a camera, will find the wants in reference to excursions, etc., anticipated for them and a quantity of useful information set forth in small space by Mr. Charles R. Rowe in a booklet bearing the above title. Mr. Rowe, in addition to being a photographer, has lived in the West Country for many years, and is, therefore, well able to advise those visiting the neighbourhood as to the best photographic localities and the best means of reaching them. Supplementary to brief topographical details, the cost of cheap day tickets by rail and steamer, with times of departure for both the outward and return journeys, are attached to each paragraph, thus relieving the visitor from the



ssity of consulting time-tables, etc. The little book is well  
trated, and may be obtained for the small sum of 3d. from the  
s of the "Western Morning News" Company, Limited, 31,  
rge Street, Plymouth.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

#### SATURDAY, SEPTEMBER 12.

deen Photo Art Club. Excursion to Parkhill.  
a Camera Club. Excursion to Bolton Woods  
and Stereoscopic Society. Outing to Wimbledon Common.  
pool Amateur Photographic Association. Excursion to Mount Wood,  
Moreton.  
a Suburban Photographic Society. Excursion to West Wickham; A. E.  
Bache.

#### TUESDAY, SEPTEMBER 15.

chester Amateur Photographic Society. "Amongst the Lakes and Fells of  
Lumberland with a Camera." J. Hayward.

#### WEDNESDAY, SEPTEMBER 16.

y Photographic Society. Excursion to North and South Kilworth. G. B.  
Morgan.  
h Middlesex Photographic Society. Lantern Slides. G. E. Williams.  
a Suburban Photographic Society. Portfolio and Print Competition.

#### THURSDAY, SEPTEMBER 17.

on and Provincial Photographic Association. Business Meeting.  
end-on-Sea Photographic Society. *Photographic News and Photography*  
Prize Slides.  
sworth Photographic Society. Exhibition of Home-Made Apparatus;  
T. W. Goulding, K. G. Collins, and A. E. Cope.

LEEDS PHOTOGRAPHIC SOCIETY.—The members of this Society had  
most enjoyable excursion to Knaresborough on Saturday last, the  
inst. Although the weather was dull, there was a large muster  
members and friends. The party were met at the station by the  
Canon Hancock, M.A., Vicar of Knaresborough (an old member  
the Society), and under his guidance a most delightful afternoon  
spent. Through the kindness of Canon Hancock, permission to  
ograph had been obtained from the various owners of property in  
district.

The new lecture hall of the Leeds Photographic Society is at the  
Institute, Cookridge Street, and members of the Institute are  
admitted to membership at 5s. per annum, ladies 2s. 6d. The meet-  
ings are held on the Tuesday evening throughout the session, the  
Institute lectures being held on the Wednesday evening. The winter  
programme of the Society is now completed, and intending members  
will apply for a copy to the Hon. Secretary, Mr. R. MacKay, 69,  
on Street, Leeds.

## Commercial & Legal Intelligence.

DISSOLUTION OF PARTNERSHIP.—The partnership between Messrs.  
er Edward Jeffery, Campbell James Beckwith Edwards, and  
us Morison McLeod, carrying on business as photographic artists  
5 and 56, Mattock Lane, Ealing, under the style of "Jeffery,  
ards, and McLeod," has, by mutual consent, been dissolved as  
June 1. All debts due to, and owing by, the firm will be  
ived and paid by Messrs. Jeffery and McLeod.

BEXLEY HEATH BANKRUPTCY.—George Robinson Harris, trading  
s. R. Harris and Co., at 22, The Broadway, Bexley Heath, as a  
ographer, picture-frame maker, and wholesale stationer, has  
been adjudicated a bankrupt, and his public examination took place  
the County Court, Rochester, on Monday, September 7.

#### NEW COMPANIES.

MUENZER, LIMITED.—Capital £25,000, in £1 shares (12,500 prefer-  
). To take over (1) the business of a manufacturer of, and dealer  
all kinds of, photographic reproductions, photographic apparatus  
chemicals, picture frames, etc., carried on by M. Muenzer, at the

"Helios" photographic works, 336-340, Chester Road, Cornbrook,  
Manchester; and (2) the business of a photographic artist, photo-  
grapher, dealer in photographs, etc., carried on by the said vender  
at 71-5, Grosvenor Road, Manchester, and elsewhere, as the "Great  
Britain Fine Art Company." No initial public issue. The number  
of directors is not to be less than three nor more than seven. Max  
Muenzer is one of the first. Qualification (except Max Muenzer), £250.  
Remuneration as fixed by the company. Registered office, 336-340,  
Chester Road, Cornbrook, Manchester.

NOBLE'S DRUG STORES, LTD.—Registered August 27. Capital  
£1,000, in £1 shares. Objects: To adopt an agreement with W. D.  
Noble, and to carry on the business of chemists, druggists, dealers in  
photographic requisites, etc., as formerly carried on by him at 2,  
Wells Street, Cable Street, E., as Noble's Drug Stores. Private  
company. Registered office, 2, Wells Street, Cable Street, E.

## News and Notes.

BLACKBURN AND DISTRICT CAMERA CLUB.—The hon. sec., Mr.  
Arthur Clayton, advises us of the change in his address, which is  
now Wycollar Road, Revidge, Blackburn.

BOLT COURT CLASSES IN PROCESS.—The winter session of the Bolt  
Court School of photo-engraving and lithography will open on  
September 21, and intending students may now obtain the prospec-  
tus and time table by applying to the Principal, at 6, Bolt  
Court, Fleet Street, E.C. The popularity and excellence of these  
classes is attested by the numbers who attend them and the  
results achieved, and the small fees required bring them within  
the reach of all who are employed in or qualifying for trades or  
occupations upon which the instruction given at the school has  
a distinct bearing. The following is a list of certain of the  
evening classes for students in process work.

Section I.—*Photography for Reproduction Processes*.—The pre-  
paration of originals for reproduction; teacher, F. W. Brookman.  
Mondays or Fridays, 7 to 9.30 p.m.

Line and continuous tone negative making (beginners); teachers,  
A. J. Bull and W. J. Smith. Tuesdays, 6 to 8, or 8 to 10 p.m.

Advanced line and continuous tone negative making; teachers,  
the Principal and W. J. Smith. Wednesdays, 7 to 9.30 p.m.

Technical photography for catalogue illustrations.

Screen negative making; teachers, the Principal and A. J. Bull.  
Mondays, 7 to 9.30 p.m.

Tri-colour block making; teacher, the Principal, assisted by  
A. J. Bull and A. Anning. Thursday or Friday, 7 to 9.30 p.m.

Section II.—*Processes for Relief Printing*.—Line blocks on zinc,  
brass, and copper. Mondays or Fridays, 7 to 9.30 p.m.

Tone blocks on zinc, brass and copper. Tuesdays or Thursdays,  
7 to 9.30 p.m.

Fine etching. Wednesdays or Thursdays, 7 to 9.30 p.m.

Mounting process blocks. Mondays and Fridays, 7 to 9.30 p.m.

SCIENTIFIC PHOTOGRAPHY.—The Calendar of the Imperial College  
of Science and Technology for the session 1908-9, just issued, contains  
particulars of the instruction in scientific photography given in the  
chemistry department by Mr. Chapman Jones. A course of four  
lectures will be given during the first term. These lectures will  
be repeated if necessary in the second term. The syllabus includes:  
The aims of photography and a consideration of the elements of truth  
in pictorial representation; the functions of the camera or its equiva-  
lent; the production of images; the practical use of lenses; their  
focal lengths and apertures; the aberrations of lenses, especially  
chromatic aberration; their correction and their effects on photo-  
graphy; the principles of the operations concerned in the production  
of negatives and prints; the relationship between the original object,  
the negative, and the print.

A course of about twelve lessons in practical work will be given  
during the second term. This will include: The measurement of  
the focal lengths and apertures of lenses; the production of nega-  
tive from solid objects, diagrams, engravings, line drawings, book

illustrations, etc.; experiments on the effects of colour in photography; the preparation of lantern slides, silver prints by development, platinum prints, and carbon prints.

MR. C. A. G. BROWNE, having sold his interest in the lease of Nos. 53 and 54, Wych Street, to the London County Council, he has removed his advertising offices to No. 20, Wellington Street, Strand, W.C.

At the British Association Congress, Professor Wager, according to the "Manchester Daily Guardian," credited plants with certain photographic functions. His theory is, that by means of a peculiar property of their outer layers some leaves act as lenses. "Convex formations," the Professor said, occurred practically in all leaves, but were most strongly marked in plants grown in the shade. He suggested that their function might be to promote a more effective distribution of the light, upon the absorption of which by the chlorophyll, or green substance of the plant, depends the food supply of the plant; or they might bring about the stimulus by which the plant moves its leaves so as to receive the maximum amount of light. By means of the lenses the plant could perhaps to some extent perceive the difference between light and darkness, and the movements of the plant might be modified accordingly. Moreover, as excess of light tends to destroy the plasma chlorophyll, it is of great importance that such should be evenly distributed from a point within the cell instead of acting injuriously by excess at the surface and failing to reach the deeper layers." It is further stated that remarkably clear photographs were shown upon the screen taken through the lenses of leaves—photographs (reproductions must have been meant) of Huxley and Darwin, of the author's niece, of landscapes, and so on. Plants that grow in the shade appear to be mostly gifted with these wonderful capacities.

## Correspondence.

\*\* We do not undertake responsibility for the opinions expressed by our correspondents.

\*\* Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

### THE HYPO BAG.

To the Editors.

Gentlemen,—Noticing your paragraph, "Frilling," in your "Answers to Correspondents" of September 4, we think it possible your correspondent is using hypo solution too strong. Some years since we had a complaint from an operator that some plates would not fix, and found this to be the reason.—Yours faithfully,

Southgate,

September 7, 1908.

WELLS AND CO.

### SOCIETY PROGRAMMES.

To the Editors.

Gentlemen,—Noticing your paragraph in to-day's "British Journal of Photography" re "Society Arrangements," as our secretary is from home, I send you the above society's prospectus for the coming session, and will be glad if you will include our fixtures in your "Societies" column. Your remarks re the Liverpool Amateur Photographic Association's fixture-list has made me curious to see it, and I think there would be many others like myself in this way. Do you not think it would prove of interest to a great many of your readers if you would publish one or two of the best fixture lists sent? I am sure it would give some societies a few hints which would be useful at this time.—I am, yours truly,

Edinburgh Photographic Society,

13, South St. David Street, Edinburgh.

J. F. DUTHIE.

[We hasten to do our Edinburgh friends the justice of saying that their season's programme reaches us with a full list of fixtures up to June, 1909. We reprint the Liverpool programme in another column.—E.N.S. "B.J."]

## Answers to Correspondents.

- \* All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.
- \* Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.
- \* Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & CO. 24, Wellington Street, Strand, London, W.C.
- \* For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street Strand, W.C. undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.

### PHOTOGRAPHS REGISTERED:—

- J. Yeoman, Bedale, Yorkshire. Photograph of the Bedale Cricket Club.
- A. R. Siddals, Wood Lane, Newhall, Burton-on-Trent. Photograph of a View of Burton-on-Trent on a Cask.
- The Rev. J. Ward, St. Mary's, Lanark. Photograph of Proposed Church of St. Mary's, Lanark, with Plan. (From a Drawing.)
- G. C. Smith, The Studio, Giffnock, near Glasgow. Photograph of Geo. Gray, Junr., King's Prisoner.
- C. E. Willis, 92, Newport Street, Bolton. Photograph of the Bury Football Club, Season 1908-1909, with Names.
- H. R. Edmonds, Trading as Whitfield Cosser & Co., 3, High Street, Devizes. Photograph of the Picture Gallery and Photograph of the Drawing-room of Devizes Castle.

CHANGING-BAG.—Would you kindly tell me through "B.J." the cheapest way to make a 1-plate changing bag, what material should have to get, and about the price I should have to pay?—OLD READER.

When you can get a changing bag of excellent make and pattern, such as Beresford's, for 7s. 6d., it is hardly worth your while to make. "Ruby Christia" (from any large photographic dealer) used with one or two thicknesses of best thin silesia lining are suitable materials.

BUILDING CAMERA.—Will you kindly inform me where I can obtain a copy of a book on stand camera (1-plate) building, one about 6d. or 1s.?—G. W. B.

We know of no such book. At the present price of half-plate camera sets, we cannot believe there is any demand for such a publication.

TIME DEVELOPER.—Please quote in your next issue a formula for a pyro-soda non-staining time or stand developer for portraiture to use at 65 deg. F., development to be complete in 6 minutes suitable for the development of contrasty subjects, such as camp photos where the subjects have sunburnt faces taken against white tents?—PYRO.

The pyro-soda developer advised by Messrs. Wratten and Wainwright for their plates just about answers to the conditions named in your query.

LENS QUERIES.—1. I shall be greatly obliged if you will inform me on the following points. If a lens at  $f/8$  gives a correct exposure in 1 sec., what exposures would be right for same lens at  $f/4.5$  and  $f/6.2$  respectively? 2. If a  $9\frac{1}{2}$  in. lens at its natural focal distance gives a correct exposure at, say, 1 sec., what exposures will be necessary for same lens and aperture at, say 8 ft. and 10 ft. respectively from the object?—H. KENNETH.

The exposure is proportional to the square of the aperture number, that is, if  $f/8$  requires 64 secs.,  $f/4.5$  requires 11.25 secs. and  $f/6.2$ , 38.44 secs. Dividing these times by 64 we get .18 secs. for  $f/4.5$  and .6 sec. for  $f/6.2$ . 2. In the case of the object 8 ft. distant the exposure compared with that at normal extension is  $1\frac{1}{4}$ ; in the case of the object 10 ft. distant, the ratio is almost exactly  $1\frac{1}{2}$ .

SULPHIDE TONING.—I am enclosing two prints, which I have tried to tone by the sulphide method. I have done a good many before but have never had this trouble before. The prints were made on Barnet extra rapid bromide paper, developed with Mequin, then fixed for fifteen minutes, and well washed and dried. I used the toning formula given on page 325 of the "B.J.A." After bleaching



shed them from ten to fifteen minutes, and then alumed for three minutes, rinsed, and toned. I might say the black white prints were excellent beforehand. Also, can you tell me how to prevent blisters on prints during toning?—PRINTER.

The only suggestion we can make is that your sulphide solution is stale. Hypo has evidently been at work on at least one print has nearly destroyed the image. Sulphide solution that has deteriorated always contains hypo. Blisters in sulphide toning are always formed if the prints are left in the sulphide too long, than five minutes is always risky. The best precaution is to immerse the prints with a formalin bath before toning. Also be sure all solutions are of about the same temperature. When the prints come out of the sulphide bath they should be soaked in water for a few minutes before washing. If put immediately under a stream from the tap blisters are almost certain to appear.

CAMERAS.—I am much struck with the remarks made *re* small cameras in this week's "Analecta," as it strikes me that it is just what I want. Can you give me the name of the firm that supplies cameras referred to, or the name of a similar camera, and where I can get it? I think that if the lens was a modern anastigmat it would be a plate about 1½ inches square, say, quite crisply, and with a depth of focus at, say,  $f/4$ , which would be very convenient. Don't you think that the grain of the plate would make the prints look rotten if enlarged to 15 x 12?—OTHELLO.

Messrs. Jules Richard, 23A, Albemarle Street, London, W., supply the best camera of this class. There are plenty of plates which will enlarge satisfactorily to the dimension named, but the price must be thin and full of detail.

T.—If the goods sent were not according to pattern you would have returned them at once and not have used them. With reference to the broken frame, you must bear in mind that most of those who enlarge for the trade announce on their circulars that they are not responsible for damages in transit. With regard to the enlargements, we can express no opinion whatever, we have not seen them, or the originals from which they were made. You must keep in mind, however, that you must not expect first-class and artistic work for a small price. If the case reaches County Court the judge will have to decide if the work is fair for the price paid for it. He will also have to decide who should bear the cost of the warehousing at the railway station. If you refer the matter to the Professional Photographers' Association they will probably get the matter settled for you quickly, and to your satisfaction—that is, supposing you are a member of that association.

ENLARGING LENS.—When using enlarging lantern I find the objective becomes covered with condensed moisture and opaque as ground glass. Can you tell me the reason for this, and the remedy?—BEWILDERED.

The cause is evidently bad ventilation of the enlarging lantern. An arrangement for air to circulate in the lantern body and the part through the lens the trouble should cease.

ON PRINTS.—Would you be kind enough to let me know in the case of the cause of spots appearing on the prints when being developed. I toned about 300 prints in the same bath; 250 I developed on cards which were quite free from spots after going through the hot roller. The twenty that came from the enameller were covered in spots like the one enclosed.—SAM BRICK.

The spots are evidently due to particles of iron rust. Where they come from it is impossible for us to say definitely; but they appear to come from the enameller, as upon close examination we see that some of the larger ones have really indented the surface of the plate. Possibly some parts of the enameller had rust upon them when it was used.

RE.—For a special purpose I desire to convert the developed image on a lantern plate into a substance which shall appear pure white by transmitted light, and which shall remain unaffected by exposure by daylight. I have tried converting into ferrocyanide and iodine, but both show a distinct tinge of colour. I fancy the cyanide might do, but I cannot succeed in converting the image into cyanide. If you can in any way assist me to bring about the desired result, I shall esteem it a favour.—TRANSPARENCY.

We do not know of any silver compound that is white by transmitted light and insensitive. The whitest we know is silver iodide developed with ammonia. We should think that the only way of pro-

ducing a white image will be by either the carbon or dusting-on process.

A WATER-RATE QUERY.—I am writing to ask your advice on the following. I have always paid a water-rate of 5s. per half-year, until last December, when some meddling person made it their business to complain to the Water Committee that I used a large quantity of water for my business, and that I ought to have a water meter fixed. So the Council sent their men to fix one, and the water is charged at 6d. per 1,000 gallons. During the six months that the meter has been fixed I have used 17,000 gallons, thus making my water cost 8s. 4d. for the half-year instead of 5s., and then they are charging me rent on meter 3s. 6d. for the half-year, making it 11s. 10d. altogether. This is not what I mind so much, but that I cannot see it is fair that I am made to pay in this way, while there are two other professional photographers in the town who are not compelled to have a meter fixed. If I am to be made to pay, why not they as well? This I pointed out in a letter I wrote to the Water Committee soon after meter was fixed, and it was laid before their next meeting, but I never received any reply to it. I enclose you a copy of letter I sent to them. What I want to ask you is: Can the Council make me pay in this way if the other two do not? and what would you advise me to do in the matter?—UNFAIR.

All water companies and water boards have their own laws and by-laws, and one of them is, usually, that when the water is used for business purposes they can have a meter fixed so that the consumer pays for the actual quantity used. They can also charge a rent for the meter. The meter clearly shows that hitherto you had been using more water than you were really entitled to do. All you can do is to pay the account, and economise the water as much as you can in the future. That your neighbours have not been compelled to have a meter is really no concern of yours, and a matter in which, so far as we can see, you cannot directly ask for interference.

DISCOLOURED OIL-COLOURED PHOTOGRAPHS.—Enclosed two silver prints, painted thickly in oils, were taken to Ceylon. You see the condition they were in when opened. You will see on one I have removed some of the coating with a little turps. Both were in perfect condition when they left this country. I have known silver prints to fade a little, but never paint. If you could throw any light on this matter you will greatly oblige.—T. BRUCE.

The appearance of the pictures is certainly strange. Paint, even oil-colour, will not prevent a silver print from fading, and the fading, or staining, will show through the colour. Without knowing how the prints were toned, and the pigments actually used in the colouring, it is impossible to say the precise cause of the appearance. It would seem, however, that the final colour or glazing laid on the lights contained a lead compound which has darkened by exposure to some sulphurous emanations. Is it possible that the prints were "sepia," toned with sulphur? The photographs have been returned as requested.

H. C. L., J. A. C., E. A. RAYNER, AND OTHERS.—We will reply to your queries in our next issue.

ACID SULPHITE.—I was greatly interested in reading M. Balagny's article on the use of acid amidol as a developer for plates. Unfortunately, I have not been able to give it a trial owing to my inability to procure the soda bisulphite lye he mentions. Could you let me know through the medium of your paper: (1) Whether potass metabisulphite would be as suitable, and (2) what strength of solution would be equivalent to the bisulphite lye of 35 deg. Beaumé suggested. M. Balagny, I believe, mentions that a 5 per cent. solution would be about right, but as far as I can see 25 per cent. would be nearer the value. If I knew the strength of the bisulphite lye in regard to its percentage of pure salt ( $\text{NaHSO}_3$ ) I would, perhaps, be able to calculate the rest for myself.—GEO. L. STEVENS.

(1) We use potassium metabisulphite with perfect success, our formula being: Soda sulphite, 1 oz.; potassium metabisulphite, 1 drachm, and amidol or diamidophenol 40 grs. to every pint of the developer. This is not equivalent to M. Balagny's formula, but it works well with bromide paper. Sometimes we use bromide with it about ½ grain per ounce. (2) The commercial solution of bisulphite mentioned by M. Balagny can be obtained from the Lumière Co., 89, Great Russell Street, and your dealer can get it for you without any difficulty. We understand it to be

about a 50 per cent. or saturated solution, in which case it is impossible to make a metabisulphite solution of the same strength. The equivalence in development processes of sodium and potassium salts is so doubtful a matter that we prefer to use the actual solution recommended when testing the formula.

**ROYALTIES.**—Can you please give me the percentage usually asked for patent royalties, or direct me to the information.—H. F. T.

There is no regular scale; it is a matter of contract.

**NON-ACTINIC DYE.**—I want to stain gelatine films, so as to stop the passage of all actinic light. Could you recommend me a dye to use?—A. W. B.

Use a pair of films, one dyed with a mixture of tairazine and rose bengal; the other with methyl violet.

**P.O.P. STAINS.**—Will you kindly inform us what is the cause of stains appearing on backs of P.O.P. cards, as on the enclosed? You will note that on one the stain is appearing on the front as well as the back.—DIOCLE.

We cannot definitely suggest the cause of the stains without details of method of working. Possibly you are treating too many cards at one time, and so some do not get full benefit of the washing, etc.

**DUPLICATE NEGATIVES.**—Will you please let me know, through the "Journal," the best way to get good duplicates from negatives? I prefer a method of contact, with slow plates if possible. What would be the exposure at a given distance from a 16 c.p. electric lamp? What would be the best plate to use and what developer? Is it possible to produce really good duplicates?—DUPLICATE.

A very satisfactory method is that given on page 838 of the "Almanac," 1908.

**THIRTY YEARS' SUBSCRIBER.**—The A pattern has been most used, and has given the best results, partly, no doubt, because it has been longer on the market. Both are certainly good lamps, but B is not so convenient in use.

**PORTRAIT GAS LAMP.**—Could you tell me, through the medium of the "Journal," the makers of a gas lamp for portraiture with inverted mantles?—M. A. B.

The Tress Company, 4, Rathbone Place, Oxford Street, W.

**FIGURES IN GROUPS.**—Can you tell me the method of removing a figure from one negative and inserting in another, by means of hydrofluoric acid?—FLUORIC.

The negative with the figure to be introduced is first stripped from the glass. This may be done by the method given on page 498 of the volume for 1907, or by that given on page 391 of the current volume "for the repair of broken negatives." When the film is removed and washed it is dried between blotting-paper, which will keep it flat. When dry it is placed on the negative (laid on the retouching desk) in the position it is to occupy, and, with a sharp penknife, it, together with the film on the negative, are cut cleanly through to the glass. The film is then neatly scraped off the glass, and the film one, which will accurately fit the space, introduced and secured into position with a few touches of a clean solution of gum.

**AXAX.**—The four prints sent, focussed on different points of the newspaper, show that the lens has a very much rounder field than the generality of lenses of this type. You would be quite warranted in returning it to the dealer from whom you had it, for exchange.

**GROUP IN CONFINED SITUATION.**—We have the interior of a workshop to take, with the workmen at their benches and lathes. The workshop is fairly well lighted, but it is very long and narrow. The owners want all the figures good. The size of the picture is to be 12 x 10. Some of the men will be very close to the camera, as that cannot be placed very far back, while those at the far end of the shop will be 60ft. or 70ft. away. We have a R.R. lens (12 x 10), of 17in. focus, and a 10 x 8, which, when well stopped down, will cover the 12 x 10 plate. These are the only two lenses, except portrait ones, we have. Which would you advise us to use?—COMPY.

If you can get far enough back to include the whole of the subject required by all means employ the larger one. But in either case, in order to get the nearest and most distant figures in fairly good focus, a small stop must necessarily be used. The best way will be to focus with a middle size stop at nearly the centre of the

picture, and then stop down until the image is fairly sharp over.

**LENS QUERY.**—I have a large portrait lens offered to me and I think is a very low price. It is about 4½ in. in diameter and is said to take a 12 x 10 portrait. It bears the name of "Paris." I have not yet tried it, but I have misgivings, as the glasses has two or three small air bubbles in it, and slightly chipped at the edge. What I am in doubt about is Will the air bubbles and chip very materially interfere with quality? The price I am asked for the lens is four guineas.

The chip will practically in no way interfere with the view of the instrument, if it be covered with a touch of black varnish. As regards the air bubbles they are also of no consequence. Of the newest and most costly anastigmats have several air bubbles in them, but they are of no moment. Jamin had a good reputation as a maker of large lenses, and we should say that the value you have offered to you will be good value for the money.

**COPYRIGHT BLUFF.**—I have opened a business at the above address, and while the studio was building I filled up my time in the views of the neighbourhood for postcards, which I am now selling. Another photographer in the place, it now seems, has taken the same views, and made them copyright. He is now threatening me with a lawsuit, saying that he had already copied those views. Can he do so, as I took the views direct? He is "sore" at my starting business in the place, as he had had all the trade to himself. I know also he will do me no injury he can.—COUNTRYMAN.

Your neighbour can, of course, do nothing—but bluff making his views copyright he did not make the scene itself right. That is impossible. You have surely noticed the frequent instances of this sort of thing mentioned by our readers.

**J. C. AND CO.**—By all means adopt the dark blue fabric. It would prove very unsuitable as curtains for a photographic studio. It would be all right at first, but would not last long. The fabric would probably fade with the strong light in the course of a few months.

**R. C.**—It is quite outside our province to give directions for faded studio curtains, but we should not recommend you to do so to do the work yourself. Your best and cheapest way will be to send the curtains to a dyer. But we would advise you to satisfy yourself that they are worth dyeing, for in many instances when curtains have faded to the extent you say yours have, the fabric has become so rotten that it will not bear dyeing. The dyer will advise you upon this point.

**R. BORROWS.**—The reason the matt varnish, made according to formula in the "Almanac," is so coarse and granular is that too much benzole was added. The preparation of benzole depends on the coarseness or fineness of the grain. With a small proportion it is very fine, and with a large one it is coarse, as in the case sent. The only thing you can do is to make a fresh lot. At the same time we should advise you to add the benzole in small quantities at a time, coating a trial plate after each addition.

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## SUMMARY.

### THE TWO EXHIBITIONS.

R.P.S. EXHIBITION at the New Gallery opened yesterday, and may be visited every weekday from 10 to 10 (excepting from p.m.) until October 24. We give on pages 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Without any pictures of prominently outstanding character. The process is naturally somewhat fully represented, and practically every exhibitor not pledged to a given exhibition is represented. There is a large proportion of work from those who made their debut at the R.P.S. (P. 714.)

The scientific and technical section is largely made up of record photography, chiefly of natural history subjects. (P. 718.)

There are some notable three-colour prints, including one made in Autochrome. (P. 719.)

Autochromes form a separate section, and are shown in the Room. They include certainly some of the finest work yet in this process. (P. 719.)

Professional photography is represented by W. Crooke, H. Walter, and Furley Lewis. (P. 719.)

There is also a collection of photographs of celebrities exhibited in connection to the proposed collection by the Royal Photographic Society of photographs of eminent persons. (P. 721.)

The trade section a display of apparatus and of results obtained with photographic plates and papers is made by a number of the makers. (P. 721.)

The full programme of the lectures to be given, one on each day, during the run of the exhibition, is given on page 724.

THE PHOTOGRAPHIC SALON admits of convenient review owing to the arrangement of the exhibits into a comparatively small number of cases, each representing the work of one man. Autochromes, by E. J. Steichen, A. L. Coburn, and Baron de Meyer, are a strong feature of the Salon. (P. 725.)

PRINTING NOW AND TO COME.—Mr. F. C. Tilney, in discussing the place which the oil process is likely to occupy in the future, says that it will range itself with such methods as gum and platinum, which enable the photographer to exercise a large degree of what constitutes art. (P. 711.)

YEAR'S PHOTOGRAPHIC PICTURE-MAKING.—Mr. Snowden Ward says that the pictorial harvest of 1908 is containing "not too much of the very highest class." The output of the thirty or forty who may be acknowledged as in the front rank is closely followed by a large volume of pictorial photography which comes up to the standard of the leaders. (P. 710.)

## EX CATHEDRA.

### Congress, Gala, Tea, and Fireworks.

A prospectus which is not without a vein of unconscious humour reaches us in respect to "the great congress of photographers" to be held on Saturday, Sept. 26, at the Franco-British Exhibition. On this day, we learn, special concessions will be granted by the Exhibition authorities in the way of reduced charges for admission to the grounds and to the side-shows, and of free permission to photograph. These are obtainable through the organising secretary of the "congress," Mr. E. R. Human, 43, Whitta Road, Manor Park, E. To what extent the "congress" will bear out its dictionary meaning of "conference or friendly meeting for discussion" must be judged from the fact that the function is limited to about one hour's duration, during which time four addresses are to be delivered personally or by proxy. Mr. T. E. Freshwater is announced to take the chair at 7 o'clock in the Congress Hall at the head of the Court of Honour, though the prospectus leaves us in the dark as to the precise purpose of the meeting. There is the expressed anticipation that it will be the largest meeting ever held in connection with photography, but, so far as we can discover, no reason is assigned, beyond a possible economy to the amount of 3s. 5d. (what you save on the side-shows), why it should not quite appropriately be the smallest.

\* \* \*

### Backed Plates for Reproduced Negatives.

The importance of backing plates in reproduced negative making, whether the same size or enlarged or reduced, can scarcely be over-estimated. In a camera exposure the use of an unbacked plate may result in a little degrading of the shadows, and this may pass almost unnoticed, or in certain cases may be actually an improvement. But when this degradation is doubled between the original and the final reproduced negative, a loss of quality is sure to become apparent. The backing is so easily applied and so easily removed a few minutes later, when the exposure has been made, that no excuse can possibly be found for omitting the application. Where a negative is being made by contact from an enlarged positive, a printing frame being used, it is necessary to protect the pad of the printing frame from the wet backing, and for this a piece of plain black or dark brown paper should be used, free from any printed matter or attached labels. If the backing is applied very thickly this unevenness of tone on the protecting paper might be unimportant, but should there be only a thin coating, or thin patches on the coating, the light passing through the plate will be unevenly reflected, and an image formed of whatever there may be of pattern or printing on the sheet of paper used. The experiment may be tried by placing an unbacked quarter-plate behind a fairly soft negative, and then

between the plate and the back of the printing frame a piece of ordinary bold type newspaper. The proper exposure given and the plate developed, it will be found on examining the resulting transparency that the type will be distinctly legible.

### Enlarged Negative Making.

We recently came across a worker who complained that he could not get good enlarged negatives when working in the dark-room with a projection lantern. His negatives made in the camera by daylight were quite satisfactory, but his condemnation of the alternative method, which he found a satisfactory method when using bromide paper, was strong, and it seemed to us quite, unreasoning. An almost momentary investigation revealed the reason of his non-success, and afforded an excellent example of that lack of thought which so often characterises workers who have, unfortunately for themselves, been trained by rule-of-thumb methods, or in the so-called practical way. The easel was covered with white paper for convenience in focussing, and to this the bromide paper had always been pinned. When the enlarged negative was being made the plate was fastened up in the same way, resting on large drawing pins. Had this worker bought a dark slide, the metal division of which was painted white, he would have immediately realised that his plates would be degraded by

reflected light, but the familiarity of the white easel vented his giving the matter a thought. As soon as the paper was substituted for white, the focussing being on a white card resting where the plate was to be subsequently placed, the trouble ceased, and the negatives as clean as could be desired.

### Receptacles for Alum and Other Solutions.

A correspondent who, as a camera worker on a considerable scale, employs fairly large quantities of alum solution asks our advice as to the most suitable vessel in which such solution may be stored. Per other readers as well as he may be glad of a hint as to convenience in this respect of the so-called "acid jars" made by Doultons, of Lambeth. They are stone pitchers, are cheap, and very strong. They are made in different sizes, holding from half a gallon to three or four gallons, and have a handle, so that they can easily be carried about without spilling the contents. These vessels do not seem to be very generally known amongst photographers, but they are very excellent for all solutions, as hypo, alum, bichromate of potash, and the like. They are also very useful to those who save their silver residues on a small scale, as, being tall, the residue settles perfectly at the bottom, and the supernatant liquid is easily poured off without disturbing it.

## THE YEAR'S PHOTOGRAPHIC PICTURE MAKING

[The following short general review of the work of the year in pictorial photography gains in importance from the fact that it is by Mr. H. Snowden Ward, who, as editor of "Photograms of the Year," enjoys quite exceptional opportunities of seeing work which may or may not reach the exhibition walls. Mr. Ward, in his annual miscellany of photographic pictures, makes a selection more comprehensive and more catholic than perhaps any committee can make and hang, and, therefore, while awaiting the publication of the reproductions produced under his care, it may be useful for the reader to compare his general impression (described below) with the collections which obtain publicity at the Royal and Salon.—EDS. "B.J."]

THE Editor asks me for a forecast of the season's pictorial work, and in many years, writing at this time, before the first Press view, a forecast would have been fairly easy. This year there are distinctly disturbing circumstances. Thousands of the year's pictures, including hundreds intended for the shows, have passed through my hands; and without much doubt I might name a number that are pretty sure of being accepted. But much of the most interesting work of the year is beyond the ken of "Photograms of the Year," because it consists of Autochromes which we do not attempt to reproduce. Every one knew that these wonderful one-plate natural-colour transparencies were to be special features at the Royal, and now we have discovered that the Salon had an Autochrome sensation up its sleeve. Without much doubt the entry of the colour-record into the arena of art is to be the great feature of this year, as its triumph in the technical field marked the season of 1907.

To a very small extent the Autochrome show at the Salon has been discounted, for those who are in the centre of photographic activity, by certain private and semi-private exhibitions (as at the Lyceum Club) and by the reproductions in "Camera Work." The reproductions in the special number of "The Studio" have been open to the general public, but have not been quite good enough and striking enough to give an idea of the full achievement of the best colour men. The very fine Autochrome show at the Franco-British, again, is too technically triumphant to prepare one for what has been done and what is being shown at the Salon and the R.P.S.

While the Autochromes that should be shown this year will answer completely the argument that they must be hard, mechanical transcripts, they will also show to the critical observer that photographers will need to take up the study and the close observation of colour, for most of them are

floundering in dissonances and crudities that are just as hurtful as the monochrome falsities of tone and awkwardnesses of line and mass that were almost universal until a very few years ago. Probably the greatest real benefit of the Autochrome for the time will be its influence upon the tone-rendering of our monochrome prints, for many a man who does not seem affected by the harmonies in the natural landscape he photographs will be able to learn much more studying colour-transcripts.

Multi-colour gum has produced some startling work, and it will be interesting to note how much has been accepted. Instead of it, hung as most wonderful experimenting a year or two ago, should be rejected nowadays. The work that I have seen this year shows little advance in colour value, and the time will soon come, if it has not already arrived, when we must find that a picture in colour shall be at least as harmonious, pleasing, and true as it would be if executed in monochrome. The "house exhibition" of the Hofmeister and Müller work, from the point of view, will be more interesting than the great Salon, and many of its things can only be justified as magnificent experiments, not as pictures.

In monochrome the very wealth of material presents an enormous difficulty. There is not too much work of the very high class—in fact, photography has still far too little of original observation and spontaneous effort. But coming close to the thirty or forty men who may be considered great individuals, there is a mighty press of people doing good scientific work—even inspired with a modest inspiration—much must be rejected that will be quite as good as what is accepted.

The Americans, who are submitting largely, and who are joining the selecting committee of the Salon this year, may be expected to be largely represented—too largely, I fear, for the real good of photography. But that is politics beyond



Arbuthnot has more than maintained his position; Bland has done one thing—a great picture; Craig Annan, Keighley, Mummery, Furley Lewis, E. O. Hoppé, the Warburgs (especially Miss), H. Walter Barnett, and Speight, Frederick H. Evans, Mrs. Barton (more varied longer than ever), E. G. Boon, Mrs. Jeanne E. Bennett, and Mrs. Bracewell, A. H. Blake, Walter Benington, the Archibald Cochrane, F. H. Cliffe, Demachy (tackling complex problems than ever), Dührkoop, Dan Dunlop, Meyer, Gear, Dr. Grindrod, Aubrey Harris, Hensler, Ing, Inston, Charles Job, Kimber, Dr. Lynam, Marshall, Mer, Mahéo, Ward Muir, Miss McKeggie, Puyo; Miss Ford, Fred Radford, W. Rawlings, W. A. Stewart, H. Y. ons, Ward-Thompson, Mudie Thomson, W. Thomas, E. B. es, Percy G. R. Wright, Miss Willis and John M. White—amongst those whose names occur to me as being pretty acceptance if their work be submitted, for the old ones will well maintained their positions, and the new names some who have well proved their quality.

There are many who, a day or two before the receiving days, were uncertain or were not sending. Mrs. Käsebie and Percy Lewis are submitting nothing. Mrs. Caleb Keene, whose work is magnificent this year, just missed the Royal, I believe, by a misadventure at sending-in time.

Beyond our own shores, Germany stands still with grand achievement, but no notable new work or workers. France is much the same, save for a few Autochromes. Australia, Spain, Canada, and the Americans outside the Secession are unusually strong, and full of further promise, but much of their work will not go to the exhibitions. The Secession itself, after an absence of a year from English galleries, has much to show; and if political strings pull as I anticipate the Salon should be one of the very strongest for many years, but with a slaughter of some German, French, and British work which even so strong an exhibition can ill afford to lose.

H. SNOWDEN WARD, F.R.P.S.

[The above was written before the opening of the exhibitions. —Eds. "B.J."]

## OF THE FUTURE OF OIL PRINTING.

STION has been raised as to the legitimacy of classing oil—amongst photographs in an exhibition. It has been t by some that the people who are able by extraneous is to carry pictorial effect beyond the limits of a purely graphic image enjoy a somewhat unfair advantage over who are limited to the older and narrower resources. There ibly a righteous grievance here; but, for my own part, I it to be theoretical rather than practical.

The first place, no one can expect the promoters of exhibi- to cast out attractive works upon such a score, for it is st concern of a hanging committee, artistically and finan- that a roomful of pictures shall stimulate the emotions se who come to see it. In the second place, it may be d whether oil prints or "bromoids" can be invariably ed, especially when they are what is known as "straight." is less and less tendency to describe in catalogues the al variety of prints: the custom is more than ever to ll such technical matters in the larger consideration of al efficiency. If pictorial photography is to advance urther there must be no objection to the growth it custom. Moreover, it is practically impossible to the line at a point where control begins, for its work may nce at any stage in the making of a negative, and be car- n to the last touches upon a print. The only point n "pigmenting" differs from any other kind of control ere handling of the brush, which to some is easy and to embarrassing.

war I should be inclined to wage on behalf of non- uters would be in the cause of their reputation for artistic t should not come to be thought that one who develops age by the brush is necessarily possessed of more artistic e than one who does not. The idea should be combated ver it occurs. A man who can pigment well can do so in nce of the very ABC of photography; yet if he were a photographer he could use any other method of control, s gum-printing or local development in platinum with success. I do not imply that such methods would require than a few moments' instruction to the average intelli- t; but still, they do come within the pale of photographic calities, whilst pigmenting does not, and therefore the nter may be—as in my own case—no photographer in the r definition of the term. If I were a photographer I e I could make a show with gum; and, indeed, I have y amused myself with glycerine upon a platinum print.

Mr. Inston and Mr. Sinclair are clever pigmenters; but they are clever photographers also, and their successes are not due to any power denied to a photographer as such. If a man has artistic feeling he does not need a brush and pigment to demon- strate the fact. These arguments I adduce to substantiate my opinion that if there is an objection abroad as to pigmenters having an unfair advantage, it is purely a theoretical one with- out practical confirmation.

I know of one or two pictorial photographers who have attempted oil methods and discarded them after a short trial. Probably countless others have done the same with gum. What does that imply beyond some purely physical difficulty in the means of expression?

The "extra rope" that oil-printing affords may certainly be found in the capacity for repairing the misfortunes caused by unhappy conditions in a negative; but the older methods are not closed against such reparation, and at the worst who shall say that the destruction of an unsatisfactory negative and the making of a better is not as artistic a course as the vamping up of a print from it?

From examples that occur with more and more frequency one must admit that, as often as not, oil-printing is a delusion and a snare to many who dabble with it for the sake of some imagined distinction it carries. The force of its colour sometimes obsesses the aspirant who produces stodgy tracts of printer's ink that give the lie to all the delicacies and subtleties of real artistic work. Oil printing is not a magic process; it is not a short and easy cut to art. He who has not observed and learnt and given himself artistic polish will find it of less use to him than the methods he has become accustomed to; but to him upon whom art has laid her blessing oil-printing offers more convenient ways of arriving at a desired effect than do the other methods of control, and that is all about it.

Its future is probably that of gum-printing, glycerine-platinum, and all the rest. It will be a favourite with such as it suits, but it will never hold the field pre-eminently.

I do not believe that any body of men organising an exhibition will regard it as a class of work outside the pale of photography. There is no place for a distinct class between photo- graphy which is reproductive and dependent upon applied science and the graphic arts which depend only upon the eyes and the brain of the artist. That is the ultimate classification. Fingers and apparatus do not count for much in the matter after all.

F. C. TILNEY.

## THE ROYAL PHOTOGRAPHIC SOCIETY'S EXHIBITION.

YESTERDAY the New Gallery opened its doors, and daily, from 10 to 10 at night (closed, from 6 to 7), until October 24, the public can see for itself a really great and comprehensive exhibition of many important branches of photography. A description of its four sections makes rather large demands on our space, but this year we have nevertheless departed from our usual practice of treating one section only in an issue. Instead, we present a complete review of the whole exhibition, together with some photographs of the selecting committees, and a portrait, taken on selection day, of the untiring secretary, Mr. J. McIntosh, to whose Scottish persistence and judgment a very large share of the success of the R.P.S. enterprises at the New Gallery must be ascribed. Perhaps the portrait conveys more of the "holy calm and quiet of faith's serene repose" than one looks for in an

organiser such as Mr. McIntosh, but then the harvest of what had on that day been gathered in, and the secretary might have had a justifiable breath before passing to a breathless fortnight of hanging and cataloguing.

Our review of the exhibits follows almost exactly a tour of the rooms, made as follows:—

Pictorial Section—West Room.

Technical and Colour Section—Gallery and North Room.

Professional Work—South Room.

Trade Exhibits—Court and North Room.

Not only so, but in each section we have endeavoured to make the hanging arrangement, in order that the reader may be able to mark any items which he thinks will specially interest him and inspect them conveniently on visiting the New Gallery.

W. R. Bland. Furley Lewis.

J. McIntosh (Secretary).



E. I. Holding. C. F. Inston. J. C. S. Mumery. G. A. Storey. R. Gay Wilkinson.

### THE SELECTING COMMITTEE IN THE PICTORIAL SECTION.

*Photographs by T. C. Turner and Co.*

SOME brief, and, for the most part, perfectly accurate particulars of the members of the selecting committees may be jotted down in telegraphic fashion for the sake of those who may not know the men personally. They may assist readers and exhibitors in estimating the factors which have made the exhibition.

Whatever may be said of the committees—and such honorary bodies are always a target for the malcontents—they cannot be accused of pushing themselves forward. Their individual support of the exhibition is rendered as private members. They,

like previous Royal committees, command the confidence of the exhibiting world for their single aim at producing a show which, in their judgment, is the best possible material submitted.

### The Pictorial Committee.

W. R. BLAND.—By nature, as by name. Slaved for years for straightforward photography; as probably done less work than anyone of equal record, average about two p



ar. Has confessed to a reverence for moorland scenery and  
ro-ammonia.  
E. T. HOLDING.—Strenuous, quixotic in ethics. Only five  
ers a photographer, but has kept to home portraiture:  
grand piano, his forte: prints in platinum, and though not a  
downer, is an advocate of small holdings.  
CHAS. F. INSTON.—A Northern light of unusual brilliance  
perfect aw roarer); of anti-American persuasion. Gets all he  
n in the negative: has hitherto printed in bromide or platinum  
the latter sepia by a method of his own), but now champions  
for its richness of quality more than for possibilities of  
fake." A lover of the fine arts and something of a collector.  
FURLEY LEWIS.—Formerly crucified his artistic tastes in three-  
four photo-engraving. Now maker of photographic portraits  
ini-privately. A photographer of men chiefly. Picturesque,  
ebane, accomplished, "He held three lilies in his hand."—  
ossetti (with apologies).  
J. C. S. MUMMERY.—*Suaviter in modo, fortiter in re.* Chair-

DOUGLAS ENGLISH.—Represents natural history photography  
at home; friend of wee tim'rous beasties, and moves a good  
deal in the upper circles of reptile society.  
C. E. KENNETH MEES.—Scientific director of Wratten and  
Wainwright, and author with Dr. S. E. Sheppard of some light  
reading, entitled, "Investigations on the Theory of Photographic  
Processes." Under 30, but a recognised authority on photo-  
chemical and sensitometric matters. Frankly critical but  
enthusiastic, and babbles of panchromatics and isocyanines in  
his sleep.  
A. J. NEWTON.—Principal of the Bolt Court School of Photo-  
engraving established by the L.C.C. Almost the only indepen-  
dent authority on modern photo-mechanical processes. A severe  
critic of ways and processes put forward as new or intended to  
be practically better, yet quick to appreciate genuine progress.  
JAMES A. SINCLAIR.—Apparently on the committee in the  
interests of technically good photography, of which years ago  
he was an exhibitor. He now pins his faith to "straight" oil:

E. J. Wall.

A. J. Newton.

J. McIntosh (Secretary).

Jas. A. Sinclair



Douglas English.

J. Waterhouse.

Conrad Beck.

C. E. K. Mees.

THE SELECTING COMMITTEE IN THE TECHNICAL SECTION.

At the hour of taking the photographs Messrs. Sinclair and C. P. Butler could not be present. A portrait of the former is inset on the right.

man of the Hanging Committee by virtue of his presidency of  
the R.P.S.; also of his personal labours in the West Room.  
has not forsworn gum for oil.  
B. GAY WILKINSON.—Friend and pupil of the late Colonel Gale  
and a member of the ancient and exclusive "Field Club," in  
which Colonel Gale was a moving spirit. A landscape photo-  
grapher, chiefly of pastoral scenes, and a consistent exhibitor at  
the Royal for many years.  
G. A. STOREY.—Associate of the Royal Academy and painter of  
cabinet pictures of the old school, genre, and latterly chiefly of  
mythical and legendary subjects.  
**The Technical Committee.**  
CONRAD BECK.—Scientific head of the optical firm which bears  
his name, and lecturer and writer on both popular and recondite  
sides of optics.  
C. P. BUTLER.—Of the staff of the Solar Physics Observatory,  
South Kensington, and a specialist in optical and photo-chemical  
methods in solar and astronomical research.

holds the record of four successive R.P.S. medals, and has only  
now returned to exhibition activity. A connoisseur of Auto-  
chromes, of which he has made some of the best examples.  
E. J. WALL.—A living encyclopædia of what has been done  
and published in technical photography, and in particular in  
colour photography. Supposed to know the greater part of  
Eder's "Handbuch" by heart, and to be able to quote  
chapter and verse respecting anticipations of alleged original  
work.  
MAJOR-GENERAL WATERHOUSE.—A unique experience and  
knowledge of photography and photo-mechanical work for civil  
and military purposes. The authority on obscure phases of  
photographic history and on half-explored fields of photo-  
chemistry.  
We may now pass to a detailed review of the exhibition, after  
again reminding the reader that, with the exception of the  
hour from six to seven p.m., the New Gallery is open every week-  
day from ten to ten, until its closing date of October 26. The

gallery, it may be added for the benefit of country visitors, is numbered 121, Regent Street, stands almost exactly opposite to the premises of the Stereoscopic Co., and is about equidistant

between the Oxford Circus Station of the Central London and Bakerloo Tubes and the Piccadilly Circus Station of the Bakerloo and Piccadilly Tubes.

### THE PICTORIAL SECTION.

THE Exhibition of the R.P.S. presents very much the usual appearance. There appear to be more pictures on the walls than usual, though we believe there are really fewer than last year. At the risk of disappointing still more aspirants we should advocate a more rigorous selection. It seems to be beyond the occasion that men having two or three excellent works should be further represented by others of less merit. Even if the space were not filled up by such omissions, the gain in the general effect would be very considerable. We notice a tendency to the old white mount of earlier days; the effect of this is somewhat disquieting when they are mingled, as they often are, with close-framed works of a dark appearance, or with dark mounts. A classification according to colour would, in our opinion, give the Gallery a finer effect.

We shall review the work strictly in order of the catalogue, but it will be impossible to adopt any method of grouping by subjects, names, or titles. For the sake of convenience in comparing our notes with the actual works, we shall paragraph this critique according to the panels which are quite easily recognised in the Gallery.

Entering the West Room by the left-hand door, we come first to

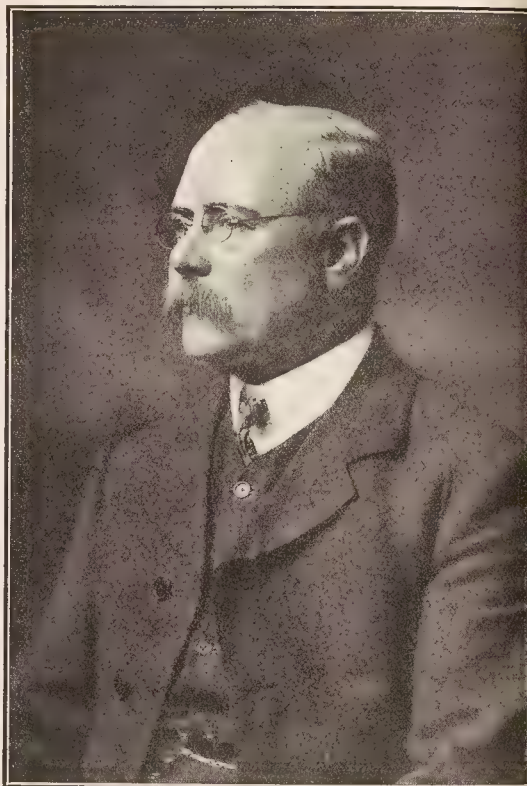
#### The East Wall—Right-hand Panel.

From this group No. 13 stands out as the most effective and most pictorial. It is entitled "The Salmon Leaps," and is by Mr. Louis J. Steele. The rushing of the water over the rocks is given with fine movement, and there is a sort of vaporous atmosphere over all, combined with an effective lighting natural to an over-shadowed stream, making this picture both naturalistically and pictorially a remarkable work. "Dovedale" (1), by Mr. C. F. Stuart, has a good deal of grace of composition and a nice effect. The portrait of the famous "Walrus" (2) by Mr. J. Smith, will be recognised with pleasure by those who know the sitter, and with great satisfaction of curiosity by those who do not. It is an excellent portrait, giving the man to the very life, and is treated throughout with fine taste. Miss Maud Geraldine's "Chillon" (5) is a very pleasing version of a somewhat hackneyed subject. "Swarthy Cheeks and Bold Black Eyes," etc., is the title of Mr. H. E. Corke's triumph (8), which we remember to have seen at Birmingham last year. It has the somewhat slight defect that we pointed out on that occasion, namely, a bright spot on the left wrist where the flesh is in juxtaposition with the garment. Possibly this is the identical print. "The Girl and the Kids" (9), by Miss Kate Smith, has a very charming pastoral feeling. It is not often we see the nude figure treated so ideally. "Soliel Couchant" (16) is remarkable for a wonderful sunset sky; in fact, this must be supposed its chief motive, for the landscape in other respects lacks several qualities. The whole effect, however, is distinctly pleasing. In "Vita Antica" (17) Count von Gloeden gives another of his classical compositions. He is to be congratulated upon the skill with which he employs the figures of undressed Italian boys, posing them in a setting remarkably free from incongruous factors. This picture, however, is greatly in need of simplification and concentration. In "The Old Squire" (21), by Mr. C. Friend Smith, we recognise old Mr. Riches, the famous artist's model. The photographer has done remarkably well with him.

#### South Wall—Left-hand Panel.

A new name to us is that of Mr. W. V. Goulstone, and we think his picture, "Calm" (31), takes first place in this group. It appears to be quite pure and "straight" photography and is an excellent example of what pictorial charm can be secured

by such means alone. The relative tones of this, though subtle as almost to result in flatness, give, nevertheless, the utmost relief, and the aerial perspective is one of the charms of a very beautiful picture. The portrait of Frederick Hollyer (35), by his son, F. T. Hollyer, leaves nothing to be desired. It is full of character and fine qualities. "A Still Sea" (39), by Frank W. Becken, has many of the charms of "Calm" of which we have just spoken; but its subject is no means so pictorial, its tones being too equally disposed from right to left, and it lacks atmosphere. "The Wool Washer



The Man behind the Exhibition.  
Mr. J. McIntosh, Secretary of the Royal Photographic Society.

(38), by Mr. F. J. Mortimer, is a capital subject, but surely much overloaded with dark pigment. The tones are probably in perfect relation; but why should they be taken in such a low key? "The Old Garden Gate" (33), by Aubrey Harris, a piece of outdoor genre work, is charming in subject, but, usual with most photographic pictures, too much is included. The figures and the gate, with their pretty, sunny effect, we all that was wanted for completeness, and the tree on the right, together with the accent it makes, is quite redundant. Miss Hilda Stevenson, in the title "Veiled Sorrow" (29), has, we fancy, been making a virtue of necessity. We do not find the subject of this excellent portrait more than interesting and mournful. It appears to be an oil print. If that is so, it is an excellent one. We like very much the "Village Evening" (26), and we should do so still more if the square patch of sky at the right-hand top corner had been lower in tone.



**South Wall—Centre Panel.**

Mr. James C. Batkin's picture, "While the Daylight Lasts" (0), quite deservedly occupies the place of importance in this group, and its title gives satisfactory occasion for the general darkness of the print. The immensity of the great hull overhanging the men has a fine impressiveness. Beneath it hangs "Slow Blush the Breaking Clouds" (51), by B. Ward Thompson. This is very charming, as most of these things are by this careful worker. We are just a little doubtful whether he is wise in limiting his methods and subjects so rigorously. His works in this particular manner have a very strong family likeness. In this we note with pleasure an increase of feeling and a more artistic treatment of edges than in former examples. "La Sereade" (40), by A. and M. E. Bracewell, represents a damsel peeping out of her bedroom window in order to recognise a renader. It is quite evident that the action takes place in twilight, which is not according to the traditional custom of renaders, but undoubtedly suits photographers better. The tin rug at the dressing-table would have been better omitted. It gives the lady the appearance of standing on a hassock, and entails awkward lines parallel with the picture edges; otherwise, the work is quite a pleasant pictorial achievement. Mrs. A. Barton has adopted a new style in "Morning" (54), and we are very happy to see it. Is this charming little figure who is putting on her slipper the same little lady whose head and bust we have so often seen? If so, we are glad to make her further acquaintance. She stands at a chintz-covered dressing-table, in a pretty dress, in a quaint bedroom with leaded lights in the windows. We could have wished there had been more strength of effect, and we have an idea that the nebulous chest drawers and the awkward piece of ceiling above it would have been advantageously trimmed off. Dr. A. R. F. Evershed's "Rochester" (45) is a view across the Medway with a barge in the foreground. It has the makings of a fine composition, but is not perfectly satisfactory as it stands. The sail breaks harshly across the surface of the river, which is in any case too bright. "Sunlight and Flowers" (46) Mr. Ernest G. Boon gives us a similar motive to his pretty diabolical subject at the Salon. This perhaps not quite so charming in action, but its sunny brilliance is distinctly refreshing. "The Tug" (49) by Mr. B. C. Dickson, is a good instance of concentration of dark and light to make a good effect. Dr. Schrakamp's "Rothenburg" (56) is a highly picturesque old German doorway. It appears to have attempted at pictorial treatment, but its intrinsic charm and sympathetic rendering make it quite interesting as a picture. "In the Moselle Valley" (58) is a highly pleasing view with mountains in the background instead of sky. We can see the sky line by reflection in the water, and this sky line has been used by Mr. Wastell to great advantage and with much cleverness to complete the plan of composition in the foreground. "The Dock" (60), by Mr. C. F. Inston, shows the photographer's five town to the best possible advantage. This little oil painting has all the delicacy of a platinum print, and a degree of richness and feeling mostly beyond the powers of that method. It might suggest that the buildings and ships on the left could have been a trifle lighter in tone, so that the barges on the right might have had their own way more distinctly.

**South Wall—Third Panel.**

The portrait of Mr. G. A. Storey, A.R.A. (73), by Bertram Park, is in every way satisfactory, quite rich and strong, but with great delicacy of modelling, and the figure is nicely posed. "A Woodland Pool" (64), Miss K. Smith must be highly congratulated upon having used the nude in open air in a way more charming than it has been our fortune to see in photography for many years—if at all. As a matter of fact, the nude on the figure is so diaphanous as to justify our description of the figure as nude. In itself the figure is highly pleasing in its pose and lighting, and is in perfect balance with its woodland setting. The print is well defined, yet without a

touch of hardness, and no pictorial law appears to be violated. "The Inn of Cervantes" (72) is a very delightful oil print by Mr. James A. Sinclair. We cannot imagine the process in its "straight" method being used to better effect. Of course, the scheme of light and shade in this picturesque courtyard gave Mr. Sinclair fine opportunities. We might say much the same of "Waterside, Chesham" (66), by Mr. Mummery, which is an example of gum printing. Quality is here in liberal measure. The distance is charming, but we think the sky might have been livelier in character. "In the Park" (68) is by Mr. Frank E. Roope. We always welcome subjects of this character, because we consider it a field for which the camera is well suited. We see three nursemaids advancing towards us with perambulators, and a few figures of secondary interest walking or sitting about. The near and distant trees combine to a pleasing lacey effect. The shadows on the ground are helpful in the composition, and the distant classic architecture of the park gateway is also highly pictorial. These things may be found the ingredients of hundreds of similar views lying at the very doors of the amateur photographer, who may often go further and fare worse in the way of excellent subject matter. "In Sympathy" (70) is a curious title for a very bold and effective print of a little girl carrying a baby. The simplicity and force of this capital little study by A. R. Webb give it a highly decorative character. "Sullen Water" (69), by Dr. Pooler, is gloomy and sober, but beautifully composed and highly romantic. "In the Precincts, Exeter" (77), shows a narrow lane and a gateway to good effect. The two figure subjects of W. and J. Parrish and W. Parrish respectively are a little "high falutin'" in the "arty" sense. We prefer "Donna Isabella," because it is less open to this objection.

**West Wall—First Panel.**

"Dispersing the Gloom" (85) is not so effective by a good deal as Mr. Batkin's other work. The gloom does not disperse exactly: but in the matter of composition the picture is quite beyond reproach. "Sunlit" (81), by E. Marks, is effective, but a little hard. "Where Clouds do Nestle" (84) has some excellent points. We like Mr. Taylor's selection, but we feel that the clouds are rather low in tone for the natural effect. "A Glimpse of Dovedale" (90), by Mr. Inston, is better in this respect. It has the effect of daylight, which many a photograph of nice quality and picturesqueness utterly lacks. The bright spot of light upon the mill in "The Mill, Ypres" (86) is quite an inexcusable defect in an otherwise charming subject. Why this accent has been allowed by Mr. James Gale it is difficult to see. No. 87 is a very pretty sunlight effect upon the sea as it rolls into shore. Its title is "As the Sun Throws O'er the Sea a Floating Bridge of Light," and its author is M. Eardley-Wilmot.

**West Wall—Second Panel.**

Of this section we must confess to a predilection for (94) "The Fountain," by A. H. Blake. The old-world grandeur and romance of the fountain and other stone ornaments make a strong appeal. The selection, which has been made with nice discrimination, secures the utmost advantage afforded by the architectural lines. A portrait of Mr. Furley Lewis (95), by E. O. Hoppé, is excellent so far as the face is concerned, but we do not think the pose of the figure has been sufficiently considered with ideas of composition. The two hands, suppressed as they are, are a little obtrusive. There is a nicer pose in "A Wintry Grace," etc. (99), by J. Moffat, where, however, the hands might have been a little less in evidence also. "The Sisters" (101), by E. T. Holding, is a print of very nice quality, boasting a pictorial motive, although it would rank merely as a portrait. "A Bend of the River" (102) is very sweet. Mr. Inston will have to guard, nevertheless, against over-softness in his working of the oil method. In No. 105 we recognise Mrs. Furley Lewis, photographed by her talented husband.

The lady sits in a characteristic pose, and the charm of the print is delightful in every respect. Dr. Evershed's picture "The Young Nun" (107) is a lovely face in a becoming nun's robes. It is a pity that the print is mounted all askew. "In Normandy" (108), Mr. Bale Rider has given us a highly picturesque subject, with a very pleasing variety of tone, rich and bright.

#### West Wall—Third Panel.

This section is full of good things, one of the best being "Isabella en Jan Wilden" (114), by Oscar Hardee, a Dutch man and woman of fine character, and on a large scale. "A Woodcutter's Team" forms the subject of No. 113, by Mr. C. F. Stuart. It is not so successful in composition as many of the works we have seen by Mr. Stuart. Mr. Blake's figure subject "The White Bowl" is a new departure for him, we believe, and he deserves much congratulation upon it. We only object upon principle to the trepanning of the figure, and confess to being unable to see the artistic advantage of such a drastic measure. "Homewards" (117), by Mr. Jas. A. Sinclair, shows two old ladies with white caps crossing the road of a Continental town. The figures are capably placed, and, ordinary as the subject is, its treatment has secured quite a highly pictorial result. Two ladies of different ages compose the "Portrait Group" (124). Herr Dührkoop, its author, understands better than most photographers how to make his sitters intensely interesting, whatever their personalities may be. The elder lady's hand is perhaps not quite a happy item in a print of great charm and quality. "Wedded" (125), by Aubrey Harris, is a very pretty subject, treated in a rather commonplace way. It is perhaps a little too reminiscent of a famous picture which figures on pictorial postcards on the Continent. In "Away Aloft" (126) we have quite a remarkable picture of rigging and men clambering up it. We suppose nothing quite like this has been done before, and Mr. Mortimer has certainly secured the charm of newness and quaintness. No. 132 is another work of Mr. Mortimer's. In this subject the chief feature is the sparse silver birches that straggle across the front. It is called "The Grook Kerk, Veere." The women in cap and bib that figure in it give life to the scene. No. 127 is another of Mr. Ward Thompson's efforts, possessing all the beauties and conventions of his work. No. 133 is a pleasing picture in Bruges, with a sunlight effect, by S. G. Kimber.

#### West Wall—Fourth Panel.

"An Olive Grove" (135) is a very sunny sylvan scene, by T. D. Ralli, full of good points, but a little uniformly grey in the vista. "In Old Caudebec" (146) a view of old houses and shops at the meeting of two streets has been nicely given by R. E. Weeks. It has a pleasing variety of tones. Three ducks in bright sunshine against an old stone wall constitute the whole of the subject of one of the most remarkable prints in the exhibition. If they had been most thoughtfully designed, instead of "snap-shotted," they could not have been more exquisitely posed. The fine quality of the print is eminently noteworthy. One of the best of Mr. Holding's prints is "The Lesson" (144). A lady sits at one end of a small table, and a child stands at the other end. The pattern of the wall-paper and the demure uprightness of the figures combine to give quaint character to a most pleasing arrangement. "Homeward Bound" (146), by R. E. Weeks, is a capital snow scene, the cart in which appears to have runners instead of wheels; a fact that may add an interest to the picture for the average Britisher! "Wareham Bridge" (149), though a trifle woolly in texture, is a capital print by Miss A. B. Warburg; the rich shadows under the arches and the whitewashed gable of the house are fine points. There is a true winter aspect in Mr. Johnston's picture (151) "Winter from Calton Hill, Edinburgh." The monument is impressive and well placed.

#### West Wall—Fifth Panel.

The "Family" in 169 is one of the most charming Dührkoop we have seen. It represents a lady and two children at a piano. The faces are full of interest and charm, and the picture quite spontaneous, though composed with the utmost care. The "Lady in Black" is somewhat similar to the fine example at the Salon, and only a little less good. "A Moorland Hairs" (160) is another of Mr. Whitehead's grey and pleasant landscapes. They always have "mood," but, as in this case, they are rather a little wanting in truth of relative tone. Nos. 161 and 165 by Mr. Inston hang side by side. Both are admirable, and our remarks upon Mr. Inston's other works apply equally to them. The former is a little wanting in strength of effect. In "The Thames" (175) Mr. Gear has quite succeeded in catching the smoky and misty air of London. His view shows a barge passing by the Customs House. "The Kitchen Door" (174) is remarkable for having a rectangular patch of black almost in the geometrical centre of the picture. Still, the work has considerable charm, and the foliage of the trees is managed with much taste and skill. This comes from Arthur B. Clarke.

#### West Wall—Sixth Panel.

In "The Shrimping Ground" (183), by Mr. F. J. Mortimer, we have first of all to take for granted a thick mist having the unusual power of not obscuring the detail. When we have granted this phenomenon, and have approved the central position of the boat, we can then see a deal of nice feeling in the effect presented and in the treatment of the water surface. Nevertheless we are of opinion that a couple of inches off the right-hand side would have eliminated an arid passage of the pigmenting, and would have improved the composition. "The Neighbour" (184), by J. C. Warburg, is a picture of little girls talking to a boy through a window. It has a very pleasing pattern of tones, and the treatment of the print is delicate and firm. A very successful oil printing of an elderly lady reading comes from Rufus E. Evans, who calls it "The Testament" (188). For a foreground study of a nebulous dance, "Weeds," by W. T. Greatbatch, is highly successful. Good romantic feeling and agreeable composition is given by Thomas D. Graly in his "Grey Ghosts of the Past" (185). It depicts a ruined castle with a most effective scheme of light and shade.

#### North Wall—Left-hand Panel.

We like the tone of J. F. Wilde's "Solitude" (170). It is truthful, and none the less pictorial for that. Miss Mary Allan appears in a new rôle in the picture "A Study in Tones" (195), by E. O. Hoppé. She is represented at half-length, and, playing a piano, the lighting of the figure being most effective. Mr. Stuart's "January" (197), though distinctly pleasing as a whole, includes one or two anomalies in tone that rather worry the critical. We think the lights in the sky should have been allowed first place in value, and certainly the high-light on the house are aggressive, though the composition is pleasing enough. An unusually fine quality and effect of light and shade characterises the small print "Misty Morning" (198), by Licinio Farini. In its way it is scarcely beaten amongst the landscapes here. "The Convent Well" (200) shows Mr. Gear at his best. The subject is highly picturesque. We think Mr. Hoppé's portrait of Herr Dührkoop (203) is rather dark and uniform in tone, and the action of his left hand is not well explained. In other respects we like the portrait exceedingly, for we consider that it catches exactly the alert bearing of the famous portraitist. Mr. John McWhirter, R.A., who has likewise proved a splendid subject for Mr. J. Moffat, who, in turn, acquits himself with equal success to his task. Lighting and modelling are excellent. In "A Ray of Light" (206) Mr. S. G. Kimber repeats an old success.



### North Wall—Centre Panel.

picture "Si vis pacem, para bellum" (217) represents a ship coming full steam ahead in what appears to be a night, with the moon somewhere behind the clouds. That is how it appears to us, though we have not Fortimer's word for the actual fact. It is certainly impressive, and well suited with a frame. "Gleam and Grime" is a good picture of some squalid manufacturing town. by James C. Batkin. It is a pity that the chief accent group of figures is so exactly central. Mr. Harold's picture "Evening" (211) is a nicely managed effect of meadows seen through trees overshadowing a brook in foreground. The print is pleasant in colour, and well free from flatness of effect. The high-lights in the "Temple" (215), by Mr. Gear, are almost too liberally equally distributed. Though there is not much evidence of subject in the title of "Radiant Morn" (213), yet it only has the mysterious quality of morning light, and communicates the mood of the effect portrayed. "A Sunny" (218), by the President, gives with a good deal of truth the softness of the light due to clouds rapidly passing. The of dark trees on the right has a good steadying effect on parts that might otherwise be wanting in simplicity. Lay upon words in "Seeing the World" (220) is due to the of a little girl examining a school globe. A point overlooked is here well secured. That is to say, the of the solid article is well insisted upon, and combined with the charming looseness of texture of the fabric of the girl's dress. A reader unacquainted with technical art would find in this fine thing by Mrs. E. Peake ample illustration of that indefinable thing "quality." Simply much mixing together of black and white in various shades, now firm and now melting, this print is an object in the charms of chiaroscuro. "When Johnny Comes Home" (221) shows an animated group waving greet- at a window. This is by Mr. David Murray. The of the coal barge on the mud-flats of Broadstairs given Mr. W. H. Kirkland, the photographer of "Low" (225), a fine theme. A little more gleam upon the shore would have been advantageous. Another excellent print, by Mr. Jas. A. Sinclair, is "Dust and Sunshine, and" (227). The effect implied in the title is well shown. Mrs. Barton understands eminently well how to make a picture. We think, nevertheless, that a little less light in the shadows would have made "Summer" (226) more charming. The hand appears to suffer from enlargement of scale.

### North Wall—Right-hand Panel.

We have no doubt in giving the highest praise in this group to "Sun and Mist" (234), by A. E. King. It is dead true, and could scarcely be more charming as a picture of a "mood." The reticence of its treatment is highly commendable. "Chartres—la basse ville" (233), by Miss Margaret Miles, and "Many Cargoes" (241), by F. W. Jackson, are prints that suffer from an unreality of effect due not so much to a want of power in using the method as to a want of imagination of Nature, and a knowledge of certain unwritten laws in art. Mr. William Pringle gives us a capital scene in "The Arrest" (232), a title which can only apply to the figures that are no more than mere accessories. Mr. J. Meyer, in "Making Friends," has made a picturesque of a boy sitting and watching some hens. He has not more regard for truth of effect in lighting than many others in whom we have deplored the absence of those essentials, yet his picture is agreeable nevertheless in those other things that defy analysis, but which we can only vaguely judge as design and quality. A convincing effect is seen in

"Thaw" (245), by G. Haranghy der Nagyrév, and the imported colour is less objectionable in this case than it usually is. We must not pass over "Ritratto in pieu aria" (238), by Giuseppe Castruccio, which is an extremely charming picture of a lady leaning against a wooden railing. Here again there is design and unusual quality in the sky, added to a breadth of treatment in the light and shade of the figure. "The Kiln" (244), by Sydney J. Taylor, is most effective and romantic.

### East Wall Panel—to left of door.

The most important work in this group represents a sculptor pausing in his work of cutting a life-size figure of a mother and child, and we may say, parenthetically, that the sculpture appears to be an extraordinarily fine one. The artist himself is rather too obviously pausing while the operator does his business. The picture is by Frau Grete Dorrenbach, and is entitled "Im Atelier" (254). Our next favourite is Miss Brenda Johnson's delightful landscape, "A Summer's Day" (256). As upon a previous occasion, Miss Johnson has added much to the charm of her work by the inclusion of a precious little figure, quite small in scale, but efficient in making its due effect. Mr. A. H. Piddington's "Corn Ricks" (250) shows that he has mastered the elusive *sine quâ non*, quality. "Poaching" (249), by Miss Dorothy Ritchie, depicts a dog making off with what appears to be a rabbit. Miss Ritchie has very cleverly enhanced the sensation of movement in the animal by showing more space behind him than in front. This invokes the idea that he is running out of the picture. It is a pity that Mr. George Hilderley has placed his figures so immediately under the mill in his picture "Sunday Evening" (257). This leaves rather an empty space at the left. Another mill of very dramatic portent occurs in "The Harvest that is to be" (259), by Oscar Hardee. The designing of this subject leaves nothing to be desired, unless it be less murk in the foreground; but we are unable to understand what effect of night or day the photographer wishes to depict. "A Paddler" (261), by Percy G. R. Wright, shows us a girl standing on the sands in an inch of water. The picture has a nice effect. The small and single dark accent of the girl's hair gives it a piquant decorative note.

### Between the Doorways, East Wall.

Delightful action of a baby girl holding a sprig of seaweed will be found the irresistible charm of H. W. Rennie's "Water Baby" (263). Miss A. B. Warburg's "Church Parade in Dalecarlia" (264) is lively and interesting. We have next a couple of prints by E. T. Holding, which we feel sure will be highly popular, as they deserve to be. "The Song of the Lark" (265) is the title of the first, and is well borne out by the action of the lady and child, who stand upon a common listening. The other is an interior, showing a window-sill with a couch before it, and about these objects two pretty children are clambering in order to reach each other a kiss. The girl particularly is very charming. The picture is named "Sunshine and Kisses" (266), and is technically beyond cavil. The costly luxury priced at £30 by Cavendish Morton is called "Motherhood," and though beautiful in subject is rather crumbly in texture. "Finis" (268) represents the last remains of a wreck on a romantically dreary shore. This is by Harold Moore. Next we find another variety of the work of A. H. Blake, who has certainly surpassed himself this year. He gives us a young lady making tea at a table flooded with light. Its title is "Early Morning Sunlight" (269). "Etude en Rouge" (271) is a prettily posed back view of a lady's head and shoulders. The fierceness of the effect in "Crescendo" (273), by W. H. Porterfield, reminds us of one of the Plagues of Egypt. We welcome J. C. Warburg's large and important "Notre Dame de Vie. Among the Cypresses" (283) because the exhibition is lacking.

this year in those fine and impressive landscapes of large scale that have in former years lent such distinction to the walls. We believe a slightly different point of view might have obviated the somewhat symmetrical disposition of the church and the trees that flank it, and we do not quite like the light triangular patch at the left side. A clear and bold photograph of a head, entitled "Rosamond" (293), comes from Cavendish Morton, who has seized in this work a choice pose, and given full value to the beautiful hair of the sitter. Another nice pose in a good subject is presented by George Hilderley's "Nelly" (300). No. 303 is a second portrait of Rudolf Dührkoop, F.R.P.S., this time by Furley Lewis. It exhibits this photographer's method of keeping nearly all the light from his sitters' hands—a good plan in principle; but in this case we feel that they do not sufficiently tell apart from the rain cloak that Herr Dührkoop is wearing. As usual, the print is beautifully harmonious. We finish our review of the monochrome prints by noticing two more by A. H. Blake. "In the Court of Honour" (308) he has secured more beauty of lighting and better composition than Mr. Coburn has done in his Salon view of the same subject, although he has not worked in so grand a manner. "Road Up" (309) is artistic to the last degree. We admire the way in which an asphalte boiler, with its great circular lid and issuing steam, has been advantageously made the chief feature of a characteristic London view.

### THE SCIENTIFIC AND TECHNICAL SECTION.

THIS section must be admitted to be somewhat disappointing. There are no exhibits that can be described as of a specially novel character, no apparatus, and no astronomical photographs, with the exception of a few lantern slides. Foreign exhibitors are confined to three, and work of a research nature is practically absent. Indeed it might almost be described as an exhibition of record photography, for nearly all the work shown is of the nature of simple records of facts. An unusually strong and representative selecting committee was appointed this year, and want of confidence in their ability could not possibly be the cause of the abstention of many prominent workers. No doubt the abolition of medals is the real reason, for work of a very important, but probably somewhat obscure nature, has little or no chance of recognition in a public exhibition unless attention is drawn to it by means of an award, and the prospect of one's work receiving no notice beyond the compliment of hanging is not encouraging. It is to be hoped that the R.P.S. will before long see their way to again offer medals in this section.

#### Feathers and Furs.

This is, as usual, the most prominent feature of the technical section. It contains nothing very conspicuous, and the subjects are not exactly new, but some very excellent technical work is shown. Mr. Douglas English is well to the fore with five first-class exhibits (310-314), his representations of stoats, moles, marten cats, and snakes being exceptionally good. These are of very distinct scientific value, since such shy creatures as moles and stoats are seldom to be seen in the wild state, abundant as they are. Mr. Martin Duncan has a fine study of a caged "Crested Harpy Eagle" in 320, and also one of "The Little Owl" in 321, and Mr. William Farren shows his usual skill in tackling very difficult subjects in his studies of the Woodlark and Song Thrush (322 and 323). His sitters are shown in their natural surroundings of bewildering masses of twigs and foliage, and yet somehow he contrives to show us the birds clearly. As he evidently does not descend to any heretical photographic tricks to accomplish his purpose, the only possible explanation of his success is the exercise of great skill in selecting and arranging his view point and in making his exposure at the right moment. Nos. 327 and 328 are very excellent studies of thrushes and owls by Mr.

#### Colour Work.

There are three or four photogravures printed in colours which recall very charmingly the tinted mezzotints of bygone days. These are by C. Percival Small and Co. They will be overlooked, for their colour is attractive in its limited and in no respect violates the hues of Nature. They are all traits, the finest being "Miss Lawless" (278) and "Mrs. Alexander" (282). Certain other prints in coloured oils, with one exception, no advance in photographic matters, feeling after effects that can only be moderately successful—a gigantic tour-de-force. The exception is the "In Spinner" (298), by J. C. Warburg and F. T. Hollyer, which has been achieved by a purely photographic process of which the details are as yet undivulged. This is in some parts highly successful. We cannot say as much for the other colour examples—mere oil prints in multi-colours. To our mind they are turgid and stodgy, and absolutely without truth to Nature. Whatever there may be that is pleasant to some in the colour of these attempts (and we find nothing) must be attributed to accidental admixtures of pigment, having no logical connection with the subject matter. The topographical obligations of certain well-known views, and the obvious requirements of natural phenomena in certain other landscapes, stultify, if they do not make ridiculous, the colouring of these over-ambitious works.

Alfred Taylor, and next this exhibit Miss E. L. Turner "Ruff" fame, once more distinguishes herself by some remarkably good studies of Stonechats, Whinchats, and a Wren, some way or other she contrives to use or form a background that throws up her sitters to perfection. Mr. William Bidton shows an equally successful selection of backgrounds in his very fine set of photographs of the "Roseate Tern" (324). In the rest of this part of the technical section, Mr. O. Pike shows some good studies of foxes and badgers, while Neville Kingston has secured some exceedingly well-lighted representations of polar bears. None of the other exhibits for special comment, though all are of a high standard.

#### Miscellaneous Subjects.

We next come to the photographs wrongly described as micro-photographs by one exhibitor. Mr. W. F. Cooper's low-power magnifications, shown in 349 are exceptionally good, while Mr. Martin Duncan's frame, showing the insects responsible for the transmission of sleeping sickness and other diseases, is both good and interesting. There is some fine technical work among the examples of photomicrography, but the subjects in many cases are hardly popular ones. There is, however, a considerable amount of interest attached to Mr. A. E. Smith's photomicrograph of Genuine Mushroom Ketchup (362), for in a footnote he informs us that the minute spores, or seeds, found in the genuine article are selected to be seen in commercial samples!

The radiographs are very few, but those of Messrs. Wilson and Blackall, in frame 363, showing the osseous development of the bones of the hand, are of great value and interest. Near by we come to some very fine photographs by Mr. J. Finlayson, illustrating Typical Wheat Ears (365), and Poisonous Plants and Seeds (366). These are not only good technically, but of considerable educational value, while in 365 the author has adopted the truly scientific method of photographing a scale alongside his subject. It is to be regretted that this expedient is not more universally adopted; but fear that some workers attach undue importance to the appearance of things, and look upon plain matter-of-fact scales as intrusive.

The flower studies require little notice, as they are particularly strong. Nos. 370, by Mrs. Dunlop, and 385,



Mr. Ed. Seymour, are the best, while 377, showing "The Pride of Table Mountain," is very interesting.

Dr. Vaughan Cornish exhibits an historically and scientifically valuable series of photographs of Panama Canal in Nos. 393 to 402, and Dr. Tempest Anderson shows some similarly valuable records of the Craters of Santa Maria, Guatemala, and Montagne Pelée. These are to be found in Nos. 403 and 404.

Captain Owen Wheeler, in Nos. 413 to 416, very fully illustrates what an experienced worker can do with the telephoto lens. Very fine definition is secured, even though complete photographs, made with a magnification of 9 diameters, have afterwards been further enlarged four diameters.

No. 420 is an exhibit of rather special interest, as it is a cardboard model of a "Lens Calculator," designed by Mr. A. Lockett. It is very simple in design and easy to use, and should prove useful, especially to those who dislike or do not understand mathematical formulæ.

Another exhibit of special interest is that of Dr. R. A. Reiss, Nos. 425 to 431, illustrating the detection of forgeries and the value of finger prints. No. 426 is remarkable, as it shows that the litho stone used for the manufacture of some forged notes retained, even after regrinding, records of the notes that could be photographed, and also equally definite records of a catalogue subject, printed on the stone twenty years previously.

An interesting feature in the monochrome portion of this section is an autographed portrait of His Majesty the King, by the Swan Electric Engraving Company. This is to be found at the opposite end of the balcony and among the portraits belonging to the R.P.S. portrait collection.

### Colour Work.

In this year's exhibition the Autochromes and colour transparencies are in a section by themselves, and do not form part of the technical section. It still, however, includes the colour prints, and first among these we meet with No. 431, a direct photograph in colour of the solar spectrum by Mr. C. P. Butler. This is a Uto print, remarkable for the fact that it was made in July, 1907, and shows no perceptible degradation even though mixed. The colours are brilliant, and even though the result may be deficient in the pure red, pure green, and pure blue portions, yet as a whole it is really a very good representation of the spectrum. Nos. 432 and 433 are very good though rather small tricolour carbons by Achille Carrara, while Nos. 434 to 445 are pinatypes by Messrs. Meister Lucius and Gruning, Ltd. Among these we may specially notice Nos. 434 and 435, both portraits, and No. 437 is also worth mention on account of the good blacks shown in it. The rest of the pinatypes are all very good specimens, though they indicate that pure whites are not very readily produced. They generally tend to an ivory tint, which is by means displeasing in some cases, but not always desirable. No. 446, by Mr. W. Rayner,

is very well worth study, as a reproduction of Autochromes by Mr. Warburg. Mr. Rayner has been very successful with such reproductions, though it is by no means easy work. Mr. Samuel Manners shows excellent examples of the process that he alone works with such success. No. 449, "Roses," is a good example, while No. 450, "Peaches," is certainly the most realistic piece of colour work that we have seen.

### Lantern Slides and Transparencies.

Some verascopes in the balcony contain specimens of stereoscopic transparencies in monochrome and colour by Mr. Leo Finot, but the most interesting exhibit is No. 687, which contains a series of stereoscopic radiographs of molluscal shells by Dr. G. H. Rodman. These are novel, and some of the results show very beautiful complexities of structure. The rest of the transparencies are downstairs in the North Room. Those in the base of the lantern stand are rather few in number, but of good quality, Miss Kate Smith (Nos. 456-459) and Ellis Kilsey (Nos. 460-466) showing some excellent pictorial lantern slides, and Walter Plomer Young a valuable series (Nos. 467-484) illustrating monuments of all ages. A few astronomical studies by C. W. Barlow are in this stand, together with some which illustrate natural history subjects by Arthur Frost and John T. Roberts. Some stereoscopic transparencies of microscopic subjects, by Arthur C. Banfield, are worth attention, but perhaps the exhibit of most interest is the series of balloon photographs made by Dr. Lockyer. These are all London subjects, and are all worth careful study, especially the one showing the Tower Bridge and the series of waves produced by a passing steamer.

### The Autochromes.

Unfortunately the stand on which the Autochromes are to be shown was not quite finished at the time of our visit, and it is impossible to fairly criticise a number of transparencies when each has to be inspected separately in the hand. We must therefore postpone a full notice of these, but we have seen enough of them to convince us that the collection, as a whole, is remarkably good. Mr. H. O. Klein has a very fine set, including portraits, scientific subjects, and in particular a study of jewellery, in which the lustre and beauty of the precious stones is most perfectly rendered. Messrs. Walter Barnett, W. Partridge, Ellis Kelsey, J. C. Warburg, Imre Belhazy, Rowland S. Potter, and U. M. Jones show some very fine pictorial subjects that will appear to much greater advantage in the proper viewing frames. Very interesting and perfect Autochromes are also exhibited by Dr. G. Drake-Brockman, his series illustrating the evidence given in a murder case being unique and interesting. Scientific and Nature subjects are strongly represented, Messrs. E. J. Bedford, Arthur C. Banfield, J. Inderwick Pigg, and F. Martin Duncan being prominent exhibitors.

### THE PROFESSIONAL SECTION.

owing to the fact that the number of exhibitors is smaller than in previous years, while the number of prints shown by each exhibitor is greater, the walls of the South Room present a more homogeneous appearance than in former years. In the purely professional portrait work shown by Messrs. Furlay Lewis, William Crooke, and Walter Barnett, we touch, of course, the high-water mark in commercial portraiture. Nor does the use of the word *commercial* be taken as implying work which is saleable without being artistic. Any detailed account of each exhibitor's work would be purposeless, and the interests of those professional workers who visit the gallery with serious intent will be better served if the general characteristics of the three displays are outlined, and then possibly one or two individual works more particularly referred to.

The work of Furlay Lewis is marked by strong characterisation of the pose of the figure, the set of the head, the expression and

the occupation of the sitter in almost every case showing distinct individuality. It is fairly easy to produce a number of portraits dissimilar in pose, and so on, but Mr. Lewis does much more than this; his portraits are not only different when compared with each other, but they are like when compared with the sitter. Look, for example, at the portrait of the Right Hon. John Burns, M.P., and notice the way in which the photographer has suggested, by the slightly forward position of the chin, the head slightly on one side, and the squared shoulders, the thoroughly fighting character of the man. In the picture of Cavendish Morton, too, we have that suggestion of the mysterious which is associated with Morton's pictorial expression of himself. Portraits of Nelson Dawson, the well-known artist and enameller, and F. M. Halford, the authority on fly-fishing, gain individuality by the use of what has been called "the attributes"—in the one case the easel and canvas

and in the other the artificial fly which has just been mounted. The kindly gleam of the eye in Prince Kropotkin's portrait—an old favourite this—again shows that Furlley Lewis has no set formula which he follows in his work, but that he is ready to seize the salient features of each and every sitter. Who would think, to look at the portrait of this kindly old man, that he is still regarded by Russia as a most dangerous revolutionary? One would unhesitatingly accept Lewis's version of his character before that of the bureaucracy. For magnificent composition and strong modelling, the portrait of Oscar Arndt stands out almost pre-eminently. There are one or two portraits of ladies, of which we unhesitatingly prefer those of Tina Lerner. Here we realise quite clearly that the photographer has had a graceful, *petite* sitter to deal with, and though it would be more than a miracle if, with such a sitter, the cleverest photographer got more than a shadow of the sitter's charm and personality, we are made to feel something of those characteristics.

One feels inclined to ask on leaving Lewis's display how much of its character, its homogeneity, and its thoroughness, without that stodginess which thoroughness often bears along with it, is due to the "one-man" method of working. When the finished portrait owes its existence, not only to the operator who saw the sitter for ten minutes, but to the developer, the retoucher, the printer, and the trimmer and mounter, how can it show any continuity of effort? The method of Furlley Lewis is to carry the work on throughout himself, and the consequence is that every touch right up to the placing of the print upon its tinted papers and the position of the signature or embossed initials is but one step further in the direction of the preconceived ideal. We could have wished that, instead of using ordinary black ink for titling some of the prints, a fine black-lead pencil had been employed; but one can realise the pressure under which such a show of work is prepared by a busy man, and our readers should feel glad to have an opportunity of seeing so fine an exhibit of Furlley Lewis's work.

In his method of treatment, H. Walter Barnett differs considerably from either Lewis or Crooke. The strong point in his portraiture is the constant evidence of his power to seize the essentially feminine characteristics of his feminine sitters, and to represent them as charming, graceful, refined, and beautiful women. Apart from the point already referred to, the visitor to the gallery will be most interested in the technical methods employed. The red chalk carbons on canvas grain transfer paper, plate-marked, and framed in narrow polished

wood beadings, are very effective, while other carbon print on a pyramid grain transfer paper, also plate-marked, have much of the effect of fine quality photogravures. The coloured work is exceedingly dainty and delicate, and shows how much more effective such tinting is than more full colouring.

William Crooke has somewhat marred the *ensemble* of the south wall by too equal spacing. The work shown is very similar to that seen in previous years, notable on account of its size, its fine quality, and the way in which each picture holds its own, though simply mounted with a cream margin of about a couple of inches and a *passepartout* binding. The large head and shoulders picture of the Earl of Wemyss is particularly fine, and "carries" well. It at once strikes the eye as one enters the room from the doorway opposite. Strength and simplicity are perhaps the keynotes of Crooke's work, and he quite evidently thoroughly understands how to get those qualities in his small original negatives which will tell well when these impressive enlargements are made.

The small display of Mattype must be sought just to the left of the entrance in the North Room. The work is curious, uneven, the coloured portrait of the back of a lady's head being a fine thing, while its companion, a profile of presumably the same sitter, is very commonplace.

Frederick Hollyer again shows a number of his irreproachable platinotype reproductions of various old masters.

The whole of the west wall is occupied with the exhibit of Raines and Co., of Ealing, consisting of prints and enlargements from negatives by Herbert G. Ponting, F.R.G.S. I go without saying that here we have perfect technical work both as regards the original negatives and the contact or enlarged prints. These prints are mounted with precision, and there has been shown considerable taste in the selection of the tinted papers. The framing has been carefully and substantially carried out. Yet the show as a whole irresistibly carries the mind back to the photographic exhibitions of fifteen years ago, and one realises, on comparing this wall with the work in the West Room, how far pictorial photography has advanced during the past few years. This is, of course, no condemnation of the work of either the photographer who produced the negatives or the firm who enlarged them and framed the pictures. The work was not done chiefly from a pictorial point of view. The excellence of this work will no doubt suggest to the professional photographer how varied are the accomplishments of the exhibiting firm.

## THE PROPOSED GALLERY OF PHOTOGRAPHIC PORTRAITS.

Nos. 688 to 789 in the exhibition, arranged on the balcony between the heads of the two staircases, represent a selection of portraits of eminent British subjects recently acquired by the Royal Photographic Society. A considerable number of these are portraits made by Frederick Hollyer, mostly of artists and literary men. To these have been added a large number of Woodbury-type prints, which form a series of "Men of Mark," arranged by Mr. G. C. Whitfield. We learn from a note in the catalogue that it is the intention of the society to index and store all portraits entrusted to it under such conditions that they shall be available for reference.

It would, however, appear advisable for this decision, supposing it to be official, to be revised very considerably, otherwise we can see the Royal Photographic Society pledged to a task of storage and indexing which could only be undertaken by somebody having a commercial interest in such work, such as a press agency or an illustrated newspaper. As we originally understood the scheme, which is now

illustrated in the exhibition, a collection was to be formed of portraits which while being masterpieces of photography were also portraits of persons of undeniable eminence. On these lines the nucleus of a collection might be formed the existence of which would be demonstration of the argument that, in the absence of a painting, good and permanent photograph of a celebrity might appropriately be included in a national collection. The strict letter, however, of such a scheme appears to have been widely departed from, if we may judge from the names which figure in the present collection in which we find persons with very slight title indeed to be regarded as eminent, or even celebrated. While we quite sympathise with the Royal Photographic Society in its request for assistance in this scheme, we would ask that due consideration may be given to the possibility whether donations to such a collection may not be imposing a load on the society which it is unable to bear.

## THE WAYS OF SELECTING COMMITTEES.—SALON AND ROYAL.

VISITORS to the two exhibitions can hardly avoid making a comparison between the representation on the walls of the respective selecting committees. In past years the Salon has balked such comparison by withholding the names of those responsible for the work of selection, or by leaving the visitor

to assume that the whole membership of the Linked Ring acting together or in irregular "shifts," enjoyed equal privilege in the matter of selection. However, this year the names of the selection committee appear on the catalogue—surely now we hope, from any desire on the part of other less close



red Links to disavow responsibility for their acts?—and before the visitor can obtain, at any rate, a glimpse into modern art of Salon-making by the latest methods. The following are the figures:—

SALON.		ROYAL.	
Total number of pictures, 203		Total number of pictures, 309.	
Craig Annan .....	10	W. R. Bland .....	none
Colon Arbuthnot .....	8	E. T. Holding .....	5
Alfred Benington .....	5	Charles F. Inston .....	6
Langdon Coburn .....	21	Furley Lewis .....	3
George Davison .....	none	J. C. S. Mummery .....	2
Robert Demachy .....	7	G. A. Storey .....	none
Frank Eugene .....	10	B. Gay Wilkinson .....	none
Ernst Friedrich Kühn .....	none		
Ernest de Meyer .....	28		
Edward J. Steichen .....	39		
Ernest Stieglitz .....	6		
Frederic H. White .....	10		
Joseph T. Keiley) .....	4		

Total (=72.9 per cent.) 148      Total (=5.2 per cent.) 16

The above figures are obtained by taking the whole of the Salon exhibits (Autochromes as well as prints) and the pictorial section only in the case of the Royal. As the technical committee select Autochromes at the New Gallery, it is impossible

## THE TRADE EXHIBITS.

### Wellington and Ward.

Messrs. Wellington and Ward occupy their accustomed Walton most effective stall on the left of the entrance. Here, as in previous years, they make an excellent exhibition of negatives on the famous Wellington plates, including the new "Extra Speedy Special," together with lantern slides and transparencies on the bromide and light lantern plates. Prints and enlargements on the Wellington slide, S.C.P., and P.O.P. and self-toning papers are also excellently arranged, and include the work of S. E. Fincham and W. L. F. Stell, in addition to that of Mr. Wellington himself, and the visitor may also see specimens of the work of the light-filter now issued by the Wellington orthochromatic plates, as well as examples of the "exposure calculator" recently reviewed in our columns.

### Raines and Co.

The Raines and Co. exhibit occupies the whole of the wall on the left upon entering the South Room. It is divided into seven panels, the background being natural colour canvas with dark oak for the divisions.

The display consists of thirty-four enlargements from negatives by H. G. Ponting, and many of the subjects will be recognised by the visitor who visited the exhibition at the Little Gallery of the "B.J." spring. Where Messrs. Raines' present exhibition differs from the previous is in the diverse treatment of the subjects; the numerous print-processes and varying mounting and framing schemes adopted, are serving to admirably demonstrate the many-sidedness of the photographic service (by the catalogue we are led to understand that the display is arranged with that purpose in view), at the same time give Ponting's superb negatives additional distinction by the evidently fully thought out treatment accorded them. For example, the tiny Japanese damsel who attracted so much attention under the titles, "O Tsuné San" and "A Study by the Shoji," now reappears in two "red chalk carbon enlargements in all the glory of wide-ranging multiple mounts. The price at which these, and other fine carbon enlargements, including four views of the Matterhorn, are marked, viz., 25s. each framed complete, seems so absurdly low when compared with the prices to which one is accustomed at other exhibitions that it would prove of interest if Messrs. Raines would make the usual custom of affixing the red labels denoting the number of copies disposed of.

The taste displayed in the preparation and arrangement of the exhibit should serve to dispel the prejudice still existing in the minds of many against the so-called "trade-work," and much benefit will no doubt accrue to Messrs. Raines and Co. as a result of their enterprise.

### Dallmeyer, Limited.

The Dallmeyer exhibit is much on the lines of previous years, and includes a series of the Stigmatic lenses with examples of work done

to include both these latter and the prints in the above calculation; but it may be added that none of the pictorial selecting committee exhibit work in the Autochrome section.

In regard to the Salon committee, it is understood that the actual work of selection in London was done by those whose names appear in italics. Others, perhaps, of the committee performed similar duties in the countries of their residence. The name of Mr. Keiley, of New York, does not figure in the Salon catalogue, but as he is believed to have taken part in the selection we bracket him with the others.

It may be interesting to add to the above table one or two figures as to the pictures shown by other members of the Linked Ring who for years past have contributed prominently to the exhibition:—

A. H. Blake .....	1	Reginald Craigie .....	1
Will Cadby .....	1	Fredk. H. Evans .....	1
Mrs. Carine Cadby .....	1	Alex. Keighley .....	1

A further numerical example of the altered conditions at the Salon this year is in the fact that, while usually sixty of the seventy members of the Linked Ring are exhibiting, there appear in the present list of "Links" the names of forty who are unrepresented at the present Salon.

In regard to the composition of the pictorial section of the Royal Photographic Society's Exhibition, the total of 309 pictures represents the work of as many as 182 photographers.

with them and with the popular "Adon" cameras made, or recommended, by Messrs. Dallmeyer also figure in the exhibit, and special attention may be directed to the triple-extension model of the "Correspondent's" camera.

### "Sanger-Shepherd and Co.

The customary stall of Messrs. Sanger-Shepherd contains a fine selection of this firm's apparatus for colour photography, the chief item of which perhaps is the quick-change adjustment for plate cameras, serving to give three successive exposures through three filters. These latter are now made to give a ratio of 1:1:1, and the attachment is conveniently made in black Russia leather to match leather-covered reflex and other cameras. Among the examples of



work which are shown are transparencies by the Sanger-Shepherd process by Colonel Lysaght, Mr. Savile Kent, and Mr. Harry Grylls, who shows a coloured photograph of some stained glass windows taken for him for the purpose of preparing a duplicate window. Some excellent examples may be seen of the work of the graduated light-filter, the various forms of which Messrs. Sanger-Shepherd are prominently showing.

### O. Sichel and Co.

The well-known "Sickle" reflex camera and a series of specimens of the lately introduced "Fulmenar" lens occupy a large portion of Messrs. Sichel's space. Some striking examples of rapid work by the lens are shown. We would draw attention to the very convenient "Finsbury" head-rest and screen, recently noticed in these columns. It is an accessory which can really be best appreciated when examined by the photographer. There is a new model of the "Sickle" mercury-vapour lamp, which should also interest professional workers. The outfit is complete with two tubes, which are tilted simultaneously, with one resistance, and the price complete is to be about £16 10s. The outfit may also be fitted with the two resistances, and for this the price is about £20 complete. The prices include two of the K type of lamp, 45 in. long, each with a candle-power of 700, with resistance suitable for burning singly on 100 volt, or two in a series of 200 volt. The firm naturally exhibit a full line of specimens of the work of their "Ideal" P.O.P., C.C., gaslight, and bromide papers.

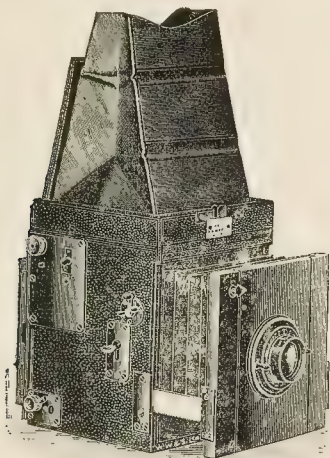
### C. P. Goerz, Limited.

Striking enlargements of the work done with Goerz cameras and shutters are, as usual, the feature of this firm's exhibit. One most remarkable piece of work is a large flashlight photograph of a

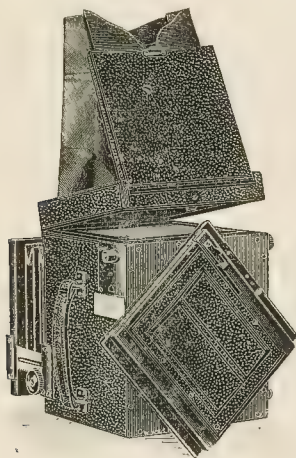
dinner from a negative taken in America. Among the apparatus will be noticed the latest model of the pre-eminent Goerz-Anschutz folding camera, and of the later introduction, the "Tenax" double extension folding camera. These, with specimens of the various mountings in which the Goerz positive and telephoto lenses may be obtained, together with examples of the equally high-class "Sector" and other shutters, complete the collection exhibited by this leading optical firm.

#### W. Watson and Sons, Limited.

A new model of the "Argus" reflex camera is a leading item at Messrs. Watson's stall. The camera is built with a revolving back, a new pattern of finder, and with the cover hinged so that the ground glass is readily accessible for cleaning purposes or for replacing.



The camera front has a continuous rackwork movement actuating the extension which provides for the use of the single combination of the "Holistigmat." The combined finder, level, and telemeter, recently introduced by Messrs. Watson, is also shown, as is also a new tripod stand, which is very light and rigid, and has an ingenious method of fastening which permits of its being very quickly erected and folded up.



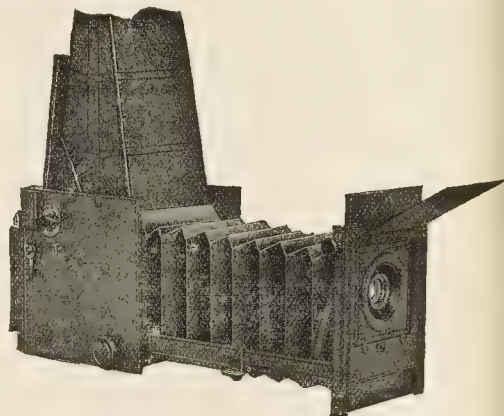
We may also mention an improved "process" camera with central screen gear, provided with micrometer stop graduated in millimetres. The dark slides are inserted by a novel method, by which all danger of wedging is obviated and the convenience of the operator increased. It has also an improved rising motion to the front actuated from the rear of the camera, so that the operator can centre his copy without moving from his position.

#### Burroughs Wellcome and Co.

The advantages provided by the many varieties of "tabloid" photographic chemicals are demonstrated in Messrs. Burroughs Wellcome's exhibit by a number of illuminated transparencies among which is an Autochrome slide developed with "Rytol," a selection of negatives and positive transparencies which owe their quality and range of colours to several of the "tabloid" preparations. Tabloid stains and dyes are also illustrated in the same way, and attention may also be directed to the results obtained by the firm's modified method of sepia toning, in which thiostannous is used in place of sodium sulphide.

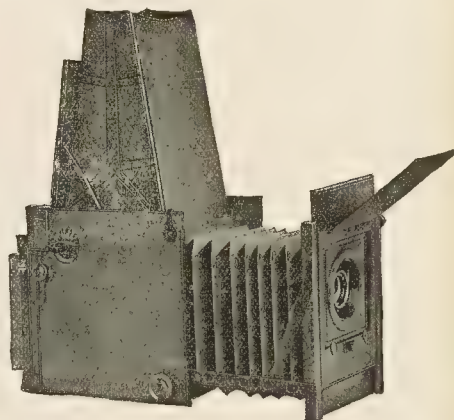
#### Adams and Co.

The hand-cameras for which Mr. Adams has made his firm famous form a small but most interesting exhibit. The "Videx" camera, which first merits attention, is now made in two models. The "De Luxe," providing triple extension, rack and pinion rising front, pro-



"Videx" De Luxe Model.

vidually controlled slow speeds of the focal-plane shutter, and its adjustable working parts metal working upon metal. The price of this model is more than the previous standard pattern of "Videx," but, on the other hand, the price of the "Popular" model, which is quite as efficient as the previous standard pattern, has been reduced. We hope to refer to these instruments more fully shortly, but



"Videx" Popular Model.

should certainly be seen by those interested in the reflex type camera. The other hand cameras shown are the "Idento," a portable instrument with the valuable feature that the finder does actually show the alteration in picture produced when the front is raised, and the still more portable "Vesta" with its rise of front each of the plate.

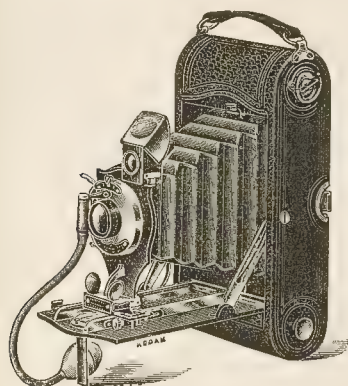


### Wratten and Wainwright.

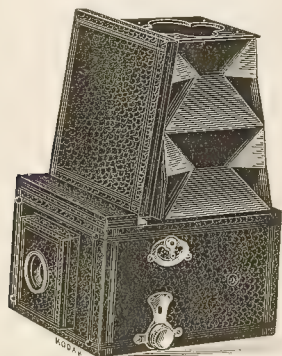
Colour in various forms exudes from the dark corner in which Messrs. Wratten have taken their space. We doubt if the firm's artistic director would admit the verb as descriptive of the phenomenon of colour; nevertheless upon the sides of a case, which resembles in size and shape an overgrown cottage piano, they strive to convey much information in a demonstrative way. In addition to exhibiting by means of Osram lamps, colour-filters for colour work and photo-micrography, and the Wratten filters for colour work, they display examples showing the use of panmatic plates with the Wratten K screen for portrait work and outdoor photography, the latter example being a photograph of "Mauretania," in which the vessel appears curiously small. Perhaps the most interesting part of the exhibit is a transparency giving the renderings of a series of coloured strips on a panmatic plate used behind a six-times screen, on an ortho' plate six-times screen, and also on an ordinary plate. The way in which the ortho' plate fails to render the green strip is quite noted. Messrs. Wratten also invite the visitor to set in motion a wheel containing segments of red and green, the combination of which by the rapid motion produces a sensation of yellow.

### Kodak, Limited.

Perhaps the chief novelty among the many which are shown at the stall of the Kodak Company is the new model of the ingenious "stereograph" reflex camera. The pattern introduced during the present summer was of a fixed focus variety, and while it gave a



size image of the subject, it obviously suffered in comparison with the stereotyped patterns of reflex. This the Kodak Company remedied by introducing a modification in which a focussing movement is provided. The new pattern, complete with rack



ing, R.R. lens, and variable shutter speed, is sold for four shillings. It provides for focussing up to within about 5ft. Another Kodak is the "1A Folding Pocket Kodak Special," which takes a picture 4½ in. by 2½ in., and is provided with a very ingenious automatic focussing lock, by means of which it may be used simply

as a fixed-focus camera, or the fine focussing adjustment instantly brought into use when required. Though differing little in construction from previous Kodaks, it allows of larger lenses being used. The compactness and neatness of the apparatus may be warmly commended. Kodak tanks for the development of plates, films, and film packs naturally occupy a good share of the space, and those contemplating tank development of plates should not omit to see the ingenious device by which each plate is certainly and quickly loaded into the Eastman tank.

### The Platinotype Co.

In regard to this exhibit, we can only repeat the good things which have been said of platinotype prints and platinotype papers in past years. The company are masters of the art of displaying their wares to good advantage, and are equally fortunate in demonstrating the process, as they do each afternoon at 4.30, and on Tuesday, Thursday, and Saturday evenings at 7.30. Among the prints hung in the miniature exhibition behind the demonstration table are some excellent photographs by Histed, and by Goldensky, of Philadelphia. One canvas-effect portrait of a lady should be specially noted, as also the charmingly coloured platinotype by Drummond Young, of Edinburgh.

### Ilford, Limited.

The centre stall of the Fountain Court is this year held by the Ilford Company, who will distribute from it free samples of their plates and papers, together with specimen prints on the various descriptions of the latter. There are also transparencies illustrating the use of the Ilford "Alpha" gaslight and bromide lantern plates, and some excellent stereoscopic transparencies shown by M. Richard from Verascope negatives, for the printing of which the Alpha plates are employed by the French firm. We were also shown some copies of an interesting book just published by Methuen—"The Lore of the Honey Bee," illustrated throughout by the author, Mr. Tickner Edwardes, from negatives on Ilford "Monarch" plates, printed (from originals for reproduction) on the firm's glossy bromide paper.

### Paget Prize Plate Co.

Though not occupying a great space, the exhibit of prints on Paget papers makes a fine display. The panel filled with bromides shows the excellent effects obtained, both with and without toning, in the case of landscape and portrait subjects. The self-toning papers show a very pleasing sepia tone, whilst the Platinoid (platinum-toned) P.O.P. is shown to good effect in the case of a number of portrait negatives. "Gravura" paper is represented by a series of prints of cold tone, very soft and charming in their effects.

### Kodak Printing Papers.

In the North Room there is a separate display of the Kodak papers, including a series of prints on self-toning collodion paper; a fine selection of work, entirely portraiture, on white "Velox"; some of the big exhibition results which are obtainable on Royal bromide, sulphide-toned; and in the fourth and fifth panels some of the more delicate work in landscape and portraiture to be done with Velox, and examples of the work of the Kodak Velvet Solio printing-out paper.

### Ozobrome, Limited.

Mr. Manly's exhibit is not a large one, nor can a wall display give a proper idea of the practical facilities of the Ozobrome process. However, the prints, which are of various subjects, are interesting on account of affording inspection of the excellent colours which characterise Ozobrome tissue. Among the prints can be seen the green-black, marine-blue, sepia and warm sepia, warm black and blue-black, and Italian green transferred to papers of various tint and texture.

### Leto Photo Materials Co

The whole of the end wall in the North Room is filled with a large collection of both amateur and professional photography printed in one or other of the Leto papers. These include the "Seltona" (self-toning), also the recently introduced "Antique" grade, together with "Tintona," which gives excellent tone effects without special

toning, Leto "Platino," specially amenable to platinum toning; and Leto gaslight paper, the varied results of chemical toning of which are shown in a series of excellent examples. The Leto Company also exhibit a collection of professional work produced on their papers.

### The Autotype Co.

The whole of one long wall of the North Room is, as usual, taken by the Autotype Co., who, in addition to exhibiting a number of their well-known reproductions of works of fine art, make a striking and, in some respects, novel display of carbon printing. It will be noticed that a good many of the prints are of quite small size, and are therefore of interest as contraverting the view, which is perhaps held by some amateur photographers, that carbon printing is only for large work. One very interesting picture is a panoramic view of the Alps (from three separate negatives by A. L. Mumm), which are pieced together by the carbon printer in a way which almost entirely baffles detection. Very close examination will show the wavy lines of the joins, but the picture shows that for work of this sort the carbon process may be successfully worked. One or two prints on the Autotype tissues from negatives taken inside and out of the "Mauretania" and "Lusitania," by Bedford Lemère, should

be of popular interest, whilst fine examples of Royal portraits of the Prince and Princess of Wales, are shown from negatives of Langier, of New Bond Street.

Professionals should not miss the examples of a new specialty, the Autotype Company's, called by them "stained drawings," whilst retaining in some respects photographic quality in the process. The examples are the first to be exhibited, although the Autotype Company have been making them for the profession for some time past. (Nos. 30, 31, 32, and 42.)

Naturally, the introduction of Autotype oil-printing tissue should be represented in the exhibit, and one or two examples of work upon it by Mr. John H. Gear and Mr. Bertram Park fully endow the good things that have been said of the tissue, which, as well pointed out in the past numbers of the "B.J.," possesses great strength and toughness under the pigmenting brush.

### Sciopticon Lantern Plates.

A large number of slides by the Woodbury process in various colours are again shown, and demonstrate the excellent brilliancy results obtainable by this now little-used process.

### THE PROGRAMME OF

THIS year, as already announced, the New Gallery is to be opened every evening of the week, and the visitor who pays his shilling at the turnstile will not only have the right to inspect the various photographic collections but, on whatever evening he makes his visit, will be able to hear a lecture, in almost every instance by someone who has made a subject or a district his special photographic study. The following is the full list of the lectures, which commence each evening at 8 o'clock:—

- Saturday, September 19.—"Protective Devices in Nature." By W. Farren.  
 Monday, September 21.—Autochrome lecture, "The Thames from Cirencester to Maidenhead." By J. McIntosh.  
 Tuesday, September 22.—"The Romance of London Streets." By A. H. Blake.  
 Wednesday, September 23.—Autochrome lecture, "The Thames from Windsor to Richmond." By J. McIntosh.  
 Thursday, September 24.—"The Path of the Eagles: Elba as it was and is." By Rev. T. T. Norgate, F.R.C.S.  
 Friday, September 25.—Autochrome lecture, "The Thames from Kew Gardens to the Sea." By J. McIntosh.  
 Saturday, September 26.—"Afar in the Fatherland." By W. L. F. Wastell, F.R.P.S.  
 Monday, September 28.—Autochrome lecture, "The Thames from Cirencester to Maidenhead." By J. McIntosh.  
 Tuesday, September 29.—"Wanderings in Zooland with Note-Book and Camera." By F. Martin-Duncan, F.R.P.S.  
 Wednesday, September 30.—Autochrome lecture, "The Thames from Windsor to Richmond." By J. McIntosh.  
 Thursday, October 1.—"Savage Architecture in British New Guinea." By A. H. Dunning, F.R.C.S., F.R.P.S.  
 Friday, October 2.—Autochrome lecture, "The Thames from Kew Gardens to the Sea." By J. McIntosh.  
 Saturday, October 3.—"Some Glimpses of the Green Isle and its People." By C. H. Oakden, F.R.P.S.

**THE PLATINOTYPE ANNUAL OUTING.**—On Wednesday in last week the annual excursion of the employees and staff of the Platinotype Company was held. Eastbourne had been fixed as the destination of the party, and the early hours of the morning saw a company numbering only one or two short of a hundred embarking by train from Penge. The arrangements for the day had already been made by Mr. W. H. Smith, the manager of the Platinotype Works. Mr. W. Willis and his brother, Mr. John Willis, arrived by motor, and the whole party breakfasted at the Grand Hotel, their headquarters for the day. The morning was spent in an excursion to Pevensey Castle, and one o'clock saw the whole company assembled at luncheon, when Mr. W. Willis welcomed his guests, Mr. P. R. Salmon, Mr. S. H. Wratten, and Mr. George E. Brown. It is characteristic of the friendly reception accorded to visitors by Mr. Willis and his colleagues that their health should be drunk by the company. Mr. G. E. Brown, in briefly responding, referred to the admirable relations existing between the employees and staff of the company, and to the

### EVENING LECTURES.

- Monday, October 5.—Autochrome lecture, "The Thames from Cirencester to Maidenhead." By J. McIntosh.  
 Tuesday, October 6.—"Wild Birds and their Ways." By Bickerton, F.Z.S.  
 Wednesday, October 7.—Autochrome lecture, "The Thames from Windsor to Richmond." By J. McIntosh.  
 Thursday, October 8.—"The Gorges of the River Ardèche." By G. E. Thompson.  
 Friday, October 9.—Autochrome lecture, "The Thames from Kew Gardens to the Sea." By J. McIntosh.  
 Saturday, October 10.—"Southwell Minster." By E. W. H. Piper, Hon. M.S.A.  
 Monday, October 12.—Autochrome lecture, "The Thames from Cirencester to Maidenhead." By J. McIntosh.  
 Tuesday, October 13.—"A British Touring Ground." By A. Marshall, A.R.I.B.A., F.R.P.S.  
 Wednesday, October 14.—Autochrome lecture, "The Thames from Windsor to Richmond." By J. McIntosh.  
 Thursday, October 15.—"Picturesque India." By Ernest R. Atkinson.  
 Friday, October 16.—Autochrome lecture, "The Thames from Kew Gardens to the Sea." By J. McIntosh.  
 Saturday, October 17.—"Some English and French Gothic Churches." By Henry W. Bennett, F.R.P.S.  
 Monday, October 19.—Autochrome lecture, "The Thames from Cirencester to Maidenhead." By J. McIntosh.  
 Tuesday, October 20.—"Flower Photography." By E. Seymour.  
 Wednesday, October 21.—Autochrome lecture, "The Thames from Windsor to Richmond." By J. McIntosh.  
 Thursday, October 22.—"Life and Work on the Panama Canal, 1908." By Vaughan Cornish, D.Sc., F.R.C.S.  
 Friday, October 23.—Autochrome lecture, "The Thames from Kew Gardens to the Sea." By J. McIntosh.  
 Saturday, October 24.—"The Camera and the Sea." By J. Mortimer, F.R.P.S.

proud position occupied by the firm as the manufacturers of the product unexcelled throughout the world. Mr. Wratten simply expressed his satisfaction at being present. Mr. W. H. Smith, calling upon the company to express their thanks to Mr. Willis for the entertainment of the day, instanced as an example of the feeling existing in the firm that the terms of service of those who are sent, if added up, would represent a period of 1,000 years. Mr. Willis appeared almost to deduce from this fact that the manufacture of platinotype paper dated back to somewhere near the Norman Conquest. Mr. Willis briefly replied, expressing the pleasure it gave him to be among them. Under the leadership of Messrs. Smith and E. A. Salt, a most enjoyable afternoon was spent, and when tea, the time came to take the train for London (and particularly when a solitary, but happy, journalist detained at Cannon Street it was felt that one of the most pleasurable festivities of the year had passed, and that fortunate are they who may look forward to the hospitality of the Platinotype Company another year.



## THE PHOTOGRAPHIC SALON.

The gallery of the Royal Water-Colour Society at 5A, Pall Mall East presents an agreeable aspect as furnished by the "members of the Linked Ring who conduct the Photographic Salon," and if one could stroll round with a cursory glance and be out again in ten minutes one might be disposed to call the exhibition a distinctly interesting show of unhackneyed things. But the critic who has to creep round and come again and again before the same works loses a good deal of that pleasurable impression. There is a style of work that does not pay for scrutiny or logical thought or critical analysis, but begs a sort of happy-go-lucky indulgence from minds more emotional than philosophical, and this is the sort that finds its way largely to the Salon. There are scarcely three works here that satisfy intellectually as well as emotionally. One has to forgo much—very much—for the sake of "feeling" and "mood," or the frantic strivings after those qualities. In these days men build reputations on those weak and shiftier soils. It is the way of the worldly, and to resist it would be the vainest of struggles. The critic must bottle his notions and try to get at the picture maker's point of view, if there is one, lamenting, in his heart, that so many people of culture should interest themselves in the mere top froth of the artistic deeps.

As the gallery is very conveniently divided into groups of work by the different exhibitors it will be easy to treat the show strictly in the order of the catalogue. We may say that this method of hanging is highly advantageous, and we congratulate the hangers upon having adopted so sensible a course. Nos. 1 to 8 are by Malcolm Arbuthnot. The first is called "The Pool." It really shows part of a horse, which may be supposed to be drinking at a pool, if not cropping grass. The semi-animal merely shows to what lengths Mr. Arbuthnot can carry his old trick of flat silhouette without being able to tell when it becomes stale and unprofitable also. By far the best of the group is "The Beach" (2). This, being fortunately in quite the opposite method, is distinctly a charming view of a seashore from a high point of view, and having a nice arrangement of figures dotted about near the top of the picture. "The Labourer" (3) and "The Topsail Yard" (4) are cheerless things, the first ill-judged in its trite composition, and the next having none of any sort. The clouds in "The Hillside" (6) are unnatural, and the figures reach the lowest depths of the commonplace. There is a feeling of atmosphere in "The River" (7), but to our unlucky eyes the bald-looking ribbon that fills up the distance might more easily be a road. Visitors on the look-out for the "new point of view" will find the very thing in "The Bathers" (8), where two tiny distant heads rising out of the water are seen through the spokes of a near and consequently huge wheel of a bathing machine, which is out of focus, and a flat silhouette, as usual.

### Demachy.

The oil prints by Robert Demachy which come next show that finer feeling which relies upon the more approved traditions of art and does not seek a bubble reputation at the camera's mouth, if we may so express the photographic process known as "selection." These prints have each an honest and sincere impulse towards the securing of artistic qualities. They are beautifully rich in colour, neither rusty nor varnished, and the portraits show remarkable skill in the most difficult of all branches of work when a method of control is adopted. We believe that M. Demachy has made a better show on previous occasions, but all who have attempted oil printing in portraiture will acknowledge the cleverness of "Portrait of Mlle. G. M." (9) and "Portrait of Mlle. B." (11), the latter most luscious in the quality of the black costume. In "A Head" (15) the expression is a little mournful, but the "Portrait of M. C. D." (16) is certainly the finest portrait in oil printing we have ever seen. Here the expression is animated and the face well modelled. It is entirely free from a peculiarity of M. Demachy's work—namely, the over-accentuation of the dark markings that sometimes occur in his faces, however they are lit. This is observable in No. 9, and also in "Blanche" (18). A nice subject of girls in white dresses who frolic amongst majestic poplars, combines a worldly gaiety with the dignity of nature quite in the manner of French art traditions.

### Lagarde, Emanuel, Molesworth.

"A Young Girl" (10), by Céline Lagarde, is rather too obviously composed to be quite comfortable; her "Road to the Cemetery" (12)

is pleasing, in spite of its title. "Curiosity" (14) is C. H. L. Emanuel's only little gem here this year. It shows some little children crowding round a doorway. It has not quite the smallness of scale that we are accustomed to from its maker. Bagot Molesworth, M.A., sends "Pompeii" (19), an excellent subject of the Temple of Apollo, and possessing considerable quality, some of which is no doubt obtained at the expense of true tonal values.

### De Meyer.

It is not incumbent upon us to dwell at very great length upon the works of the Baron de Meyer, fine as they are, since most, if not all, have already been reviewed by us when dealing with a previous exhibition in London. In view of that fact and of a rule which forbids the hanging of works previously exhibited in London, we are rather surprised to find them here at all. To our minds the "Portrait of the Painter Favai" (21) is by far the best, and of the still-life groups we prefer "After Lunch" (24). The "Baroness de Meyer" (27) suffers from a hard dividing edge between the bright tone on the bust and the low tone of the sitter's right arm. There are eight examples in all.

### Benington.

Five works by Walter Benington are a disproportionate display compared with the single works shown by other Links of more firmly established reputation, or to the absence of works by others whom we know to have submitted work not below their usual standard. Moreover, we cannot honestly say that we think Mr. Benington is striding rapidly towards a high position among pictorial photographers. His prints are uniformly dark and unpleasantly granular, and his subjects too often follow the latest craze of camera workers for taking at close quarters some wretched object of no intrinsic beauty—a thing which can only be beautiful under certain conditions of light and colour which usually manage to elude the photographer. This criticism applies more or less to "The Bridge" (28), "On the Top of the Hill" (29), "Night" (31), which is intended to represent moonlight, but does not, and "After the Storm" (32). The landscape subject, "The Rainbow" (30), is much more pleasant in subject, but how Mr. Benington can think that this murky picture suggests to the mind the glorious effect of a rainbow, with the conditions of purified air and bright sunshine that should go with it, we are quite at a loss to know. The low passage of light in the sky appears to be rather too bright for the rest.

### Coburn.

It is a real joy to see that, in his monochromes at least, Mr. Coburn is developing a finer sense of subject than he displayed a year or two back when the girder obsession was heavy upon him. Even the sham and trumpery pavilion at Brighton is made to look imposing. But heaven help the publisher that should be persuaded, against his judgment, to use such a subject as an "Illustration for the 'Arabian Nights.'"! As well illustrate "Odyssey" by photographs of the classically derived buildings in "The White City," "The Court of Honour" (34) has good colour and quality, except where the domes and pinnacles disintegrate into the air. "Saltwood Castle" (35) is hard and black. We wonder that Mr. Coburn should have thought his original under-exposed plate worth enlarging. "Rainy Evening at the Franco-British Exhibition" (36) is one of the best of its series, and gives well the melancholy of that pleasure resort when bodily comfort deserts it, and electric arc lights flaunt their icy beams where the mellow daylight lingered. But the best of all is "Fireworks" (40), highly effective in its bright splashes of light from rockets, and the illuminated towers in the middle distance. These towers, dimly lit without and brightly within, are beautifully tender in their tones. We are not quite satisfied about the colour of the print. We think "The Flip Flap" (42) ugly in every respect, and the vamped-up clouds behind it increase our disappointment. There are two views of St. Paul's, widely different in treatment, but interesting if only upon that account. "No. III." (37) shows the edifice as seen from a housetop or window at Ludgate or thereabouts. Steam from a train in the foreground does much for the subject pictorially. It is a dignified view, and, considering the hundreds of times the same aspect of the cathedral has been photographed, Mr. Coburn's may be said to escape a charge of being hackneyed. We could have wished more life and movement, more flicker and variety

in the street, which now is dull and monotonous in tone, near and far alike, and more befitting a city of the dead. In "No. IV." (38) the general effect is brighter, because of the bridge and water over which the fane towers. But here another sort of monotony occurs. A stodgy, sticky uniformity of tone smothers detail and stands in the way of aerial perspective. The others of Mr. Coburn's ten examples call for no special remark.

#### A Batch of Single Examples.

Next we deal with Mrs. Keene's "Der Bauer" (44). He is an excellent type, and sits with pipe and beer in truly characteristic manner. His wrinkled old face is a fine study. Mrs. Coburn's "Portrait of My Son" (46) does not exhibit him in a dignified aspect exactly, and he looks rather over-weighted at the hands and head. "Le Moyen Age" (47) is undoubtedly the finest photograph as such in the show. We would willingly have forgone many of the works of men so much over-represented here this year if we could have had instead more of the solid merit that the works of Fredk. H. Evans never fall short of. In this case he gives us not only perfect photography, but a delightful romantic mood in his picture of a hoary old French castle, the architectural features of which are a pictorial theme in themselves. The sunshine that plays across the front of the building is in every way admirable. "The Medallion" (48), by A. H. Blake, represents another architectural motive, for the medallion is a sculptured circular relief of life-sized Cupids, upon the head of one of which a little girl rests her hand as she gazes at the stone babies. The animate and inanimate are prettily apposite. Mrs. Cadby has been allowed to show a three-quarter length figure portrait of "Mrs. R. C. Thomas" (49). We much prefer it to her bits of grass and so forth. Mr. Will Cadby's "Camilla" (50) is another of his little children in faint tones. She is very charmingly seated upon a stool. "The Swing" (51), by Dr. A. R. F. Evershed, is a snapshot of 'Arrys in a boat swing. It has nice lines, but one cannot call it choice in subject.

#### Johnstone, Mrs. Brigman, Miss Bland, Keiley.

J. Dudley Johnstone's "Snow in the City" (43) is now such an old favourite that we are surprised to find it here. We have admired and described it before. We need only say that the high-lights appear to us too mechanically similar, as though they had all been "breaded out" with the same touch, regardless of textures and distances. His other work we think a much finer thing in every way. In the foreground is a fountain in dark tone, and beyond certain municipal buildings stretch away into the misty distance with excellent effect. The design and composition of this could not be better, and the whole thing is quite harmoniously classic in feeling, in spite of its being "In a Northern City" (45). Three nondescripts, bearing the title "Cock Fighting" (53, 54, and 55), by Miss Bland, do not interest us. Mrs. Brigman uses the nude figure in an outdoor setting, but in such a nebulous and shamefaced sort of way that her allegories are elusive to our understanding. "The Brook" (52) displays a lady undressed and squatting in a trout stream, but if she is there for any pictorial reason at all she should have been treated with more frankness and decision; she is too big to be merely an accessory to the brook. "The Thaw" (56) is another case of a model used under painful conditions, we should think, and for what literary or artistic reason we cannot tell. American pictorialists seem to think that the mere photographing of a nude person gives their work the indisputable cachet of high art. The nicest thing of J. T. Keiley's is the "Study in Grey" (58), which is a good portrait of a man. "The Man in Armour" (57) does not call for remark. Neither does "The Spanish Dancer" (59), though both are nice. It is difficult to see that these little things are of so much artistic value as to be sent across the Atlantic that a London public may admire. As for "The Spirit of Flame" (60), with its awful dabs of white in the eyes, we withhold remark.

#### Eugene.

The ten works by Frank Eugene vary considerably in merit. The portrait of "Prof. Emanuel von Seidl" (61) and "Prof. Rudolf von Leitz" (69) are fine in most ways, though the first is distinctly heavier in tone than it need have been, and the latter is over full of fussy accessories, which rob the face of its due importance. "Music" (62) is a pre-Raphaelite sort of lady playing with a violin; "A Profile" (67) is more in a Pompadour style; "Rebeckah" (63) is utterly satisfying. A charming model has been photographed in a beautiful pose and in a tasteful manner, with a tapestry background

of delightful quality. "H.R.H. Prince Luitpold of Bavaria" (64) is a child seated upon a chair. When we say that his socks are dead white and his shoes dead black our readers will understand how much technicalities count for at the Salon. "Minuette" (65) has certain nice qualities; but why it should be so called and represent a lady at back view sitting on the ground, to all appearance, Mr. Eugene best knows. "Girl with Flowers" (68) is good in arrangement; "Man in Armour" (70) shows too much hand at the bottom of the print, otherwise it is good.

#### Steichen.

Another group of ten represents Mr. Steichen. Something has happened to his "Portrait, Miss Watson" (71), which is all gone away to nothing, and is without any natural strength in the shadows. The lady has also been made to look disagreeable. "Jean Van Biesbrock" (73) is a gentleman who is posed as though he were avoiding a draught in the ear as he cowers below a piece of sculpture that would have made a better picture without his presence. Mr. Steichen has developed an unpleasant trick of making strong accents of black and white, which often come upon some unimportant part of his pictures. In the portraits, "Mrs. Dr. Williams" (74) and "Mrs. Algernon Keene Boyeson" (77), this fault plays havoc with the faces. In "At the Steeplechase" (79) and "After the Grand Prix" (80), the same high-lights, which are further inharmonious by their being of an utterly different colour to the rest of the print, give a most disquieting and unnatural effect. A man's coat and head may be black, but his collar is rubbed or faked some how into a pure white. The bright light that is forced up upon the figures is allowed to be entirely wanting in other places where it would also fall of necessity, as on the ground, for example, which is represented as dark, though a foot touching it is bright with light. These anomalies are unpardonable on any score in open daylight subjects. The limelight sort of effect of this forcing is not only untrue, but unlovely also. It is less objectionable in "Portrait, Lady Ian Hamilton" (75), where it gives a sort of "ghost of the tapestry-chamber" effect. It is seen likewise in "Venice" (72), and in "Nocturne Versailles" (76), where, however, there are other charms of subject and mood which impel us to forgive the vulgarity of the forced effect for once.

#### Stieglitz and White.

These two gentlemen have worked together to produce six pictures in collaboration. Four of them have no title, and are simply numbered. The first, "No Title, No. 2" (81), is a nicely posed lady in a partially clothed state, sitting on something low in a darkened chamber, and holding the handle of a door as she looks round apprehensively. It is the nicest of the nameless series. The next best is "No. 4" (85), where all is lost in murk but a nice face prettily lit. "The Torso" (83) is, as its name implies, a half-length female nude. It has much agreeable quality of tone, but is not effectively lit. Two more nudes flank a central mournful figure crouching over the inevitable globe—the American photographer short cut to allegory. What does it mean? What reference has to the rather hard and edgy nudes on either side, and what are they there for? We should not ask if we could find in this ambitious attempt any art of the sort that exists for its own sake, apart from subject matter.

#### White.

It is a fact that no American or German exhibitor at the Salon has permitted himself to show more than ten examples in monochrome! In Autochrome it is otherwise. Clarence H. White is one of the favoured ones who have reached the full complement of prints as well as the extra six in collaboration; but as his work is quite well known, having been before the public for many years, and as, further, his favourite model, better known still, figures here in good deal, we shall not dwell at very great length upon his group. The best of all, we think, is "The Arbour" (87), which presents a lady standing under trees in a garden or orchard—it is scarcely an arbour. Her head is in shadow, and a faint sort of sunlight falls very prettily upon the lower part of her skirt. "Portrait, Mrs. Schubart" (88), is also well worthy of note. It is a back view, and is in good style. Nos. 90 and 94 are called "The Fountain, Morning" and "Evening" respectively. The title rôle is supported by a little garden pool about the size of a large tea-tray, and having a single jet in the middle. In this a boy contemplates floating a toy boat, in the morning; and in the evening Mr. White's model kneels beside the pool.



ious scrutiny. The latter is the better picture, but neither are remarkable, the former being distinctly below what any intelligent amateur might be expected to produce. "The Young Calf" merges from a nebulous gloom after patient watching, and might all have stayed in obscurity for all the pleasure he gives when he arrives. "Head of a Girl" (96) is very pleasing, however. "The Boy" (92) is another example of the Transatlantic craze to which we have already alluded. Why is this undressed boy posing against rocks? What is the good of such things, except to impress a simple world with notions of the intensity of the art that lies in White's photography? We pass in silence the two landscapes in this gentleman.

#### Dührkoop, Anderson, Schütze, Mortimer.

A Dührkoop there is generally a combination of the qualities that exist singly in the works of others. "Study" (97) has quite a lot of points. It is, in the first place, charming in subject; secondly, is a very fine and simple style, resembling the grand manner of old master; next, it is strong and rich in tone and colour, and without any mere adventitious blackness; the face is beautifully modelled, and gradation could scarcely be more tender; all its force is gained by fair means, and harmony is nowhere violated; it is planned, fills the paper faultlessly, and is in every way a beautiful thing, besides being first-rate photography. All but a few of qualities exist also in the "Portrait of Richard Dehmel" (99) "The Sisters" (103). John H. Anderson's "Steam Trawlers off South" (98) is in such a crinkly state, and, for a print in that condition, so unfortunately hung that we are unable to form any just estimate as to its charms. His "Street in Rouen" (102) is presumably a print. It is rather overloaded and generally grubby. We cannot think that Sidney Carter has been fair to "Kipling" (100), whom it certainly has not flattered. We ask ourselves whether this portrait has been here if it had been of somebody less in the public than Kipling. Mrs. Eva Watson Schütze shows a pretty little scene upon a window seat as "Portrait of Anna-Lisa" (101). F. J. Mortimer, one of the newest of "Links," has been fortunate in having three excellent bromoids hung where the works of so many old masters have been ousted. His best is perhaps "Peace" (107), a fine arrangement of Dutch boats and their reflections. In "The Mill" (105) there is more of reflection than of mill, a rather over-photographic trick; but we have no quarrel with Mr. Mortimer at all score, since he has justified his selection so completely. The mill figures in the landscape called "In Arcady" (106). This it is in the middle distance, and seen through the branches of a tree. We do not care so much for the composition in this plate, but we should like to add that Mr. Mortimer handles the oil process more tastefully than many workers we can call to mind.

#### Craig Annan.

Next come to a group of five by J. Craig Annan, and are first noted by their harmonious appearance. Mr. Annan has a fine taste in painting. "Sunshine and Flowers" (108) is somewhat too flecked for perfect enjoyment, and we think that in simple portraiture a gifted worker shows to better advantage. His "Lady with a Fan" (114) combines just enough of a pictorial element to make interesting for other things besides a pretty likeness of the sitter.

Very Rev. Donald Macleod, D.D." (109), "A. N. Paterson, M.A., A.R.I.B.A." (110), and "Mrs. Grosvenor Thomas and Sister" (111) are three excellent examples of high-class portraiture in the professional stamp. More charm lurks perhaps in the profile and long slender neck of "The Lady Margaret" "Elsa and Rona" (113) is a prettily arranged portrait of two and "George Davison, Esq." (115), is powerful and fresh in

#### Some More Single Specimens.

Mr. Keene's second contribution comes next. She should feel in getting down on these hole-and-corner walls. Her "Plough" (116) is not quite so happy as "Der Bauer." The print is a little hot, and the high-lights are somewhat exclusively centred upon the right to the left. E. Warner's "Navvies" (117) suffers from an excessive retouching of high-lights in a medium that does not tolerate plate. "The Fantastic Pine" (120) is by Harold Jacob. We should have liked it to have more effective chiaroscuro. Reginald is never a prolific exhibitor, so we must not attribute the lack of his having a single picture here to his not being before his

time at the tryst when the hanging was performed. Nevertheless, this fine example should increase his reputation. It is called "After-glow in London" (124), and is at once delicate and strong and highly pictorial. Eustace Calland's "Harvesting" is a vignettied print with parts of much charm—the loaded cart, for example; but there is a general down-hill-look that is more attributable, we fancy, to mounting askew than to the "lie of the land" in the view. The clouds are too much like the accidental forms of free and easy local development of platinotype. Another staunch Link who is cut off with one print is Alex. Keighley. It is "Beech Sprays" (131), and we wonder why it was the chosen picture. "Diabolo" (132), by Ernest G. Boon, is extremely charming, showing a full-length front view of a young girl with bright sunshine behind her, tossing the toy into the air. Full of grace and with abundance of light and air, it should rank as one of Mr. Boon's perfect successes. We cannot say as much for E. Warner's "The Dolphin Inn" (133), a sort of oil in colours arranged with tones utterly false, full of sun-made shadows but devoid of sunshine. The background of A. R. F. Evershed's vigorous workman at half length, called "The Return from Labour" (134), is not sufficiently retiring from the figure. Another attempt at colour is "Cedars in the After-glow" (135), by B. F. Haywood Shreve. It cannot be said to be dead true to nature, but it certainly has a charm of opalescent colour, and is delightful in its way.

#### Cochrane.

Four pictures by Archibald Cochrane prove him to be in good repute with the wire-pullers at the Salon. They make no strong appeal to us, however. "The Builder" (123) is presumably a joke. The names of the others are "Havoc" (125), "Horses Drinking" (127), and "The Lost Piece of Silver" (129).

#### Hofmeister and Müller.

It only remains to speak of a few multi-colour gum prints by the brothers Hofmeister and by Müller. The latter's "Schwerin Lake" (104) is a fine large print, and is highly decorative, as all work of this class is, and must be. We dare not allow ourselves to judge it by the standard of nature without courting disappointment, but the approximation to natural colour in large fields of flat tint is certainly capable of artistic effect in the hands of such clever men as these gentlemen of Hamburg. Nevertheless, we think that breadth degenerates into emptiness in the foreground rushes of the Schwerin Lake. In Herr Müller's "Elegie" (119) the subject is much better fitted to the limitations of the method, hence the impressiveness of the theme is not discounted. The stencilling look comes again, however, with "In the Hartz Mountains" (137), an appearance that is quite in place in works of a distinctively decorative cast. What applies to the works of Müller is equally applicable to those of Th. and Oscar Hofmeister. "Landscape near Rothenburg" (118) is somewhat more dull in colour than it need have been, but its subject has the fine expansiveness that characterises all this class of work. "The Old Mill" (128) is interesting, but "Near Dachau" (136) suffers a good deal by the chilliness of its colour-scheme, especially in the greens, which are what is known as "rank."

#### Autochromes.

The show of transparencies is a very great feature of this year's Salon; we can only lament that it is not more equally representative of the members. J. Craig Annan's "Blue Gown" (138) would be one of the best portraits we have seen in this method were it not that the sitter's movement has hopelessly spoiled the face. The colours of the dress are firm local colours of good quality. With the Autochromes of A. Langdon Coburn one feels that something has often gone just a little wrong. There is no sense of perfect mastery as there is with Baron de Meyer's still-life studies. The "Portrait of G. Bernard Shaw" (140) (how this man's face dogs us wherever we turn!) looks as though the sitter had just emerged from a bath hotter than he could stand. There are eleven in this group, and those that strike us as most successful are the snap-shot "Bavarian Landscape" (142), "Portrait of Lady Ebury" (145), in a garden—a plate that pleases us highly, both for subject and colour—"Still-Life" (147), and "Self-Portrait" (150). The inordinate number of plates by Baron de Meyer says much for his enthusiasm and enterprise, but not much for his forbearance. They are all good, we admit, and we grant him taste and skill, as well as an inexhaustible resource in the way

of setting-up still-life studies of fruit and flowers; but surely twenty examples are much more than enough when all are so similar. The bloom upon "Grapes and Peaches" (162) is happily caught. In "Pink Roses" (164) we are not charmed by the cast of purple over all. A certain looseness of focus seems to have given the Baron a great advantage, and we are convinced that the larger scale upon which he works is the best help to breadth and naturalness of effect. But his score sinks into absolute modesty compared with Edward J. Steichen's twenty-nine. We have more blue globes and green globes, and blue hours and Nocturnes, and all the rest of the catch-penny high art jargon—lead soles to make the art go down. We do not know why the "Lamplight" (173) should also be called "The Blue Hour," since there seems to be none of the blue that comes by contrast out of the windows when the lamps are lit. "Portrait—Mrs. S." (175), is a good example, one of the best, in fact, though "Red Nasturtiums" (182) and "Red Geraniums" (183) are also nice schemes. "Studio Arrangement" (185) shows Mrs. Steichen seated

in a sort of marine store or old curiosity shop. The most pleasing colour of all is perhaps in "The Black Shawl" (186). It is so and rich, and the face becomes a luscious spot of colour, really by the breadth of the beautiful black garment. "Sunlight—M. and Baby Mary" (189) (these domestic scraps of information doubtless another kind of lead sole), shows a lady with disordered robes feeding an infant in nature's way. It boasts of a delicate sunshine effect. The faces of "Mr. and Mrs. Patrick Bruce" are unpleasantly hot in colour. Something good should have of "Towards the Sunset—the Wheat Field" (197)—a lady and gentleman walking through the wheat—a splendid open-air subject, of fine possibilities; but, alas! it misses the mark. In "Man with Palette—Spectral Colours" (198) the spectral colours appeal us. Warburg exhibits three Autochromes, which are very good straight sort of way, but are completely swamped by the "arrangements" and "globes" and other sports of the wholesale German and American contingents.

### THE LAY PRESS ON THE SALON.

The "Daily Telegraph" says:—"These essays in colour do not in any way advance the claims of photography to be reckoned among the fine arts for the purpose of picture making, although many of them are passably interesting as convenient colour notes which require liberal correction before they can be accepted either as realistic or impressionistic records. . . . The prints upon the walls are for the most part of a depressing and uninteresting character. In many instances the first impression they convey is that the maker has been concerned to produce a startling rather than a pleasing or interesting result, and that truth of tone—undeniably the first essential basis of all true pictorial effect—has been lost sight of."

A "Times" contributor writes:—"The selection this year has been carried out by a very small committee of most advanced views, and has been most rigorous. The result is the almost complete disappearance of the more orthodox and humdrum photography, and a Salon which is more like the Salon of a dozen years ago in its relative freshness and modernity than any that we have seen of late years. The Linked Ring, like all elderly bodies, had been settling down into somnolence and respectability. The work which it had admitted was the work which the Royal Photographic Society would itself have been glad to accept, and the justification for a second exhibition contemporaneous with the first was fast disappearing. The departure which has been made this year ought to change the state of things, and, if the organisation is able to stand the strain which such drastic action on the part of a few puts upon it, should revivify a body which was very much in need of something of the sort. . . . The Photographic Salon of 1908 is more fully representative of the most modern side of photography than these exhibitions have been in the past; and if it will promote thought and arouse discussion, . . . pictorial photography at large can only benefit by the process."

The "Daily Graphic," after naively remarking of the Autochromes that are "exhibited under conditions of lighting which render them transparent," proceeds:—"For the part of the exhibition devoted to monochrome photography there is a great deal on both sides to be said. Many photographers are still beaten by the problem of the effort to correct the false relative tones of a subject often less exaggeration and to a kind of spurious impressionism. A good deal of ingenuity is displayed none the less, but it is ingenuity of a kind that may lead to entirely erroneous notions of what the photographer should seek in his art. M. Eduard J. Steichen's "At the St. Chase" displays an extraordinary contrast of light and shade, and seems to suggest too much effort, and, consequently, a tinge of vulgarity. His work on the whole, however, is some of the best exhibited, including some superb specimens in the best taste showing the most correct technique."

The "Morning Post" writes: "As regards monochrome prints the present collection is notable in that it represents the choice of what may be termed the advanced wing of the society, which happens to consist mainly of American 'Links.' It results that the exhibition is far more harmonious in its expression of how the lost type of photographic pictorialism should make its appeal, and it naturally follows that many of the prints will be beyond the comprehension of the average visitor. A yet further result of this concord of opinion is that the Selection Committee have found it almost impossible to put full effect to their ideas as to the lines on which pictorial photography should advance except by hanging their own photographs. It is therefore quite natural that we find, in round numbers, that, while eleven members of the Selection Committee between them show about a hundred and forty prints, the rest of the world has to remain content with but sixty."

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

#### SATURDAY, SEPTEMBER 19.

Chelsea and District Photographic Society. Excursion to Golders' Green.  
Manchester Amateur Photographic Society. Excursion to Mere Clough.  
South London Photographic Society. Leigh and Benfleet. W. L. White.

#### MONDAY, SEPTEMBER 21.

South London Photographic Society. Tour in Holland. Stanley Fincham.  
Southampton Camera Club. Photography as an Educational Force. F. G. Ryder.

#### TUESDAY, SEPTEMBER 22.

Blackburn and District Camera Club. Fishermen versus Photographers. J. P. Howe.  
Manchester Amateur Photographic Society. Discussion on Mr. J. D. Berwick's "One-Man" Show.

#### WEDNESDAY, SEPTEMBER 23.

North Middlesex Photographic Society. Landscape in Painting and Photography. Horace Mummery.  
South Suburban Photographic Society. Committee meeting.

#### THURSDAY, SEPTEMBER 24.

London and Provincial Photographic Association. The Printing, Developing, and Toning of Velox. W. F. Slater.  
Liverpool Amateur Photographic Association. "Gorges of the River Auldèche." George E. Thompson.  
North-West London Photographic Society. Mounting Methods.

## News and Notes.

OWING to the space occupied by the reviews of the Salon Royal exhibitions a number of articles, paragraphs and customary features of the "Journal" are unavoidably held over until next week's issue.

**SUICIDE OF A PHOTOGRAPHIC MANAGER.**—The dead body of C. Rudd, aged fifty-nine, of Dobie Street, Barnsley, a photographic manager in the employ of Messrs. A. and G. Taylor, of Ship Road, Barnsley, was last week found in the studio belonging to the firm. Near the body was a bottle which contained a quantity of carbolic acid.

"LOOK PLEASANT?" echoed the sitter to the photographer's "My dear man, I simply can't afford to look pleasant. I'm legged, and I'm trying to hold my knees together. When I forget all about my knees, and when I pay attention to my knees, I forget to smile."—*The Globe.*

THE HALIFAX PHOTOGRAPHIC COMPANY advise us that they have been awarded the first bronze medal and highest honours for excellence of "Lilywhite" papers and postcards and "Swiftex," "cex," and "Tradex" plates at the Royal Cornwall Exhibition at Canborne, Sept. 8 to 15. Forty of the competitive prints were "Lilywhite" papers, and two of these received silver medals.



# THE BRITISH JOURNAL OF PHOTOGRAPHY.

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## SUMMARY.

exhibition of photographs in colour by the Brothers Hofmeister H. W. Müller will open at the "British Journal" on Monday September 28, and remain open from 10.30 to 4.30 daily (Sundays, 10.30 to 12.30) until October 24.

Autochromes to be seen in the North Room at the R.P.S. Exhibition at the New Gallery include some very fine work. (P. 734.) "Election" at the Salon, exposure calculations, etc., occupy our "responsiveness" columns. (P. 745.)

recent lecture by Mr. James Shaw before the Manchester A.P.S. popularised some of the methods employed by this well-known maker. (P. 733.)

G. Hammer Coughton, an English photographer now on his way to this country after twenty-five years in America, contributes notes on the Conventions which are successfully held in many of the States. (P. 732.)

propose of Sir William Abney's recent reminder as to the reversing of red light, Mr. H. J. Channon contributes a review of the forgotten work on this subject. (P. 737.)

Photography of Colour.—The first portion of some notes intended to convey to the photographer some right and useful notions the use of screens and plates in the photography of coloured objects appears on page 735 from the pen of Dr. G. E. K. Mees.

one of the considerations which require to be taken into account in making a "like-size" portrait are mentioned on page 731.

recent German patent for a mixture including acid sulphate of is a reminder of the use which can be made of this substance as an acid component of dry mixtures. (P. 731.)

experience of a French worker with the little-known Benham process of copper printing process is translated on page 738.

uses for three-colour cinematograph work, dark-room safe-lights, portable print-washers figure among patents of the week. (P. 739.)

conviction of a photographer canvassing without a pedlar's licence took place last week in the Isle of Wight. (P. 744.)

## EX CATHEDRA.

### Photographic Pictures in Colour.

On Monday next there will open at the house of THE BRITISH JOURNAL OF PHOTOGRAPHY a collection of the recent remarkable photographic work of the brothers Theodore and Oscar Hofmeister and their friend H. W. Müller, all of Hamburg. The recent labours of these workers in the field of multi-colour photographic printing have been seen scarcely at all at recent exhibitions, and therefore particular interest attaches to the present collection, which represents the work of the past four or five years by these gentlemen, who are the most notable of the German pictorial workers, even though they have not been seen at exhibitions so prominently as the indefatigable Dührkoop. It should be said, however, that the large size of many of the pictures makes their circulation a great tax, and moreover the brilliant colour effects present difficulties as regards hanging with monochrome photographs. As in the case of previous exhibitions, the pictures will be open free to visitors to 24, Wellington Street, Strand, on signing an attendance book.

### Dark-rooms, Dog-kennels, and the Parliamentary Vote.

As reported elsewhere in this issue, the Registration Court at Gloucester last week was the scene of a comedy in which photography of the amateur-professional type played the leading part. It was claimed for two would-be voters in the city of Gloucester that their occupation of certain dark-rooms entitled them to places on the voting register. One claimant turned out to be an insurance agent, and the other a post office clerk, yet both were put forward by the Conservative agents as eligible for the vote in respect of their occupancy of the dark-rooms, since, like the Duke of Plaza-Toro, they added "large sums to their makings." The revising barrister, however, dissented from this view, disallowed the claims, and, with a grim humour worthy of the claimants' pleadings, proceeded similarly to disallow a claim put forward on behalf of an alleged huntsman in respect of the lease of some dog-kennels. The catholic Gloucester mind!

### Telescopic Views.

Mr. J. E. Gore, in "Knowledge," draws attention to a number of astronomical fallacies—amongst others, to the one that a powerful telescope gives a near view of, say, the moon. It has been stated by people who certainly ought to have known better that the practical effect of the great Yerkes telescope is to bring the moon within a distance of sixty miles from the earth, though, as Mr. Gore points out, if such a view could be obtained, we should see very much less of the moon's surface than we do now. The telescopic image is, of course, merely a magnified view of the moon as it

appears at its proper distance, and the only true analogy is that of a near view of a small replica of the moon. The same fallacy has often appeared in connection with high-power telephotography. Many look upon the result as representing a near view of the distant object, whereas it is actually a view that it would be impossible to obtain at any nearer point than that from which it was actually taken. A photograph of a small replica at a certain nearer distance would correspond exactly with the telephoto result, but in this case the analogy is imperfect, as the photograph very often conveys no suggestion of undue smallness. The case here is, of course, complicated by the varying conditions that govern our conceptions of apparent size and apparent distance.

\* \* \*

#### Electric Light Installations.

The average professional worker has the reputation of waiting till the last minute. Thus, during the present spell of fine autumn weather the November fogs and the short days of December, with the usual rush of Christmas work, all seem a long way off. Then, when they are actually upon one, the problem of artificial lighting is considered, and work is rushed on, and often imperfectly done, so that the illuminant selected may be at once available. Now is the time, of course, to give the matter careful consideration, and ten or fifteen pounds thoughtfully expended now will in most businesses be more than regained before the end of the year. Too many, we feel sure, rely on making another appointment when sitters come on a very dull or foggy day, failing to realise that in such a business as photography it is of vital importance to strike while the iron is hot. In other words, few people are photographed for some specific reason, most simply "taking it into their head." Reference to our advertisement pages will show the variety of systems for artificial lighting, and while we should hesitate as to pronouncing any one to be the best, we shall always be glad to give help to inquirers if they will put before us the special requirements of their business, and give us some idea of the size and arrangement of their premises. While electric light undoubtedly takes first place for cleanliness, coolness, and efficiency, much excellent work is done by means of gas installations, and where current is not available gas must, of course, be utilised, or some form of magnesium flash. In any event, we commend an immediate consideration of the matter to our readers, or to those who desire to keep up to date and to make the most of the autumn season, which in many towns is the most important portion of the year.

#### Counting Seconds.

A writer in the "Photographic Month" suggests that the best way of counting seconds is to hum a march air, at the same time beating time with the foot, and also counting time in the discredited fashion that killed so many promising musicians in the past. Passing over the fact that it is a little difficult to hum a tune and count the time aloud at the same time there is a very great deal in this suggestion, for it is certainly true that many people can beat musical time very accurately, though they cannot count seconds (as from the musical idea) with any approach to accuracy. The usual method is to count quarter-seconds in the same way that "rests" are counted in music. That is to say we can count 1, 2, 3, 4; 2, 2, 3, 4; 3, 2, 3, 4, etc., allowing one figure for each quarter-second. If, however, counting is effected regardless of musical time one person may be really counting fifths of a second while another is making thirds, or even halves. Bring the musical time into play, and at once the counting becomes automatically correct. We do not much believe in the utility of counting for quarter-seconds. The best way to make a quarter-second exposure is to set the shutter to bulb and squeeze and relax the ball as quickly as possible. Half a second can be given by a similar method, with the shutter set to time. We prefer to use counting for whole seconds and it is astonishingly easy to count almost any number of seconds if one counts simply in waltz time, letting the number fill a complete bar. This is a much easier method than the one advocated by the writer in our contemporary and it is also more likely to give accurate results, so that waltz time is not so variable as march time, and is familiar to everyone.

\* \* \*

#### A Stereo Camera for Scientists.

In reviewing a recent scientific paper that is very freely illustrated by photographic plates, we expressed a regret that stereoscopic records had not been secured instead of simple single photographs. This was only one case of many in which the use of stereoscopic apparatus would be distinctly desirable, and the fact that scientists do not make greater use of it is perhaps due in a great measure to the fact that their requirements are not apparently considered by the camera maker. Of late numbers of stereoscopic cameras have passed through our hands, but we cannot say that one of them is of the type required for scientific purposes. In such work as this the object photographed is nearly always near; therefore the lenses must have an adjustable separation. This movement is usually lacking in the majority of cameras, even in the

### THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC FOR 1909.

Edited by GEORGE E. BROWN, F.I.C.

THE forty-eighth annual issue of THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC will be published on December 1. This year's ALMANAC reached a total of over 1,000 pages, and the entire edition of 25,000 copies was sold out immediately. Of no other photographic book ever issued can two such unique facts be recorded. The edition for 1909 will also consist of 25,000 copies.

The editorial article will deal very completely with the important subject of

#### REFLEX CAMERAS,

and the systematic review of the work of the year under the title "Epitome of Progress" will be a strong feature of the volume.

The lines followed in the previous editions of the ALMANAC will be maintained in general, but in a number of particulars the arrangement of the volume for 1909 will be

modified to make it more than ever the book of universal photographic reference.

The ALMANAC for 1909 will appeal to photographers the world over as a daily reference guide in practical work. The standard matter and formulæ will be revised and added to where necessary, and, wherever practicable, features of an informative nature will be added.

**\*\* IMPORTANT NOTICE.**—The attention of advertisers is specially directed to the announcement that the 60th edition of the ALMANAC (25,000 copies) will again be put in the hands of dealers and the trade on December 1, as to be well in advance of the Christmas publishing season, and the co-operation of advertisers to that end will be esteemed by the publishers.



most expensive kind, and when it does exist there is sufficient latitude of movement. Sometimes it may be necessary to make the lenses almost touch one another in order to get the images on the plate, but it is seldom possible to reduce the separation to less than  $2\frac{1}{2}$  inches, though a separation of  $1\frac{1}{2}$  inch would be quite feasible. Experimental work asingle-plate binocular is essential. In very few cases can a one-lens camera be used, and the simultaneous use of a pair of cameras renders the separation difficult worse than ever. In addition to this, the duplication of two plates instead of one means an extra addition of time and trouble that cannot be thought of in such laborious work as scientific photography. A two-single-plate camera specially suited to the photography of near objects could easily be devised, and it would be just as serviceable for more ordinary work as a usual pattern.

\* \* \*

**Mounting Celluloid film on paper for any purpose, such as the making of multi-negative test-plates described in issue of August 21 last, some difficulty may be experienced in attaching the strips of film sufficiently firmly to stand the somewhat pronounced curl—we are referring now to cinematograph, not to the photographic film, which has been rendered non-curling by a coating of the cement on the reverse side. It may therefore be well to mention a cement which has been found sufficient for any purpose. This is a solution of gelatine in acetic acid, a mixture which we believe is sold as a commercial liquid. The solvent action of the acetic acid upon the cellulose no doubt the cause of the satisfactory adhesion of the film to the paper surfaces.**

\* \* \*

**Sulphate** A German patent recently taken out for a mixture of potassium permanganate and sodium acid sulphate as an oxidising or reversing bath is a reminder of the usefulness of the acid or hydrogen sulphate of soda as a substitute for sulphuric acid. Obviously the latter cannot be conveniently used as a constituent of preparations which are used in a dry state, and in such cases the use of the salt often forms the useful purpose of providing the required constituent of a mixture without necessitating recourse to a separate glass capsule. It should be borne in mind that only one half the sulphuric acid in the acid mixture is in the unsaturated state, that is to say, that 240 parts of the pure solid compound represent 98 parts of sulphuric acid.

## IS A LIFE-SIZE HEAD IN A PORTRAIT?

It may seem a little strange, not to say superfluous, to raise such a question as this. Many, without entering the matter, would at once reply that "life-size" should be the exact size of the sitter, whatever that happens to be. This answer would be literally correct, but in the case of a portrait it is not always a literal measurement will convey a correct idea of life-size in a painting or photographic enlargement. In conversation with a professional enlarger, whose business is chiefly among professional photographers, he said that he frequently received orders to make from the photographer a life-size enlargement on a given size plate; many instances he did not carry out the instructions literally, as he knew that if he did the result would not be satisfactory to the photographer or his customer. People seem to have strange ideas as to what is a life-size portrait when it is framed and hanging on a wall. For example, we have a portrait of an elderly lady hang-

ing in one of our rooms; it is a vignettted head and bust, about 18 x 15. Many persons on seeing it have remarked, "Oh, that is life-size," whereas, by actual measurement, it is nearly an inch and a half less than the actual size of the lady's head. It is the head-dress and the small area of the whole picture in this case which conveys the idea that the portrait is the size of life.

It is generally accepted amongst artists that the average size of a man's head is eight and a half inches, and that of a woman seven and a half inches—that is, from the point of the chin to the top of the head. By the top of the head the top of the scalp is meant, and not the top of the hair; such a measurement as that would, of course, be fallacious if it were applied to men who have a profusion of hair, or to ladies whose coiffure sometimes is some inches above the scalp. In such circumstances, if the head in the portrait were made true to life-size, the portrait would appear to be above life-size, more particularly if the picture were a comparatively small one, say 20 x 16. This brings us to another point. The size—or rather apparent size—of a head depends very much upon the size of the picture itself, and the frame it is put in, as well as the position in which it is hung. If the same enlargement be hung at nearly the top of a lofty room it will appear to be smaller than if it were hung about on a level with the eye. An artist, when he paints portraits, takes this into consideration, and if he knows they are to be hung in a lofty gallery he usually makes them something larger than that of life—that is, measured by the foot-rule. This point should be borne in mind by photographers when they have a commission for a life-size portrait.

An actual life-size head, we will say, in an 18 x 15 picture, which, by the way, will include but little of the bust, framed up close, and hung on about the level with the eye, will seem to have a common, if not a vulgar appearance, particularly if it is a portrait of a lady. Whereas if it were a 24 x 18 or 30 x 24, which would include very much more of the figure, it would appear as it should do and convey a good idea of an actual life-size portrait. This is due to the amount of figure included in the picture causing the head to appear in proper proportion.

Another point for consideration is that portraits of a husband and wife are frequently required as a pair to hang side by side. It may happen that the lady has large features and a round face, also a profusion of hair. On the other hand, those of the gentleman may be small, the face thin, and possibly he may have a bald head. In these circumstances if the two portraits were enlarged to correct life-size—by foot-rule measurement—the two when hung together will not appear to match. The majority of persons seeing them would say that the lady's portrait was too large, or, possibly, that the gentleman's was too small and insignificant. In such a case as this, if life-size portraits were ordered, a far more satisfactory result would be obtained by making the lady's head a little less than actual life-size and the gentleman's a trifle larger. If that were done the portraits would appear to be truly life-size and make a satisfactory pair when hung together.

In connection with this part of the subject we may refer, by way of illustration, to a case that came under our notice a year or two back. A photographer of our acquaintance had executed an order for an enlarged portrait of a gentleman. It was a vignettted  $5\frac{1}{2}$  in. head and bust. The gentleman was thin, had very thin features, and the original portrait had been taken three-quarter face, and three-quarter figure. The enlargement gave such satisfaction that another, same size, was ordered, but this time from a different sitting. In this the sitter had been taken full face and nearly full figure. When this picture was

received by the customer it was complained of as being smaller than the previous one. We saw both pictures, and the latter one seemed decidedly smaller than that first made, while a foot rule showed that it was really half an inch larger. We mention this case merely to show that in making enlargements judgment should be exercised as to what the finished picture will appear.

Comparatively few photographers make their own enlargements, but send them to professional enlargers with, frequently, very vague instructions. This often leads to disappointment when the picture is received. Enlargers will join with us in the suggestion that the photographer should give definite instructions, say, to make the enlargement so many inches between two given points marked on a print from the small negative. This can be easily decided upon in the following simple way:—A sheet of cardboard, or paper, is taken, the size the enlargement is to be. The negative is put into the dark slide of the camera,

which is then taken into a darkened room—not necessarily an actual dark-room. The shutters of the dark slide are then withdrawn and a light placed behind the negative; an ordinary paraffin lamp will suffice—the image projected on the cardboard, and the camera moved backward until the size of the image, that it is judged to look best in the finished picture, is obtained. Then the distance between two conspicuous points, say between a button on the coat and the extreme top of the hair, is measured. These points are then marked on a print from the small negative. If then the two together are taken to the enlarger with instructions to make the enlargement to measure so much between the two points marked on the print, there will be no disappointment when the picture is received. If this were always done the photographer, through seeing an actual enlarged image, will be able to judge whether its dimensions are actually those he requires.

## AMERICAN PHOTOGRAPHIC CONVENTIONS: AN ENGLISHMAN'S VIEW.

WHEN I left England twenty-five years ago for America I had never heard of an English convention; and, as all I have heard about them I gather from the pages of the English photographic journals, I cannot be expected to know much about them; but I do recognise a distinct difference between the two, which I will endeavour to explain.

### The American Convention is Professional.

In the first place, the American Photographic Association, known by the three letters P.A. of A., is distinctly an association of professional photographers; the membership is made up from all the States in the Union and a considerable number of Canadians. They meet in convention for instruction and information first, and second for fraternal intercourse and enjoyment. There is a floating membership of about two thousand. What I mean by a floating membership is this: If the convention is held in a large city where there is a large outside population to draw from, there will be a large attendance, and photographers from the nearby towns or villages will join the association, as no one can attend or have the benefits of the convention and its exhibition who is not a member. It follows, therefore, that if the next convention is held in a city far removed from his district, the photographer who has joined for the benefits to be had in the city near him will most probably omit to keep up his membership, till it is held again in some nearby city. In this way there is always a fluctuating membership, although the membership keeps about the same number year by year.

### "The Latest" at a Convention.

As I understand it, the English convention is mostly made up of amateur photographers, and the object is not so much information or instruction as amusement, more in the manner of a picnic to some noted place or some place where there is good material for the camera. This would not command anything like so large an attendance as the convention of a professional body who are brought together to see the work of others, and compare it with their own, who come to see the latest devices of the manufacturers as to cameras, backgrounds, and other appliances for the improvement or labour-saving part of their work. For the American conventions make greater provision for the exploiting of the manufacturing part of photography than is done at the exhibition of the Royal Photographic Society of Great Britain. I know, in my experience of photographic associations in Eng-

land from 1868 to 1880, the idea was to keep out all business and commercial influences; but from my experience of American conventions from 1884 to 1908, I know that if the manufacturers and dealers in photographic goods were debarred from the meetings or conventions of the P.A. of A., the Association would lose its membership and soon cease to exist.

### Conventions v. the Photographic Press.

America is such a large country, the cities so far apart, that in many cases the conventions are the only medium by which the small country photographer can get into touch with the latest improvements either in apparatus or methods of work. I do not think that the American photographers as a whole are readers of photographic journals, as are the English. It is within the last few years that we have had a weekly photographic journal. There are now two, but they are not nearly so large, and, to judge from the contents, find some difficulty in keeping up the interest week by week; so that it may well be that the information and instruction that the American photographer seeks in his convention the English photographer gets through his weekly photographic journal.

But it is even doubtful if one can call American conventions successful, if we judge by the number of photographers attending at the annual conventions of the P.A. of A. There are about fifteen thousand professional photographic establishments in the United States. Reckoning on the very conservative estimate of one assistant to each gives a total of thirty thousand. The average attendance at any convention is about eight hundred. It has reached one thousand, but that is exceptional.

### The Change in America.

The fraternal features of these conventions have increased with time goes on. When in 1884 I wrote for "The British Journal of Photography" about the convention at Cincinnati, I said that in America there was not the interchange of thought and experience among photographers that I had seen in England; when an American photographer worked out one thing that he thought was an improvement, he rushed off to the Patent Office to secure it for himself. It was so then, but now that is not so much of that sort of thing. Men found that by the interchange of experience both could gain without loss to either, so the fraternal spirit now dominates the conventions, and



(as we saw at Detroit last July) some of the best-known photographers giving up their time, and demonstrating their methods of work, both in posing and lighting, while in the case of Mr. Illips some methods of securing pictorial subordination by elopment were shown. These are some of the methods that the American conventions a success.

Another thing which I think deserves mention is the systemated, I think, by the New York State Association of sectional

clubs as feeders to the central body. Each city in the State has its section, which is affiliated with the central body, and includes the photographers not only in that city but all who wish to join within a certain radius of that city. This has proved such a success that other States—Pennsylvania and Virginia and others—are taking it up, and the system seems destined to further advance the social status of photographers and to greatly add to the fraternal feeling.

G. HAMMER CROUGHTON.

## “GOOD” SLIDES AND “FINE” SLIDES.

[An unconventional report of a lecture given by Mr. Jas. Shaw before the Manchester Amateur Photographic Society September 8.]

PERHAPS you have no personal knowledge of Mr. James Shaw (Rothenburg and Manchester). Let me tell you, then, how to be identified. You see a man upon the pavement in conversation with his friend. He pulls himself up straight, he raises his hand above his head, he lunges forward, dives to half height, and at the same moment brings the raised hand and closed first a thud into the open palm of the other. Now, if in addition to this you observe the said friends standing well back for fear of accidents you may know assuredly that this is Shaw. He talks with enthusiasm. He makes “fine” slides with the same material. Indeed, enthusiasm, experience, and a few things bought of a chemist’s are all he seems to use. If you suggest “you are not on slides” he would resent this, for, as a matter of fact, there is nothing for mere slides; he likes “fine” slides. The subject of his lecture before the Manchester Amateur Photographic Society was, therefore, only a clear reflection of himself—“the differences between good slides and fine slides.” Shaw has no aid. He is restless in the rut of other men’s wheels, and will do anything to attain his end, if only the end promise “fine.”

As already remarked, when Shaw talks to you he must have a sink. So it is when he works. His sink is a small swimming-bath on legs. There is Thomas’s formula to the right of him, Howard Farmer to the left of him, mercury in front of him, the slide which must be “fine,” or else be a cover-glass, is placed with a zeal worthy of French tirailleurs before Hougoumont. A portion of the slide seems to hang fire in development; you go, his finger into the dish; you expect to see the finger protruding through the bottom of the dish; but, no, it rests upon the slide, and now the warm ball of the finger is being gently pressed over the lagging high-light detail just to coax it into visibility. You think he is working in a haphazard way. He is not. He knows what he wants before he begins, and then he goes for it.

It is not to come to particulars.

Shaw has a slide—this has stood by him for years—which he uses as a standard gradation. There must be nothing in any slide higher or lower in tone than the lights and shadows of this slide. He seldom tests by means of the lantern. When a standard slide is projected upon the screen the shadow of the pointer, when held between the lantern and the screen, can be clearly seen as denser than the densest portion of the slide. This proves that light is passing through the densest portions, and that light should pass through is essential to the consistency of the shadows. In other words, when you can hold

your hand before the densest shadows of the picture upon the screen without being able to see the shadow of your hand distinctly, the slide does not belong to the order called “fine.”

If the slide be judged for density in the hand, then one must be able to read print through the densest parts, while the high-lights when laid upon a piece of white note-paper, must appear veiled.

It is quite needless to repeat Thomas’s formula, as it is to be found in every text-book. But Shaw never uses it at full strength. Fond of warm tones, he gives—for such tones—three or four times normal exposure, and lets the developer down to quarter, or even less, strength. Although he swears by this formula he is not wedded to it. He flirts with ferrous oxalate when he wants a pure black and very transparent shadows, but realises that for this developer his exposure must be just correct. When he has a particularly hard negative to deal with redolinal is his refuge.

Does he get a good slide every time? No, he does not, but he can afford fifty per cent. of failures, since for every slide he needs a cover-glass. If one slide is “good” and the other is “fine” he uses the “good” one to cover the “fine” one. No good slide-maker buys cover-glasses; these are made for and sold to beginners. That is Mr. Shaw’s aphorism—uttered perhaps in a vein of irony. As to toning, Mr. Shaw is generally satisfied with the colours given by the three developers named, but if he desires a blue he uses the gold toning bath rich in gold. This does not clog the shadows, and yields a good pure blue.

Uranium seems with him to have stood well. Some uranium-toned slides ten years old were shown, and these seemed to have remained in excellent condition.

Perhaps, however, he makes the greatest use of mercury. This he uses for three distinct purposes: (1) To change the colour of the slide, (2) to intensify a weak slide, and (3) to treat a purposely under-developed slide for the purpose of getting a quality which he cannot get in any other way. Slides treated with mercury he redevelops with the hydroquinone solution. Howard Farmer reducer he makes great use of to secure brilliancy; and to those who desire to get a good slide from a hopelessly thin negative he recommends the following:—After exposure develop the slide until it is so dense that no light, however strong, could project an image of it upon a screen, then reduce the slide in the above reducer till satisfactory.

The whole lecture was illuminating, and was greatly enjoyed by all who heard it.

HACKNEY PHOTOGRAPHIC SOCIETY.—The annual exhibition will be held at the King’s Hall, Hackney Baths, from November 4 to 7, inclusive. In the open classes silver and bronze medals will be offered at the disposal of the judge, Mr. A. H. Blake, a gold medal also offered for the best picture in these three classes. Entries

close October 19, and entry forms are now obtainable from the secretary, Mr. Walter Selfe, 70, Paragon Road, Hackney, N.E. It is stated that exhibits will be collected from the R.P.S. and Salon exhibitions, without additional charge, on receipt of the signed official card.

## THE AUTOCHROMES AT THE NEW GALLERY.

WE were not able to fully review the Autochromes last week owing to the fact that they were not arranged in the show-cases. A second visit, however, fully confirms our first impression that, as a whole, the collection is a remarkably good one. The method of showing is also very successful by daylight. They are fixed in frames inclined at an angle, and are viewed in horizontal mirrors placed underneath, the only defect being that a double image is sometimes apparent, especially when the slides are very brilliant. The quality of the mirror-glass no doubt has much to do with this. At night the result is not so successful as by day, owing partly to the want of sufficient light and partly to its yellowness. Faintly tinted blue filter-screens laid over the slides at night and removed in the day-time would no doubt greatly minimise the colour trouble, but the difficulty of obtaining sufficient light is obviously rather a serious one in the circumstances, and those responsible for the arrangements are certainly to be congratulated on the great improvement that is manifest in the present arrangements as compared with those of last year. We imagine that we shall not be far wrong if we attribute the success of the present arrangement to the efforts of Mr. McIntosh.

We have already referred to the jewel study, No. 519, by Mr. H. O. Klein, as representing the lustre and beauty of the precious stones very perfectly. Unfortunately, this example is in one of the worst positions for good illumination, but careful inspection will reveal the peculiar qualities to which we referred. This transparency is, however, seen to greatest perfection in the hand. Nos. 520 and 521 are by Mr. Walter Barnett, and the first, entitled "At the Old Leather Bottle," is a beautifully soft example, full of delicate colouring, but perhaps also rather too full of subject. The child standing in the doorway is quite charming, and we think this young lady deserved a plate to herself. "The Heart of the Forest" is rather more ambitious—full of strong colouring, with some beautiful sunshine effects, but rather too artificially classic in subject to be convincing on an Autochrome plate. Unfortunately, both Mr. Barnett's fine pictures are somewhat marred by double reflection. These are the three first pictures on the catalogue and on the stands, but after these three the numbering of the exhibits is very erratic. The catalogue order is apparently disregarded, and it is in consequence very difficult to preserve any particular sequence. From this point we, therefore, consider the slides in subjects. Taking the landscapes first, as we have already dealt with two of them by Mr. Walter Barnett, Mr. Imre Belhazy has in Nos. 543 and 544 some most delightful studies of light and shade. These are perfect little pictures, well selected and composed, and showing beautifully cool, soft shadows coupled with warm sunshine. Again, in 545, "A Pastoral," Mr. Belhazy shows us some beautiful effects of sunlight on foliage in a country lane, together with perhaps the best representation of a sky that we have yet seen. The subject is more familiar than in the other two, but the result is equally charming. In 547 Mr. Andrew Bacsa also rivets attention with a light effect that attracts one with its suggestion of coolness. This also is a very pleasing little picture, showing a quaint out-of-the-way corner that might not have presented any possibilities to a less observant eye. Both these exhibitors are from Budapest, and their work is new to us. We hope to see much more of it in the future. A very effective picture is Mr. W. Taylor's "St. Michael's Mount" (565), in which the distance and the strip of sea visible have almost a paint-like quality. No. 566, also by Mr. Taylor, is worth study. Mr. G. C. Laws has a very fine subject in "Bluebells" (No. 567), while in 569 to 572 Mr. U. M. Jones shows a beautiful little set of four landscapes. Mr. W. Partridge, in "The Gardener's

Cottage" (No. 578), has a pleasing study of greys and greens, while his "On Welsh Mountains" (No. 579) represents a sunlit Welsh valley. In 533 he shows us one of the old-fashioned types of country cottage gardens, with the wealth of blossoms that usually characterise them. Mr. Rowland S. Potter also deserves congratulations for his two exhibits, Nos. 668 and 669, the first of which is a study of autumn tints, while the second shows some Swiss chalets in a sunlit corner of a mountain pass, the whole forming a very attractive, even though very little, picture. Numerous other landscapes are to be seen, and they are all worth attention, though we have not space to mention them all. For some reason or other we failed to find in the show-cases some of the pictures listed in the catalogue, and we are therefore unable to refer to the productions of some well-known workers.

Figure studies and portraits are also fairly numerous, and Mr. Warburg is a prominent and very successful exhibitor. In No. 527 visitors will recognise a well-known character at the Franco-British Exhibition, where Mr. Warburg has also found several other excellent subjects. No. 536 is a good example, showing a bold and successful colour scheme. Dr. Drake-Brockman has some good portraits in Nos. 621 to 625. These are all excellent from the technical point of view. They are very true in their rendering, and the fur in No. 621 may be specially noticed. No. 540, "Field Flowers," by Andrew Bacsa, is a figure study worth close attention, as the figures themselves are very soft and delicately rendered, though, to our minds, the very bright green grass and yellow flowers strike a slightly discordant note.

In the general subjects Mr. Ellis Kelsey is very successful. All his still-life subjects are perfect, No. 530, "Roses," being very strong and true flower study, while the strawberries in No. 585 are very realistic. No. 586, "All Souls' Church, Eastbourne," is one of the few architectural subjects, but it does not strike us as so successful as the rest of Mr. Kelsey's work. The colouring is rather hot, but possibly the church decorator has something to do with this. Mr. S. A. Pitcher's "South Aisle, Gloucester Cathedral," No. 646, is a transparency worth notice for its fine representation of stone.

Mr. Edward J. Bedford has a uniformly good exhibit, including a landscape in which some rich yellow gorse forms the principal object. His "Springtime" (No. 658) is also worth special mention. The rest of his work is mainly of the nature-study type, and we would mention No. 655, "Larvæ of Emperor Moth," as a specially good example. Mr. Martin Duncan, in Nos. 643 and 644, and Miss L. E. Bland, in Nos. 587 to 597, also show some excellent nature studies. No. 593 is a good example of the effect of protective colouring, as the young gulls are by no means easily detected amid their rocky surroundings. The beautiful colouring of the rocks in some of Miss Bland's pictures is well worth noticing. In more rigidly scientific work the exhibition is rather strong, and in regard to this we have a slight grumble to make. We are certainly of the opinion that exhibits such as No. 618, excellent as they may be technically, are not quite in place at the New Gallery, and we think that for several reasons the technical selecting committee would have been better advised if they had left this one at least out of the show-cases. Dr. Drake-Brockman's series of slides illustrating the evidence to hand in the Middlesbrough murder case of this year are a very interesting set, and, though somewhat gruesome, show what an important part colour photography may play at times. In his pathological studies, No. 617, "A Fading Black Eye," may arouse interesting memories of a painful or pleasing character according to the person most concerned. Messrs. Arthur Barfield and J. I. Pigg show a number of fine polariscope subjects, and Mr. H. O. Klein some spectra of the flame arc. All these



be studied with interest by those interested in pure science at the same time the fine colour effects will no doubt attract many who do not understand the subjects.

We are glad to see that still-life subjects of the type that were common last year, and that this year fill the majority of the spaces at the Salon, are very few at the New Gallery. Those that exist are good specimens; but the more experienced Autochrome workers have evidently realised that this type of work is too easy to be worth very much attention, and the success that attended their efforts in the direction of much more serious

and more difficult work is really remarkable. Last year the landscapes were all more or less indifferent, and doubts were expressed as to the possibilities of the Autochrome plates in the direction of pictorial work. This year these doubts should soon be put to rest by a study of such work as is shown by Messrs. Belhazy, U. M. Jones, W. Partridge, Rowland S. Potter, and others. Another pleasing feature is the absence of the wild and irritating colour discords that characterised some of the early work, and that are still to be seen in the productions of those whose appreciation of colour appears to be defective.

## THE PHOTOGRAPHY OF COLOURED OBJECTS IN PRINCIPLE AND PRACTICE.

[The following article, which will be completed in a succeeding issue, to be issued by Messrs. Wratten and Wainwright, who specialise so well explains matters in the practice of orthochromatic photography, in connection with the permission of his firm we quote from advance sheets of the book. Our readers, for the sake of the chapters on portraiture, landscape, reproduction work, and the tri-colour process, all in relation to the photography of coloured objects. Messrs. Wratten and Wainwright will shortly publish the volume at a nominal figure.—Eds. "B. J."]

At the commencement of these chapters, which are essentially concerned with the analysis and photography of colour, it will be well for us to get a definite idea as to what is meant by "colour," and with what physical phenomena colour is associated.

The nature of colour is involved in the conception we obtain of the nature of light. The nature of light has long been a matter of speculation, and it was generally held that perception of light depended on the reception by the eye of small discrete particles shot off from the source of light; just as at one time it was held that the perception of sound depended upon the vibration of the ear drum of small particles shot off from the source of the sound. This theory of light has the advantage that it immediately explains reflection; just as an india-rubber ball bounces from a smooth wall, while it will be shot in almost any direction by a heap of stones, so these small particles would be reflected from a polished surface, while a rough surface would scatter them. This theory of the nature of light appeared plausible until it was found that it was possible, by dividing a beam of light and slightly lengthening the path of one of the waves, and then re-uniting them again, to produce periods of darkness, similar in nature to the notes produced in an organ pipe where the interference of the waves of sound is taking place. It could not be imagined that a reinforcement of one stream of particles by another stream of particles in the same direction could produce an absence of particles, while the analogy with sound suggested at once that, just as sound was known to consist of waves in the air, so light also consisted of waves.

Light cannot consist of waves in the air, partly because we know that it travels through interstellar space, where we imagine there is no air, but also because the velocity of light, nearly 186,000 miles per second, is so great that it is impossible that it could consist of a wave in any material substance with which we are acquainted. It is, however, supposed that there must be something spread through all space and all matter, a substance which is termed the ether, and that light consists of waves in this ether.

Now, just as in sound we have wave notes of high frequency, and notes of low frequency, so with light we may have different

issues, is composed of several chapters from a book by Dr. C. E. Mees, to be issued by Messrs. Wratten and Wainwright, under the title of "The Photography of Colour." Dr. Mees' photography that frequently presents difficulties, that by

The full text of the latter we would recommend to the perusal of landscape, reproduction work, and the tri-colour process, all in relation to the photography of coloured objects. Messrs. Wratten and Wainwright will shortly publish the volume at a

frequencies of vibration, some falling upon the eye at very short intervals, while other waves are of only half, or even less frequency.

Since the velocity of light is the same for waves of different frequencies, it is clear that the waves of high frequency will be of shorter wave length than those of low frequency, the length of a light wave being the distance from the crest of one wave to the crest of the next.

The wave length of the light, like the velocity, will vary with the medium in which the light is travelling. For instance, when light is travelling through glass it will only have about two-thirds of the wave length of the light travelling in the air. But it is convenient to consider simply the wave length of light as the length of the wave in free ether, or, for practical purposes, in air. White light consists of vibrations of many degrees of frequency, i.e., it consists of waves of various lengths, and a mixture of waves of all lengths in certain proportions forms what we term white light. If, instead of allowing this heterogeneous mixture of waves to fall upon the eye, we omit waves of certain frequencies from those entering the eye, then the brain will receive a sensation of colour: that is to say, colour is associated with wave length. White light being made up of waves of different lengths may be regarded as being made up of light of various colours, and by different devices may be split up into these colours. When this is done there is obtained what is known as the spectrum.

Since different lengths of wave correspond to different colours, the spectrum corresponds to a scale of different length waves. The following diagram gives a simple arrangement of the spectrum, the numbers representing the length of the waves and the colours being placed against them. (Fig. 1.)

It will be seen that the visible spectrum extends from 7,000 to 4,000, and is equally divided into regions which may be broadly termed:—

Red .....	7,000—6,000
Green .....	6,000—5,000
Blue Violet .....	5,000—4,000

If we make a filter which only lets through the portion of the spectrum between 6,000 and 7,000, then we should call that filter a red filter; a filter letting through from 5,000 to 6,000 would be a green filter; and a filter letting through from 4,000 to 5,000 would be blue-violet in colour. Thus from the spectrum we already derive the idea that light can be divided into three

colours, which we may call the primary colours, red, green, and blue-violet.

Remembering this conception of light, let us address ourselves to the question of why a given filter is red. It will appear red because it only lets through red light, but white light consisting of red, green, and blue-violet is falling upon it, so that clearly it is red because it stops or absorbs the green and blue-violet light.



Fig. 1.

Similarly, a piece of red paper is red because it reflects red light, but it has falling upon it white light consisting of red, green, and blue-violet, so that it must absorb the green and blue-violet light, not reflecting them, and only reflecting the red light. We are therefore justified in saying that anything which absorbs green light and blue-violet light together will be red.

It is this aspect of colour, that objects are coloured because they absorb, which must be clearly and definitely understood if the best results are to be obtained in the photography of coloured objects. Unfortunately, however, the conception of colour as an absorption is not common, though I believe it to be the most useful one, and it will be necessary for me to somewhat elaborate this subject in order to prevent misconceptions arising. It seems to me that we should form the habit of considering a red object, not as one that reflects red, but as one that absorbs green and blue-violet.

The importance of this definition is that it defines "red" without reference to the colour of the incident light. Take a scarlet book and examine it by a light containing no red, such, for instance, as the mercury vapour lamp, in which red is almost entirely wanting. The book will no longer reflect red light, because there is no red light for it to reflect, but it will still absorb the green and blue-violet light of the lamp, looking black; it has not changed its nature, and we should still be justified in saying that it is red if we define red as we have done above.

In the same way, a yellow object is not one which reflects yellow light (there is very little yellow light indeed in the spectrum, and if an object reflected only yellow light it would be so dark as to be almost black), but a yellow colour is due to blue absorption. It reflects the other two components of white light, green and red, so that we should be justified in saying that yellow light consists of green light plus red light, but for our purpose I want to consider yellow simply as a lack of blue, that yellow is minus blue, so that if you have a beam of yellow light and add blue light to it, you will get white light. Now what is green? Well, since white light consists of red light, green light, and blue light, green is clearly white light minus red and minus blue; and a green body is one which absorbs both red and blue, the difference between a green object and a yellow object being that the yellow object absorbs blue only, whereas the green object absorbs the red light which the yellow object reflects.

We can now make clear what is meant by complementary colours. As is shown in the diagram, white light consists of red light, green light, and blue light. The next section under this shows the blue blotted out, leaving the mixture of red and green, that is, yellow. We should say, then, that yellow is complementary to the blue-violet. In the same way, in Fig. 2, all green and blue is blotted out, leaving only red, so that red is complementary to green-blue. In the bottom diagram all red and blue is blotted out, leaving only green; green then is complementary to this blue-red mixture, which is usually known as magenta.

In general, then, the light absorbed by an object may be said to be complementary to that reflected by it.

So far, we have only considered intense colours. We have imagined that a red object absorbs the whole of the green and the blue-violet light, that is to say that its absorption is complete. But most things have only partial absorption—the absorption is incomplete.

Red	Green	Blue
Red	Yellow	Blue
Red	Green	Blue
Red	Green	Blue

Fig. 2.

Partial absorption can be in two forms, it can be gradual, or it can be sharp; thus, if you take a photograph of a spectrum and put in front of the spectroscopist a solution of erythrosine, then that erythrosine will cut a clean patch out of the spectrum between 4,800 and 5,500, as is shown in the photograph (Fig. 3 and 4). But if you put in front of the spectroscopist a cell containing gentian-violet you will get a gradual diminution of intensity between about 4,700 and 6,200.

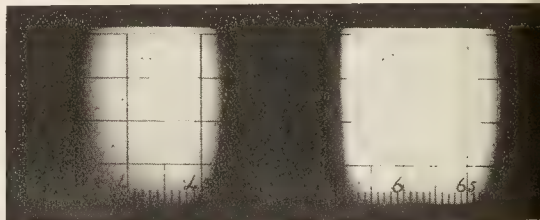


Fig. 3.

with the least light transmitted about 5,800. Thus different dyes and different substances give different classes of absorption, the two kinds being roughly sub-divided into (1) sharp absorptions, and (2) gradual absorptions.

Let us examine the effect of a single sharp absorption band different parts of the spectrum. First, consider a sharp absorption band situated in the red about 6,500, and producing a total absence of red in this part. The remaining colour consists of

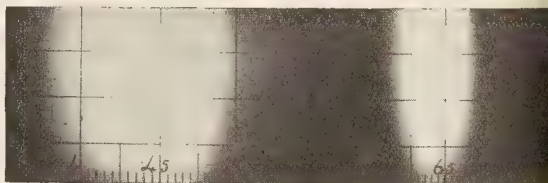


Fig. 4.

the blue-violet and all the green, with some of the red. The actual visual effect of the mixed colour is what one might expect a "sky-blue." Imagine this band to shift so as to absorb in the orange; say that it absorbs between 5,800 and 6,100; the colour now will be a light violet-blue, because there is a great deal of red being transmitted and less green. If the band now shifts into the yellowish-green from 5,400 to 5,900, it will absorb a great deal of the green and none of the red, and its colour will



ome bluish-purple. As it shifts lower in the green towards blue this purple becomes a reddish-purple, so that when the d is situated at from 5,800 to 5,300 we have what is generally

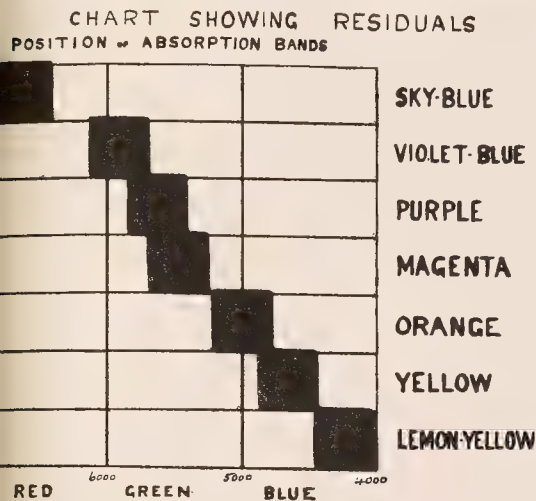


Fig. 5.

wn as magenta in colour. As the band shifts towards the e, the blue fades out of the magenta, green taking its place; hat when the band is from 4,700 to 5,100 the colour is a sort

of orange, and as the band moves into the blue-violet, allowing the whole green and red to pass, but stopping more of the blue-violet, the orange becomes a yellow, and finally a lemon-yellow. So that if we imagine a single band to pass down the spectrum, we get a change from light sky-blue through purple, magenta, orange, and yellow, to lemon-yellow. (Fig. 5.)

Now it will be seen that there is one class of colour which does not enter at all into this series, namely, the greens. There is really no visual suggestion of green in any colour formed by using a daylight spectrum and absorbing one narrow band only. In order to get a green, we must have an absorption both in the red and in the blue. Thus, if we absorb the extreme red and also the extreme blue, we shall at once get a green, and as these two bands vary with regard to each other, we shall obtain various shades of greens. Thus, if the red absorption band is very strong and the blue absorption band is weak, we get blue-greens; if the red absorption is weak, and the blue strong, yellow greens.

Green is almost the only common colour due to two absorption bands, and other colours which on analysis prove to have two absorption bands generally tend to be mere variants in hue of some colours which we have already discussed under the heading of single absorption bands. A brown colour is fairly common, and the bands of a brown are of a gradual absorption type, generally extending through the blue-green with a transmission band in the violet; that is to say, a brown is really a degraded orange, and is a variant on the colour described as orange, resulting from a single absorption band in the blue-green.

C. E. KENNETH MEES.

(To be continued.)

## RAYONS CONTINUEATEURS AND NEGATIVE RAYS.

AVING some time ago read up a little of the history of the photo-chemical action of the less refrangible rays of the spectrum, it has occurred to me, apropos of Sir William Abney's reference to that important and strangely neglected subject in the August number of the "Photographic Journal," that a few notes upon the action of these rays might perhaps be interesting.

It was very soon after the invention of photography that the peculiar photo-chemical effects produced by light of the greater wave-lengths was first observed, and M. Edmond Becquerel made the first contribution to our knowledge of the subject. This was in 1839, when he presented a most valuable paper to the Académie des Sciences, in which is described his discovery of the action of the *rayons continueateurs*.<sup>1</sup> The paper evidently made a great impression on the scientific men of the time, and an extremely favourable criticism upon it was given in a report by Biot, in which the author, a very young man, was highly complimented. Becquerel, in his paper, considered the rays of the spectrum as falling into two classes: the first, which he described as *rayons excitateurs*, included ultra-violet, violet and blue; the other class comprised those in the green up to the red end of the visible spectrum, these being the *rayons continueateurs*. The first sort have, as is well known, a direct action on photographically sensitive matter, but the *rayons continueateurs* were found to have the peculiar property that, while they are inactive in regard to a previously unexposed photographic plate, they have a strong effect on any image already imprinted on the plate. Thus they have no power to initiate, but can only on work already commenced, and a weak, insufficiently exposed image can be greatly strengthened and improved by exposing the whole surface for the requisite time to even illumination by the *rayons continueateurs*, which will increase the intensity of the stronger parts, while leaving untouched those which were not impressed in the original exposure. His conclusions were founded on experiments made with Daguerreotype plates and with papers coated with

silver chloride, and with silver bromide. In all cases the same results appeared. The continuing action on Daguerreotype plates was found to be so effective that images which had received ordinary exposures could be developed without the use of mercury, simply by exposing the plate to light behind red glass. Soon afterwards Gaudin produced some very successful results by this method of development with the *rayons continueateurs*, but found that yellow glass was to be preferred for that purpose.

Within a short time of Becquerel's discovery, another phenomenon, produced by some of the less refrangible rays, was observed, which was apparently in absolute contradiction to the former. So far from continuing and strengthening the impressions produced by the more photographically active light did these rays prove to be, that they counteracted the effect and undid the work of that light. Sir John Herschel seems to have been the first to notice this action, but after full consideration was inclined to attribute the effects shown, not to any negative action, but merely to the secondary effect of the heat of the red rays, leading to "the maintenance of the paper at those particular parts in a state of superior dryness to the surrounding parts, by which its sensibility is materially diminished." It was Dr. J. W. Draper, in 1842,<sup>2</sup> who first asserted the existence of rays having a negative action, which he did very confidently, stating that "there is a class of rays commencing precisely at the termination of the blue and extending beyond the extreme red which totally and perfectly arrest the action of the light of the sky . . . these negative rays seem almost as effective in protecting as the blue rays are in decomposing iodide of silver." Draper, however, seems to have been rather an unsafe investigator, and the results he showed were not found to establish his theory very satisfactorily. It will be noted that these negative rays of Draper cover exactly the same portion of the spectrum as the *rayons continueateurs* of Becquerel, to which the latter attributes precisely opposite qualities. It seems a strange contradiction, and yet there is little doubt that both observers were to a great extent in the right. There are evidently

<sup>1</sup> "Comptes Rendus" (Savants Etrangers), 8, 2nd Series, p. 373.

<sup>2</sup> "Phil. Mag.," 1842, p. 313.

two opposing actions induced by the rays at the red end of the spectrum and, accordingly as circumstances favour the one or the other, so positive or negative action will be found to follow.

Little more seems to have been heard of the question of negative rays till 1846, when a reference to their retarding action by Lerebours led to the publication of a preliminary paper by Foucault and Fizeau<sup>3</sup> who had been engaged a long time in investigations regarding the photographic action of the spectrum, and had already, in 1844, deposited a sealed packet with the Académie des Sciences containing an account of the principal conclusions arrived at. Their experiments consisted in subjecting Daguerreotype plates, previously exposed for a short time to white light, to the action of a very pure spectrum and developing the images thus produced, with mercury vapour in the ordinary manner. They found that, up to line C, the whole spectrum on the violet side gave a more or less strong positive impression, so that all the rays from the violet to the orange had a positive action. Those rays on the other side of C, the red and the ultra-red, had always a contrary action, the image being weaker than the ground, and over part of the image the action of the pre-exposure was completely undone, the silver plate remaining entirely bare in that place after development. With varying lengths of exposure to the spectrum, it was found that the position of neutrality was shifted, and the very interesting observation was made, as regards a certain part of the orange rays, that "the act in regard to a sensitive layer already imprinted by white light in which, photographically speaking, the violet dominates, as if at first they destroyed its effect, in order afterwards to modify this layer in a manner special and peculiar to themselves." This evidence of conflicting action is significant. The investigators had also experimented with sensitive papers and constructed various intensity curves, etc., but an account of all this was to be deferred till the production of a memoir, which it was their intention to present

<sup>3</sup> "Comptes Rendus," 23, 1846, p. 679.

later on to the Académie, but which, I fear, never saw the light. Becquerel criticised the foregoing communication rather severely but his objections did not appear to be very convincing.

After this the whole subject seems to have dropped out of not for a long time. Some patents were taken out for employing yellow light in various ways for the purpose of accelerating exposures. Daguerreotype work, and I believe at one time such methods were rather freely employed, but after the discovery of more rapid methods of photography were soon put aside and the whole matter pretty nearly forgotten. Bunsen and Roscoe, fifteen years later, asserted that the facts established in the most valuable investigation carried on by them at that period showed that the special property of "the so-called *rayons continuaturs*" had no actual existence, their verdict was probably widely accepted. But an examination of their arguments seems to show that they were not very well acquainted with the subject on which the decision was given. The remarkable facts which they had discovered as to photo-chemical induction explained well enough the effects resulting from supplementary exposure to white light in photographic processes, but, by very few experiments, they might have convinced themselves that the actions of such supplementary exposures and of *rayons continuaturs* are totally different things. It is even possible that *rayons continuaturs* may have produced slight inaccuracies in some of their work. In many of the experiments, tints printed on paper coated with silver chloride had to be compared with a scale on the same material, both scale and test-pieces being unfixed. For this work a powerful sodium light was used which was considered as quite safe, having been proved to be entirely without action on unexposed paper. It is not certain, however, that such a light would be without continuing action, and the scales may have been falsified by it, to some extent, without the investigators suspecting it.

H. J. CHANNON

(To be continued.)

## PHOTOGRAPHIC PRINTS BY THE CHROMATE OF COPPER PROCESS.

(A Paper in "La Photographie des Couleurs.")

THE process worked out by C. E. Benham, in which bichromate of copper is used, has been known for some years, although very little used. It consists in sensitising by artificial light a paper which has been well sized with the following solution:—

Copper sulphate .....	8 gms.	.....	$\frac{1}{2}$ oz.
Potass. bichromate .....	15 gms.	.....	$\frac{1}{2}$ oz.
Distilled water .....	170 ccs.	.....	6 ozs.

This is filtered and kept in a yellow bottle, and preserves its properties under these conditions indefinitely.

M. Dillaye recommends the use of ammonium bichromate, as being more rapid and giving better detail. His formula is:—

Potass. bichromate .....	7.3 gms.	.....	114 grs.
Ammonium bichromate ...	8.5 gms.	.....	130 grs.
Copper sulphate .....	8 gms.	.....	$\frac{1}{2}$ oz.
Water .....	170 ccs.	.....	6 ozs.

The author has found, however, that these two formulæ work equally well. The paper, sensitised with either of the above, is dried in the dark, and is then ready for use. It is exposed under a negative in the printing frame and progress of the print watched, as a brown image is gradually formed on the golden yellow ground of the paper. When the finer details begin to show, almost as in the platino-type process, the print is well washed in cold or tepid water, in order to completely remove the excess of bichromate. The highest lights of the print and the unexposed edges of the paper should then appear white when held up to the light. The general fault among those first using the process is to cut the washing too short.

### "Development."

When washing, the print is placed in a dish, face downwards (in order to shield it somewhat from the light), and the water changed fairly frequently, particularly at the first stage of the washing. The image which has been sufficiently washed appears somewhat reduced in intensity, and is of a faint greenish colour on a white ground. For

convenience we will call this the primary image, which has now been "developed." This operation may be done at once, or at a later stage after the print has been dried. Development is done with pyrogallol acid, dissolved at the time of use in water. In this process the print at first appears to fog and veil, but at the end of about a minute it assumes a fine sepia tone and the details re-appear. The clearness of the print is dependent upon keeping the pyrogallol solution free from colour; when once the depth given by the process has been reached further treatment will not increase it. There is, therefore, no need to hurry the removal of the print from the bath. Further, any possible fog on the print may be avoided by adding an acid to the solution. The whites then remain perfectly clear. The following formula has proved successful:—

Pyro .....	1 gm.	.....	45 grs.
Acetic acid, glacial .....	10 ccs.	.....	1 oz.
Water .....	100 ccs.	.....	10 ozs.

No doubt other acids might be used, such as citric. When development is finished the print is washed in several changes of water and dried, becoming thereby a little darker. It is an advantage finally to treat the print with an encaustic paste before mounting. The Benham process depends for its success upon the observance of certain simple and necessary precautions, that is to say, exposure must be just right, washing must be thorough, and the developer must be acid. Moreover, the paper sensitised must be of a suitable kind. Papers sized with resin or arrowroot give a very feeble print; good results it is necessary to use papers strongly sized with gelatin, such as those used for single transfer, but still having a matt surface. Papers which, when examined by reflected light, show numerous small shiny points, give only grey and fogged prints, and the same thing happens in the case of papers having a baryta substratum. It is a safe rule to choose the paper as for the oil process, or to take a paper with a very slight resin size, and add to the sensitising solution, at the moment of coating, a fairly large proportion of g



ne, such as that employed in preparing carbon tissue. In this case, however, it is difficult to avoid markings; with a transfer paper giving a good coating of gelatine the Benham solution distributes itself well, being readily absorbed by the gelatine. Sensitising is thus done very easily, a fine sponge or a soft brush being used; any little markings disappear of themselves when the paper is dried. The sensitised paper will keep several days if stored in a dry place, but it is better to employ it the day after making. It is fairly sensitive, almost as sensitive as platinum paper.

#### Reduction and Intensification.

The image, which is somewhat veiled, can be cleared by passing the print into a 1 per cent. solution of oxalic acid. The image is thus reduced as a whole and the contrasts are not increased. If it is desired to give the print more contrast, or if the veil on the print is at all pronounced, it is well to adopt the method customary in the use of over-exposed gum prints. The print is laid, face up, in a dish, and a solution of about one-fifth strength of ordinary commercial Eau de Javelle. The gelatine of the paper tends to dissolve and assumes a soapy character under the finger, but it is then gently rubbed with the finger or a soft bit of cotton wool under the liquid, particularly on parts which it is wished to lighten. A perfectly pure high-light (the white of the paper) can thus be obtained if necessary; but traces of the Eau de Javelle are removed by washing, and the print is dried. This expedient will give the most brilliant effects from weak negatives. If the Eau de Javelle should be allowed to act too much it is possible, after the print has been dried, to re-develop it in pyro, but in any such treatment as this it is essential that either the pyro or the Eau de Javelle should be completely removed from the print by washing before subjecting it to treatment with one or other of these substances, since the two together in the print will give a reddish stain, which cannot be removed.

It will be found that in washing the print bearing the primary image it is impossible to obtain a pure white if the paper has been too much exposed. In this case, before the primary image is developed (in the acid pyro), the print should be placed for about a minute in a 1 per cent. solution of sodium sulphite, washed for a few minutes, and then developed in the acidified pyro solution. It will then be found that the image develops almost as red chalk, whilst the ground of the print assumes a rose colour, which latter disappears whilst the print remains in the developer, and there is finally obtained an image of an orange colour which is less intense than that which could have been obtained by the ordinary development without sulphite.

It is also possible, in the same circumstances of over-exposure, to develop the primary image, not in pyrogallie acid, but with a strong solution of gallic acid. One thus obtains a somewhat weaker print but with better detail.

#### Intensification.

In the case of an image which is too weak, due to under-exposure, the print should be placed in a solution of 1 per cent. potassium chromate in 500 parts of water, in which the print will gradually increase in strength, assuming a brownish tone. The action is stopped at the desired stage; if taken too far the effect may be to veil the print.

#### Toning Processes.

If the print bearing the primary image be immersed in the solution of a metal, such as silver, iron, or lead, the bichromate of which is insoluble in water, this latter metal will replace, to some extent, the copper in the primary image. The treatment is followed by washing and the print is then developed in the ordinary way. In the case of silver the final tone is brownish-red. As before development it is necessary to remove the excess of silver salt by a bath of hyposulphite, there would not appear to be any great advantage in this method. In using it, however, with the primary image, it should be placed in a weak solution of silver nitrate, next in a bath of hyposulphite, and then developed.

To tone with lead the print bearing the primary image is placed in a solution of acetate or nitrate of lead, well washed and fixed. The excess of lead salt is difficult to remove by washing, and is liable to veil the print, although a treatment with oxalic acid or Eau de Javelle will put matters right. The colour of the lead-toned print is a chocolate. The most interesting toning agent, however, is iron, which gives prints of bistre tone, the best method of work being as follows:—The primary print is dipped in the pyro developer given

above, to which has been added 10 ccs. of a strong solution of ferrous sulphate, which forms, with the developer, an ink-like mixture. Here the print is toned black, the ground, however, at the same time, becoming dark violet; this, however, can be quite cleared off after the full period of development and treating with a 1 per cent. oxalic acid solution, which clears the ground. Any final deposit in the whites can be removed with Eau de Javelle.

The effect of other developers has been tried only to a very limited extent. It is found that a plain solution of diamidophenol in water develops the primary image to a colour approaching violet.

The process should certainly repay the attention of amateur workers. It is rapid, most inexpensive, and the results may certainly be considered as permanent; they have the character of prints in gum or carbon, but with the full rendering of the half-tones and great sharpness. Moreover, the process enables a great range of papers to be selected from.

DR. THIEBAU.

## Photo-Mechanical Notes.

### Flat Metal-framed Half-tone Screens.

A RECENT patent specification (No. 27,791, 1907) of Max Levy, of Philadelphia, describes the production of a screen for half-tone photo-mechanical work in which the edges are made of thinner substance than the main field of the screen, with the result that the whole screen can be given a metal frame which is flush with the glass on either side.

The frame, which in no instance exceeds the thickness of the two connected lined plates, is preferably made of metal, aluminium being suitable, and in each instance the frame has a groove to receive the reduced margin or tongue of the screen, the depth of the groove being such that the inner edges of the frame will be in line with the shoulders to hold the plates against movement should the cement between the plates become softened. The cement is placed either in the groove in the frame or upon the reduced margin of the screen before placing the frame upon the screen. The cement that is placed between the frame and the screen not only serves to connect the parts, but also forms a tight joint, and the flexibility of the cement allows for the difference in contraction and expansion between the glass and the metal.

The frame may be made up of one or more pieces of sheet metal which are bent in shape or connected to overlie the tongue or reduced margin of the screen, the corners of the frame being either mitred or square, and when the corners of the screen are removed the space in such instances will be filled with cement.

### PHOTO-MECHANICAL PATENTS.

The following patent has been applied for:—

PHOTO-ENGRAVING.—No. 18,775. Improvements in and relating to the preparation of surfaces suitable for photo-engraving. Arthur Payne, 31, Bedford Street, Strand, London.

A CONVENTION CANTERBURY PILGRIMAGE.—A few days ago a party, consisting of Mr. H. Snowden Ward (the president-elect), Mr. Walter Potter, and Mr. F. A. Bridge, set out for a pilgrimage. They did not start from the "Tabard" in Southwark, nor—as far as we can ascertain—did they have peas in their shoes, either boiled or raw. Their object was not to visit the dismantled shrine of Becket, but to make a tour of the neighbourhood of the cathedral city to prospect suitable places for the Convention excursions when the members assemble there in July next. The journey between London and Canterbury was made by the much maligned S.E. and C. Railway. On arrival the party was taken in hand by Mr. A. H. De'Ath for a three days' motor pilgrimage to some of the most interesting villages and towns in Kent. These included Patrichtown and Bekesbourne, Bridge, Littlebourne, Ickham, Wickham, Wingham, Fordwich, Sturry, Charing, Wye, Chilham, Faversham, Davington, Ospreng, Ashford, and the Surrey towns of Rye and Winchelsea. When the time comes for deciding upon the programme probably Rochester and Maidstone will be added to the above list, and the difficulty will be to know what to leave out, as many of the places mentioned have enough photographic material to occupy a considerable time, to say nothing of Canterbury itself.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents were made between August 31 and September 12.

**CAMERAS.**—No. 18,265. Improvements in photographic cameras and stands for the same. Albert Nixon, trading as Camera Construction Co., and Owen Lindley, Eagle Works, Durham Grove, Hackney, London.

**CINEMATOGRAPHS.**—No. 18,428. Improvement in cinematograph optical lantern and similar apparatus. Thomas Daniel Ersser, 89, Friern Road, East Dulwich, London.

**ENLARGERS.**—No. 18,478. Improvements in photographic lantern enlarging apparatus. The Thorton-Pickard Manufacturing Co., Ltd., Arthur Gray Pickard, and Thomas Ripley Foxcroft, 6, Bank Street, Manchester.

**DEVELOPING APPARATUS.**—No. 18,570. Improved apparatus for developing photographic roll films in the strip where a dark-room is used. James Jerome McGhee, 65, South Side, Clapham Common, London.

**NEGATIVE CARRIERS.**—No. 18,640. Improvements in the negative carriers or holders of photographic enlarging and reducing cameras. George Lloyd Moore, 35, Temple Row, Birmingham.

**COLOUR SCREENS.**—No. 18,744. Improvements in or relating to the manufacture of screens for use in colour photography. Louis Dufay, 111, Hatton Garden, London.

**COLOUR SCREENS.**—No. 18,750. Improvements in and relating to the manufacture of grained screens for making colour photographs. Charles Louis Adrien Brasseur, 18, Southampton Buildings, London.

**DARK SLIDES.**—No. 18,769. Device for use in introducing plates into and removing them from photographic dark slides. Charles Wallace, 4, South Street, Finsbury, London.

**CINEMATOGRAPHS.**—No. 18,783. Life-motion-picture apparatus. Joseph Bianchi, 18, Southampton Buildings, London.

**CAMERAS.**—No. 18,920. Improvements in photographic cameras. Thomas Frederick Virgo, and Houghtons, Ltd., 88, High Holborn, London.

**SHUTTER.**—No. 18,922. Inside shutter for photographic cameras. Charles Henry Rott, 17, Orange Street, Swansea.

**PLATES.**—No. 18,987. Improvements in or connected with photographic plates or films and envelopes therefor. The Thornton-Pickard Manufacturing Co., Ltd., George Arthur Pickard and Robert Edwards, 6, Bank Street, Manchester.

**TRIPODS.**—No. 18,995. Improvements in camera stands. William Percy Wilcox, 60, Newhall Street, Birmingham.

**TRIPOD.**—No. 19,198. Improved photographic camera tripod. John Wilkinson and Alfred Wilkinson, 4, St. Ann's Square, Manchester.

**DAYLIGHT DEVELOPMENT.**—No. 19,218. Improvements in apparatus for use in developing photographic plates in daylight. Xavier de la Croix, 322, High Holborn, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

**THREE-COLOUR CINEMATOGRAPHY.**—No. 7,514, 1908. The invention consists in the use of large aperture non-achromatic lenses for taking and reproducing records of colour in cinematographic projection. It is found that as in this method screens are used which absorb about two-thirds of the rays, the lenses used need not be corrected chromatically, as, by absorption of about two-thirds of the rays, the chromatic aberration is reduced to about one-third of its detrimental influence. The only thing required is that the individual pictures shall be of exactly equal size. This requirement is met by letting the focal distance of the individual lens-systems be of equal length for the fields of rays from which they are to produce pictures. As lens-systems capable of satisfying these conditions, such systems (for example as the so-called Herschel double lenses) are recognised, which consist of a bi-convex lens having a concavo-convex lens arranged immediately behind it.

Such lenses present only an insignificant spherical aberration, and form large aperture lenses, while the same are not chromatically corrected.

As the lens-systems used must, in order to obtain the correct proportions of perspective, and to avoid distortion, have a focal distance that is not too short, they also allow a large diameter of the lenses, with regard to their manner of action in other respects. A certain stereoscopic effect is unavoidable, because the different lenses must be arranged at the side of each other, and when the projection of the images is made, the individual composing pictures will, therefore, never cover each other with absolute accuracy but, for the purpose of restricting this effect as much as possible, it is necessary to arrange the axes of the lenses as close to each other as possible.

If three colour-screens are used, for instance a blue, a red, and a green one, the first mentioned, which requires the least amount of light during a given time of exposure, is suitably arranged in the middle, and the combination of lenses placed in front of this screen is provided with recesses or incisions in order to make room for the two other lenses. Ch. Peter Christensen, 13, Helgesvej, Copenhagen, Denmark.

**PROJECTION LIGHT VIEWING CHAMBER.**—No. 23,818, 1907. In connection with projection lanterns it is necessary to employ means for enabling the user to ascertain from time to time the condition of the source of light, and for this purpose it has been proposed among other devices, to suspend from an adjustable rod a box or chamber provided at its end nearest the source of light with a pin hole and at its outer end with a disc of ground glass or the like. The object of the invention is to modify this device so that it can be usefully employed in optical lanterns for cinematograph displays and the like. The box or chamber, provided with a pin hole, is mounted on the door, or, if desired, the opposite side of the lantern, in such manner as to be capable of being longitudinally adjusted and of being readily removed when required. George Robson, 21, Rochdale Road, Leyton, Essex.

**DARK ROOM SAFE LIGHTS.**—No. 8,368, 1908. The invention consists of light filter formed of suspended transparent particles, e.g. of lead chromate: 10 ccs. of a 10 per cent. solution of nitrate of lead are added to an aqueous hot 10 per cent. solution of gelatine, whereupon 10 ccs. of a 10 per cent. solution of lead chromate of potassium are poured drop by drop into the hot gelatinous solution of nitrate of lead which is continuously stirred. A yellow precipitate of very finely emulsified chromate of lead is thus formed. The excess of soluble salts is eliminated by washing in a similar manner as is done with the preparation of gelatine-plates. After washing, the non-actinic emulsion is heated in the waterbath at about 45 deg. C., filtered, and is then ready for use. The hot emulsion can be coated once or twice upon the surface of any suitable transparent material of convenient shape, size, and thickness. If the power of such screens has to be increased without sensibly affecting their luminosity, aqueous or alcoholic solutions of aniline—or methyl—(orange or violet methyl) colouring substances can be added to the solution either before or after solidification. When such substances are added after the screen has been finished, the screen has to be immersed in an aqueous or alcoholic solution of the colouring substances. If in certain cases it should be necessary to use considerable quantity of such colouring substances, the quantity of emulsified salts may be reduced in proportion. The non-actinic screens, made with absorbing salts as above, with or without addition of colouring matters, possess the same filtering properties as the coloured glass screens or paper screens used at present, but are infinitely more luminous than these latter. Xavier Jeannett and Emile Manvillum, 51, Rue Bonaparte, Paris.

**PRINT WASHERS.**—No. 27,680, 1907. This invention consists of a print washer designed to save storage and to facilitate exposure. To this end it is constructed in two parts, the one being a receptacle for the water and the other being a means of supplying the water.

The receptacle for the water is stamped out or made up of metal or any other suitable material in such a shape that it will nest inside the other. Along the edges near the top of such receptacles a series of holes is pierced to act as an overflow. The other portion consists of a clamping device to grip the



edges of the receptacle and to support a water delivery device in a suitable position, so that where it is attached to a water supply the water will be delivered in such a way as to cause the contents of the receptacle to revolve together with the prints.

Each part can be separated from the other in a moment, and each part will be interchangeable with corresponding new parts. By this arrangement a great saving of storage space is made without in any way sacrificing efficiency. W. Tylar, 41, High Street, Aston, Birmingham.

**CINEMATOGRAH MECHANISM.**—No. 563. 1908. The invention is of a safety shutter cut-off for the cinematograph projector for use both when the apparatus is stopped and when the film chances to break below the window. The system (magnetic) described, while able to cause the two required actions separately, causes the fall of the same shutter at the stoppage of the cinematograph and also when the band or film breaks or disappears; in case of severance or disappearance of the band the magnetic action is caused by the alteration of the tension of the band or its disappearance from the under part of the projecting apparatus, i.e., below the exposure window.

The apparatus necessary for bringing about the desired results are: 1, A shutter; 2, an electro magnet, these being the essential parts of the system; 3, a contact or automatic breaker to cause the obturation when the band breaks. The shutter may be placed at any convenient position relatively to the unrolling machine as will facilitate ready access to such machine, but is best placed near the condenser where the rays are not concentrated and give off but little heat, thus permitting the use of a material for the shutter which otherwise might be injured or spoiled; as the magnet may be constructed of any desired strength, the shutter may be of any weight, e.g., of unpolished glass. Thus, transparency, which is so necessary for the rapid and sure putting into position of the band or films, is an advantage added to the advantage of automatic falling. Eugène Louis, Amédée, Lertourné, 2c, Rue Pavée, Rouen.

The following complete specifications, etc., are open to public inspection before acceptance, under the Patents Act, 1901.

**LOUR SCREENS.**—No. 18,759. Manufacture of grained screens for making colour photographs. Brasseur.

**CINEMATOGRAHES.**—No. 18,783. Life-motion-picture apparatus. Bianchi.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### The Young Lady in the Reception Room.

Some few weeks ago (writes Mr. F. M. Sutcliffe in "The Amateur Photographer and Photographic News" for September 22) your professional contemporary had a series of papers on "The Young Lady in the Reception-Room," and showed how much she had to do with making or the marring of a business. It was shown how her hot and pushfulness increased the orders, and how her want of these qualities made business bad. Mention was made of the many qualities which go towards the making of an ideal receptionist—intelligence, gentleness, love, suffering, all the things St. Paul wrote but no note was made of that quality which womankind is supposed to be wanting in—namely, humour. That this virtue is not merely missing in the composition of the woman will be seen in the following extracts from my letter-book:—

"The Grand Hotel, Sandbay-by-the-Sea,

"August 2, 1908.

Mrs. Ponsonby Jones would like Mr. S—— to photograph her some morning when he is in a good temper and wide awake. Will be glad to know what time will be convenient."

Reply found in letter-book next morning:—"Mr. S—— is in a very good temper this morning and wide awake. He has no engagement for 11 a.m. to-day, if this hour will be convenient to Mrs. Ponsonby Jones, etc., etc."

**S. MENDELSSOHN, LTD.**—This old-established firm, conducted many years at Pembridge Crescent, London, W., has now transferred itself to new studios at 41, New Bond Street.

## New Apparatus, &c.

The Firelight Portrait Accessory. Sold by Marion and Co., Limited, 22 and 23, Soho Square, London, W.

Those who remember the article by Mr. Essenhigh Corke, which appeared last year in our issue of July 12, and described the methods of making firelight and lamplight effects in the studio by daylight, will be interested in hearing that an accessory which further facilitates this work has been placed upon the market by Messrs. Marion and Co. The apparatus is to enable the photographer to secure effects such as those by Mr. Corke also by daylight only and without any alteration or modification of the studio, so long as this building can provide a top light. In the method, as originally described by Mr. Corke, it is necessary to place the sitter upon a platform raised a foot or so from the ground, but by the modification which is now made all the work is done in the ordinary way on the floor of a studio, which has top-light, the only labour which the photographer



has to perform being the placing in position of the fireplace accessory, which also includes the background, and suitably posing his sitter. The illustration shows the accessory with a chair placed in position for the sitter, and we have before us a selection of prints showing the very charming and striking effects which are thus easily secured.

Those who turn back to the article which we have just referred to will find that the method advised for preparing the prints is either the bromide process, followed by the immersion of the print in a suitable yellow or orange dye, or carbon, using a transfer paper of suitable tint. However, the examples before us, which are almost equally effective, are made simply on P.O.P., and the photographer who takes up this form of photograph has the opportunity of giving to his results just as much warmth and vigour as the preferences of his sitters may render advisable. In other words, the depth of the dye or the colour of the transfer paper enables one to "turn on the firelight glow" to any extent. It will be found that it is easy to overdo it, but we can imagine that there are many classes of customer in whose eyes the somewhat overdone garish result is very likely to prove more acceptable than the less pronounced renderings which more truthfully reproduce a firelight lighting. The present season is an opportune one for photographers to interest themselves

in this special line, and it is not too much to say that a display of a few portraits made with the ease which is now afforded by the accessory should attract much attention in any town to the photographer's studio.

The accessory is sold by Messrs. Marion for 85s.; the oak chair shown in the illustration is 57s. 6d. extra.

The Isostigmat Anastigmat. Series I.  $f/4.5$ . Made by R. and J. Beck, Ltd., 68, Cornhill, E.C.

This is a new series of the Isostigmat, specially designed for the most rapid work. The lens we have tested is a No. 3 of focal length  $4\frac{1}{2}$  in., or, more exactly, 4.6 in., according to our measurements, and for a lens of such rapidity and cheapness its effects are somewhat striking. It gives a circle of illumination of  $5\frac{1}{2}$  in., and will therefore just cover a quarter-plate, though the hand camera to which it will be most perfectly suited will be one of the popular  $3\frac{1}{2}$  by  $2\frac{1}{2}$  size. At full aperture it gives extremely fine definition in the centre of the plate, while the falling-off towards the margins is very slight, much less than we expect to see with the ordinary R.R. lens working at  $f/8$ . For the sake of comparison, we tested this Series I. Isostigmat against a Series II.  $f/5.8$  lens, using the same aperture— $f/8$ —in both cases. As a general rule, an  $f/4.5$  lens need not be expected to perform quite so well at  $f/8$  as a lens of similar quality constructed to be used at  $f/5.8$ , but in this case there is very little difference. The circle covered by the Series I. lens is slightly smaller, and much more clearly defined at the margins. The marginal definition of the image is, however, very little inferior to that of the other, while the evenness of the illumination is as good, if not a shade better. In fact, the  $f/4.5$  lens, even at its full aperture, seems to give very satisfactory illumination. The most marked difference between the lenses is in the matter of depth, the new lens having distinctly less near depth and greater far depth than the older one when focussed on an object 8 ft. away. As has already been announced, this new lens will be sold on similar terms to the first Isostigmat during the month of September, the Series III. in plain iris mount being sold at £3 12s. 6d. during that period instead of at the full price of £4 15s. It is worth noting that a No. 2 of 3 in. focal length is included in the series; this is specially intended for cinematograph cameras.

**THE POCKET CINEMATOGRAPH.**—A very interesting novelty has been issued as a toy for children by the Kinema Novelty Co., 22, Gresham Road, Brixton, S.W., in the shape of a shilling packet titled as above, and procurable either direct or at the toy shops. The invention of Mr. Theodore Brown, it is a modified form of the Anaglyphs of Du Hauron, that is to say, advantage is taken of inks and filters of suitable absorptions to pick out separately two phases of some moving object, such as a game of see-saw. The two pictures are printed in red and green, and suitable eye-pieces supplied in a holder, which allows of one part being quickly interchanged with another. The result is most satisfactory in the cases of to-and-fro motion, and in one instance a very deceptive effect of rotation is imparted to a wheel. The shillingworth includes fourteen different subjects.

## New Materials, &c.

**Kodak Self-toning Glossy and Matte Collodion Paper.** Made by Kodak, Ltd., Clerkenwell Road, London, E.C.

This new introduction of the Kodak Company is worthy of attention, inasmuch as it provides the means of producing in a plain hypo bath prints of colder tones than are usually obtainable by this procedure, which in such cases is generally employed in conjunction with a salt bath. The directions, however, for the new Kodak papers run as follows:—

For gold, purple-brown tones, immerse the print without previous washing directly into the fixing bath for ten minutes.

For warm brown tones, wash the print in three changes of cold water, and transfer for ten minutes to the fixing bath.

For rich platinum black tones, put the print directly into the salt bath A, for three minutes, and then transfer to the fixing bath for ten minutes.

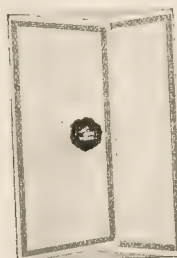
Washing.—Wash the prints for half an hour in a gentle stream of water.

Drying.—Place the prints between clean, dry blotters. If the prints are wanted quickly they may be dried by heat without harm.

The use of a salt bath, we find, gives a very close approximation to the results of platinum-toning of many self-toning papers, and the range of fine tones thus obtainable and the general richness of the effects should ensure a favourable reception for the new product.

**Christmas Cards for Photographs.** Sold by Marion and Co., Ltd., 22 and 25, Soho Square, London, W.

Messrs. Marion's 16-page list of Christmas mounts is the first to reach our table, and we have examined with much interest a number of the varieties of mounts for the festive season which it describes. The effective use which is made of air-brush decoration in a number of these mounts is noteworthy, and the method shows its capability of producing very effective colour effects, although perhaps the plainer and less adorned cards are really more effective for the presentation of photographs. Among these we like very much several folder cards in white and gold, such as numbers P. 31, P. 43 and P. 118. P. 31 takes a print  $4\frac{1}{2}$  x 3, and is sold at 2s. a dozen or 111s. per thousand. P. 43 is a double folder, the outside sheet having an oval opening  $3\frac{1}{2}$  x  $2\frac{1}{2}$ , bearing a very neat embossed design; with the exception of the brief wording "With Best Wishes" this card is innocent of the greeting or motto. It is made for a landscape print of 4 x 3 in., and costs 3s. a dozen or 171s. a thousand. A card of a similar



No. P. 21.



No. P. 141.

style, also of the single folder variety, and in white and gold, is No. P. 118, which is, however, of the slip-in pattern, taking a quarter-plate print, and costs 2s. 4d. a dozen, or 126s. a thousand.

A number of very neat little mounts of the folder variety for square or circle prints of small size are to be found in Messrs. Marion's selection. No. P. 89 is dark green with roughened edges and is for a print  $2\frac{1}{2}$  in. diameter to be mounted on, price 2s. 4d. per dozen, or 126s. per thousand. This is a double folder, the inside sheet being of ivory white. No. P. 128 is a light green or cream embossed pattern with a white slip-in mount, taking a print of  $1\frac{1}{2}$  in. diameter, and is sold at 1s. 4d. a dozen, or 78s. a thousand. A folder card for carte-de-visite prints, to be pasted on, is No. P. 21 as here illustrated. It is of cream board with a fancy border in pale green, a green seal, and with inside embossed line plate mark. For upright prints only it is sold at 2s. 10d. a dozen, or 153s. a thousand. Another tasteful card which we may illustrate is P. 141, of sage green with a white border containing a single white card inside, with a cut-out opening  $5\frac{1}{2}$  x  $3\frac{1}{4}$ ; this is sold at the same price as P. 118 above. The mounts thus particularised represent only a few of the large selection offered by Messrs. Marion, and an application to them for their full list may be recommended.

**CHRISTMAS MOTTO POSTCARDS**, obtainable in all the brands of Criterion paper (P.O.P., gas-light, and bromide), are being issued by the Birmingham Photographic Co., Ltd., Stechford, Birmingham, bearing inscriptions in an appropriately Dickensian vein.

**THE "RAJAR" CAMERA** offered monthly by Messrs. Rajar (190 Limited, Mobberley, Cheshire, for the best print on "Rajar" P.O.P. has been awarded to D. Abrahamse, 49, Chapel Street, Cape Town, S. A., his print having been judged the best during August. The paper on which the print was made was purchased from Messrs. E. Oakley and Co., Adderley Street, Cape Town, S. A.



# CATALOGUES AND TRADE NOTICES.

**A NOTABLE AMERICAN LIST.**—The full catalogue of photographic requisites issued by Messrs. George Murphy, of 57, East Ninth Street, New York, for the season 1908-1909 is a bulky volume of nearly 300 pages, and, as the title-page declares, is intended to list "desirable goods in use by the professional, amateur, mechanical and mercantile photographer." Its pages interest us greatly, for though many items, lenses chiefly, are European, the appliances of American origin, such as enlargers, shutters, tanks, troughs, dishes, stands, tripods, printing frames, etc., are, of course, built in almost every case with such obvious single end to efficiency in use that we rather congratulate the American photographer, handicapped though he is in other ways. Messrs. Murphy may take it from us that their list will interest all English-speaking photographers.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

SATURDAY, SEPTEMBER 26.

Ch Middlesex Photographic Society. Outing to Chingford. C. A. Morgan.  
London and Provincial Photographic Association. Meeting, Franco-British Exhibition.  
Ch Suburban Photographic Society. Excursion to Chaldon and Upper Warlingham. J. Nixon.  
Ch Stereoscopic Society. General Meeting and Final Outing.  
Ch Sea Photographic Society. Outing to Low Street.  
Ch Sea Photo Art Club. Excursion to Black's Dam.

MONDAY, SEPTEMBER 28.

Ch London Photographic Society. "Bromoil." H. E. Gorfin.

TUESDAY, SEPTEMBER 29.

Ch Manchester Amateur Photographic Society. Lantern Lecture on Holland.

WEDNESDAY, SEPTEMBER 30.

Ch Camera Club. "Chemistry of the Production of the Photographic Image." A. Kirkland.  
Ch Camera Club. Supper and Smoking Concert at the Club Rooms.

THURSDAY, OCTOBER 1.

Ch Pool Amateur Photographic Association. "The Life and Times of Shakespeare." W. R. Yardley.  
Ch School of Photo-Engraving and Lithography. "The Selection of Photographs and Drawings for Illustrated Papers." A. Johnson.

**NOTTINGHAM CAMERA CLUB.**—Mr. Arthur Marshall presided over annual meeting of the Nottingham Camera Club, held at the Mechanics' Institution last week. The report, presented by the Secretary, Mr. S. W. B. Vines, stated that there were a hundred twenty-three members, against a hundred and twenty-five last year. The opinion was expressed that the last exhibition was the best ever organised by the club, but the committee stated that as some of the members would undertake the management at an exhibition next spring must be abandoned. Officers were appointed as follows:—President, Mr. Arthur Marshall; vice-presidents, Messrs. A. Black, W. S. Ellis, G. Hugo Hughes, J. Houston, W. H. Kirkland, W. Mosley, J. T. Radford, T. Wright; hon. treasurer, Mr. H. Roberts; reporter, Mr. G. Branch; lanternist, Mr. S. W. B. Vines; auditor, Mr. W. Vines; librarian, Mr. W. Goodchild; editor of journal, Mr. W. H. Radford; editor of portfolio, Mr. W. Murray; secretary, Mr. A. Gollard; curator of survey, Mr. J. T. Radford; committee, Messrs. A. Black, W. Darcy, W. S. Ellis, J. Gale, A. Hallam, Middleton, F. H. Radford, T. Wright, and R. A. Young; delegates to R. P. S., Messrs. A. Marshall and T. Wright; delegates to P. F., Messrs. A. Black, W. H. Kirkland, and T. Wright.

**POLYTECHNIC PHOTOGRAPHIC CLASSES.**—The winter session of the photographic School of the Regent Street Polytechnic will be held on Tuesday, October 13, by an exhibition of Autochromes, to which is free to the public. On that occasion information and advice may be obtained from the Principal, Mr. Howard Carter, and his colleague, Mr. C. H. Hewitt, as to the classes a learner may take with best advantage to himself. Those desiring to be present or to visit the Polytechnic personally are requested to apply for the full prospectus of the courses of instruction, which include every branch of professional and trade photography.

## Commercial & Legal Intelligence.

**A WARWICK BANKRUPTCY.**—The summary of the debtor's statement of affairs presented to creditors of Joseph Harriott, residing at 10, Chapel Street, Warwick, and carrying on business at 15, High Street, Warwick, showed gross liabilities amounting to £311 8s. 6d., of which £220 9s. 7d. was expected to rank for dividend. The assets, after deducting preferential claims, were estimated to produce £99 3s. 2d., leaving a deficiency of £121 6s. 5d. Bad trade and want of capital were the alleged causes of failure. The case, a summary one, was, at the first meeting of creditors, left in the hands of the Official Receiver.

**BRITISH PHOTO PAPER COMPANY, LTD. (London).**—Particulars of £5,000 debentures, created by resolution of November 6, 1907, have been filed pursuant to Section 10 (3) of the Companies Act, 1907, the amount of the present issue being £350. Property charged: The company's undertaking and property, present and future, including uncalled capital.

**EASTMAN KODAK COMPANY OF NEW JERSEY.**—The Eastman Kodak Company of New Jersey has declared an extra dividend of 2½ per cent. upon the common stock of the company, payable November 1, 1908, to stockholders of record at the close of business on September 30.

**CERIO PHOTO-PRINTING CO.**—A general meeting of the members of the Cerio Photo-Printing Company will be held at the offices of Gundry, Straus, and Soper, 7, Great Winchester Street, E.C., on October 27, for the purpose of having an account laid before them by the liquidator (Mr. Percy W. Straus) showing the manner in which the winding-up has been conducted.

**DISSOLUTION OF PARTNERSHIP.**—The partnership between Messrs. Abraham Srogov and Joel Halford, carrying on business as photographic enlargers at Birmingham, under the style of the Royal Art Association, has been dissolved by mutual consent, as from Sept. 7.

**A POSTCARD BANKRUPTCY.**—William Browne Barwell Barwell, of 12, King Edward Mansions, Shaftesbury Avenue, W.C., appeared for his public examination at the London Bankruptcy Court last week, before Mr. Registrar Hope, upon a statement of affairs showing liabilities amounting to £316, and assets nil. In reply to questions put by the Official Receiver, debtor stated that he was interested in a syndicate formed for the purpose of publishing picture postcards of famous pictures at the National Gallery. The petitioning creditor had advanced him money from time to time for the purposes of that business. They had to get the sanction of the authorities to take the photographs, but the matter had proved unfortunate, and they only had a few negatives. He made arrangements to get the negatives published in Germany. He had compromised the action brought by the petitioning creditor. He attributed his present failure to his liability to the petitioning creditor under a judgment obtained against him in respect of moneys advanced for the purposes of the syndicate referred to. The examination was ordered to be closed.

**SCARBOROUGH BANKRUPTCIES.**—At the offices of the Official Receiver, Scarborough, on Monday last, the first meeting of creditors was held in the case of Jordan Lambert Lilley, photographer, of 71, North Marine Road, Scarborough. The summary of debtor's statement of affairs showed gross liabilities amounting to £189 8s. 4d., of which £166 10s. 6d. is expected to rank for dividend. Furniture is valued at £25, and after deducting the amounts payable to preferential creditors, there is a deficiency of £164 8s. 4d. Debtor states his failure to be due to the illness of his wife during the past two years and three bad seasons.

The first meeting of the creditors of Mary Ann Osquith (widow), photographer, of Falconers' Road, Scarborough, was also held. The gross liabilities are set down at £105 3s. 10d., £83 8s. 8d. of which is expected to rank for dividend. The assets are estimated to produce £33 10s., and there is shown by the statement a deficiency of £71 13s. 10d. The causes of failure given are bad trade, owing to severe competition, and loss of £20 advanced in October, 1907, for commencement of a business at Frodingham, which, proving unsuccessful, was given up on January 1 last.

### NEW COMPANIES.

**KOSMOS PHOTOGRAPHICS, LTD.**—Capital £5,000, in 4,500 Preferred Ordinary shares of £1 each and 10,000 Deferred Ordinary shares of

1s. each. Objects: To carry on the business of photographers, photographic printers, chemists, manufacturers of photographic requisites, etc.

**HAMNETTS, LTD.**—Capital £1,000. To acquire the business carried on by T. Paddock, of 24, Lee Bank Road, Birmingham, and A. H. Taylor, at 197, Bristol Street, Birmingham, 3, Lichfield Street, Burton-on-Trent, and 6, Mercer's Row, Northampton, as Hamnett; at 58, New Street, and 10, Soho Hill, Birmingham, as Spencer; and at 82, New Street, Birmingham, as Rankin; and to carry on business of photographers and dealers in photographic materials.

## News and Notes.

**DARK-ROOMS AND THE FRANCHISE.**—Mr. W. H. Clay, revising barrister, commenced the annual revision of the voters' lists for the city of Gloucester at the Guildhall last week. Mr. W. H. Taylor, for the Conservatives, claimed votes for Mr. G. H. Neininger and his (Mr. Taylor's) brother in respect of the occupation of photographic dark-rooms. It appeared that neither Mr. Neininger nor Mr. Taylor were professional photographers. The former is an insurance agent, and lives with his father outside the city, but occupies a dark-room at his father's business premises in the city; whilst Mr. J. C. D. Taylor is a post office clerk, and the dark-room upon which he claimed is an attic at the Conservative agent's offices. Both claimants were "amateur" photographers, who asserted that they got their living partly out of their hobby by taking groups, etc. Mr. W. J. Arnold, for the Liberals, raised the objection that the premises referred to were not occupied by the claimants for the purpose of any trade, business, or profession. Occupation for the pursuit of a mere hobby could not qualify. He also submitted, in the case of Mr. J. C. D. Taylor, that the terms of his appointment as a post office clerk precluded him following any other business, but this Mr. W. H. Taylor contested. The Revising Barrister said, upon the facts, he ruled that the rooms in question were not occupied for the purpose of a trade, business, or profession, and disallowed the claims. He ruled similarly in regard to a claim in respect of dog-kennels in Barton Street, the claimant, Mr. Herbert Reginald Manwaring-White, not being a huntsman.

**LICENCES FOR TRAVELLING PHOTOGRAPHERS.**—Thomas Harvey was summoned recently at the Isle of Wight City Bench for having no pedlar's certificate. Defendant, with two assistants, was at Sandown on the 4th inst., taking photographs of houses, and when spoken to by a constable said he did not require a licence as he had nothing to sell. The constable said there were complaints last year from persons who were abused because they would not buy photographs. Defendant submitted that he was on the same footing as a commercial traveller, but the magistrates held otherwise. Supt. Galaway, D.C.C., said he did not wish to press the charge, only to stop the nuisance of persons like the defendant going on to premises uninvited. Defendant was fined 2s. 6d., and 9s. costs.

**CLASSES IN PHOTOGRAPHY.**—Courses of instruction are given this winter by Mr. E. Senior, at the Woolwich Polytechnic, on Wednesday evenings at 7, and at Battersea Polytechnic on Tuesdays and Thursdays. At the latter institute there are separate classes for elementary and advanced students respectively, as well as a special class in enlarging. Reduced fees are charged to students in the trade.

**THE FASHIONABLE CINEMATOGRAPE.**—The moving picture is becoming a serious rival to the after-dinner vocalist. Every Sunday evening at Prince's Restaurant (declares the "Daily Mail") a cinematograph show, which lasts about half an hour, is given. The diners now watch the realistic reproductions of topical events over their coffee and cigarettes, instead of listening to ballad vocalists, as heretofore.

**POSTTYPE PAPER.**—Mr. Charles Dawson writes us from Holloway Hill, Godalming, in reference to our recent notes on the process for direct positives, to the effect that he is only disposing of the European patents relating to the process. Since the appearance of our article he has been flooded with requests for prices and samples of the paper, but the present intimation, it is hoped, will correct any wrong impression that has been formed, and save those interested further trouble. In a previous issue we had stated Mr. Dawson's relation to the process.

**PROCESS INSTRUCTION AT MANCHESTER.**—The prospectus of the Photography and Printing Trades Department of the Manchester

Municipal School of Technology, directed by Mr. Charles W. Gamble, contains the syllabus of classes for the forthcoming session and as regards the purely printing side of the department is in itself a demonstration of the efficiency of the teaching staff, since its well arranged pages are composed and printed in the department. The photographic classes include two series of lecture demonstration each extending over 40 weeks and dealing respectively with the theory and practice of photography. Other more specialised classes held in the evenings, deal with negative making, the photography of coloured objects, portraiture, silver, carbon, and platinum printing, and retouching. The day and evening classes in photographic mechanical processes include lectures on the general principles of photo-mechanical and three-colour work and instruction classes in line-engraving, half-tone and three-colour block making, and lithography, in addition to subjects such as typography, bookbinding, etc. Those in the North of England able to visit the magnificent premises of the School and consult Mr. Gamble are advised by us to do so.

**THE HOVE CAMERA CLUB** exhibition will be held at the Hove Town Hall October 22-26. Entries close October 15. Mr. Furlley Lewis, F.R.P.S., will judge, and will have at his disposal for awards in the open classes for prints and lantern slides, ten specially designed Kupron-bronze statuettes. This is an entirely new departure, and should be acceptable to exhibitors. The statuette is reproduced on the entry forms, to be obtained from W. Chater Lea, Dyke Road, Avenue, Brighton.

**THE UNITED STEREOSCOPIC SOCIETY.**—Stereoscopic workers wishing to become members of the above society are invited to write to the hon. secretary on or before October 15, so that their applications may be entertained at the next committee meeting. The entrance fee is 1s., and an annual subscription of 2s. for members in the United Kingdom. The secretary is Mr. A. J. Snow, of 74, Lloyd Road, Walthamstow.

**SOUTHAMPTON CAMERA CLUB.**—The annual exhibition will be held at the Philharmonic Hall from October 13 to 17 inclusive. Mr. Arthur Marshall will judge the exhibits, the awards taking the form of silver flower vases, ten of which will be placed at his disposal for the open classes. Entries close October 6, by which date entry forms, duly filled up and accompanied by entrance fees, must be sent to the hon. secretary, Mr. S. G. Kimber, "Oakdene," Highfield, Southampton, from whom the forms are now obtainable. Exhibitors at Southampton who desire to enter their exhibits for the Hove and Portsmouth exhibitions, will be entitled to reduced fees and free conveyance between the three exhibitions.

**"OKRO" COMPETITION.**—The competition recently organised by Messrs. Rae, Ltd., of 147, High Street, Perth, in which prizes were awarded for prints toned with the firm's "Okro" toning solution, has been judged by Mr. Peat Millar, who reports that the uniformly good results (as regards tone) satisfied the efforts of the judge to base his decisions on this technical quality. The prints were therefore judged on their technical and pictorial merits, and the following awards made:—First prize, Robert Burnie, 86, Woodlands Road, Glasgow; second prize, George Anderson, 77, Braeside Street, Glasgow; third prize has gone to Peter Orr, 3, Alexandria Terrace, Govan. Other commendable work is that of George Madison, H. Black, A. J. Thistleton, D. L. Richards, Rev. E. T. Clark, and J. Lowrie.

**MESSRS. E. W. BOWES AND Co.,** printers and enlargers in platinum type, carbon, and bromide, advise us that they have removed to new and larger works, at 122, Becklow Road, Shepherd's Bush, London, W.

**PHOTOGRAPHIC INSTRUCTION IN LEEDS.**—The prospectus just issued of the Central Technical School, Cookridge Street, Leeds, contains particulars of the course of instruction in the theory and practice of photography under the direction of Mr. S. E. Bottomley, F.R.P.S. The lectures and demonstrations are given on Saturday morning from 9.30 to 12, and in each case consist of a lecture followed by practical work by the students. The fee for this course, which is specially intended for teachers, is two guineas, and the subjects include branches of photography such as photo-micrography, stereoscopic and cinematograph work, lantern-slide making, and the selection and use of apparatus. Evening classes of a more elementary kind are also included in the syllabus. Application in regard to these should be made to Mr. Bottomley, or to the principal of the school, Mr. R. E. Barnett, B.Sc.



## Correspondence.

\* We do not undertake responsibility for the opinions expressed by our correspondents.

\* Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

### THE SALON SELECTION COMMITTEE.

To the Editors.

Gentlemen.—It was with a not unnatural feeling of disappointment that I received some days ago the usual polite notice from the Photographic Salon informing me that the Committee had been unable to accept any of my works for exhibition. I was, however, quite prepared to believe that a committee composed of men having the aims and ideals which one always associates with the Linked Ring would not reject work unless they had a sound reason for doing so, and I felt that at least my work had had a fair chance, and had been found wanting, and that the only thing to do was to try again. I have since discovered that most of the other English contributors have been treated to a similar fate, being either rejected altogether, or represented very badly, whilst the Americans are in more than usual strength. This becomes very significant when I remember that five Americans were on the hanging committee, and still more significant is the fact that two of them are represented by thirty-nine and twenty-one works respectively. Another exhibitor closely associated with the hanging committee shows twenty-eight works, and with this addition the full committee of seven members are represented by a hundred and forty-two out of the total of two hundred and three in the catalogue. Of the other members of the Ring, English Links show only nineteen works, and English outside contributors show eighteen as against sixty-five last year. What at first sight looks like a rather sweeping condemnation of English work becomes on further investigation suspiciously like a pre-arranged monopoly. It is hardly conceivable that well-known photographers who have exhibited in the Salon for years would suddenly drop off in the quality of their work to such an extent that none of it was worth showing. It would seem that the selection committee have rejected as much outside work as possible in order to display their own efforts to better advantage, but if this sort of thing is to continue, the general contributor ought to know beforehand. He could then avoid the trouble and expense of submitting work to a committee having no intention of hanging it, and he might as a desirable alternative arrange with his fellow workers to run an exhibition which should fairly represent international pictorial photography, instead of vainly contriving to what is practically a three-man show. Messrs. Steichen, Roburn and De Meyer have already had an exhibition of their own. They are now having another at the expense of the Linked Ring, but the Ring is wise and intends to carry out its aims and ideals which, by the way, are not put forth in the catalogue this year), and will see to it that these gentlemen have run the show for the next time. It is one thing to run a "one-man show"; it is a very different matter to advertise a public one; and the Linked Ring must decide before next year which it intends to do, and give some proof in either case that it will do the thing thoroughly.—I am etc.,  
Park Row, Heaton, Bradford.  
September 16, 1908.

WILLIAM A. STEWART.

### A LAY REVIEW OF THE SALON!

To the Editors.

GENTLEMEN,—From among the quotations from the lay press on the Salon, you have omitted the following, evidently referring to the private view:—

"Americans continued the erratic course they have pursued recently, and after fluctuating violently in the afternoon finished back in the Street."

It is a cutting from the "Financial Times." Why it occurs under the heading "Stocks and Shares" is not apparent.—Yours truly,

"A CONSTANT READER."

### THE PICTORIAL WORK OF TO-DAY AND FIFTEEN YEARS AGO.

To the Editors.

Gentlemen,—May one be permitted to ask why it is that, in the current issue of your journal, the photographer whose negatives form the basis of the Raines and Co. exhibit in the South Room of the R.P.S. Exhibition is damned with the faint praise that his is perfect technical work, but that it serves to remind one "how far pictorial photography has advanced during the past few years?"

For my own part, as I looked at the exhibit, the reminder was of that of the work of Mr. G. R. Ballance. Possibly if Messrs. Raines were to do, as Mr. Ballance is said to have done by way of a practical joke, and that is, to print from the glass side of the negative on a piece of stale platinum paper, "the excellence of their work" would have been hailed with the acclamations of the pictorialist instead of being condescendingly passed on "to the professional photographer."

I am not a professional photographer, but I must confess that Mr. H. G. Ponting's masterly presentment of strong sunlight effects pleased me infinitely more than did many of the exhibits in the West Room, where sunshine generally seemed to be indicated by merely local rubbing down to white paper, leaving the rest of the picture in Stygian murk and gloom. And certainly I prefer them to Mr. Mortimer's "The Wool Washers," which, if it were not for the cast shadows, suggests to my mind nothing more than a November fog.

Both the mounting and the framing of the Raines exhibit seemed to me to be modern enough, so therefore I infer that the progress of modern photography is in the direction of dirty pigment and white paper as the best method of rendering vivid sunshine.

I venture to hope that I am not in a minority when I say that I prefer to lag behind if such be progress. So also, it seems to me, should the opticians and the plate and paper manufacturers. But perhaps the excellence of their products, like that of the work of Messrs. Raines, can be left to the appreciation of the professional photographer. Poor professional!

Trusting that some of your critics or some of your readers will be willing to enlighten me as to wherein the work of to-day shows so much progress, I beg to subscribe myself—Yours faithfully,

ANTI-PROGRESS.

### COPYING BLUE PRINTS.

To the Editors.

Gentlemen,—In No. 2520 of "B.J.," p. 651, "Printer" wants to know how to reproduce a blue print. The following suggestion may be useful to him:—

The original blue print may be toned blackish-brown by first bleaching it in a weak solution of potash or soda, washing thoroughly and then blackening in a solution of tannic or gallic acid and washing again.

This toned print may now be dried and used as a negative to reproduce on ferro-prussiate or fandyke solar (sepia) paper.—Yours,  
Ottawa, Canada,  
September 5, 1908.

C. O. S.

### PUBLIC EXHIBITION OF LUMIERE AUTOCHROMES.

To the Editors.

Gentlemen,—On the occasion of our opening night for the winter session (Tuesday, October 13) there will be an exhibition of Autochromes in the large hall of the Polytechnic, to which admission is free. The Autochromes will be shown on the screen in a gold frame setting, and every endeavour will be made to render the exhibition worthy of the process and its distinguished inventors. The members of the audience will be provided with cards on which to record their votes, and gold, silver, and bronze medals respectively will in this way be awarded. Landscapes, architecture, and genre pictures will alone be eligible. Full particulars and entry forms will be forwarded on application to—Yours faithfully,

ROBERT MITCHELL, Director of Education.

The Polytechnic, 309, Regent Street, W.

### FACTORS IN THE CALCULATION OF EXPOSURE.

To the Editors.

Gentlemen,—I wish to thank you for your excellent notice of my exposure indicator in your issue for September 4. It is extremely

gratifying to me to have had such good notices for my first effort at placing upon the market a piece of photographic apparatus, especially from the "B.J.," which I have always looked upon as the most technical and the most critical of the photographic press. This is a genuine attempt to simplify some of the problems which constantly face the all-round worker. The actinometer, as at present used, does not give the same relative sensitiveness to varying strengths of light as the plates, hence the necessity of making some provision for increased exposure in poor light. Then the proved inefficiency of the lens shutter as compared with the focal-plane shutter, added to the increased efficiency of the modern anastigmat, enabled me to evolve my lens and shutter factors which in practice have proved very valuable. As to how much belongs to the lens I am not prepared to state, but the fact remains that many of the modern large-aperture lenses give a fuller exposure, stop for stop, than the older types. One reason for this I suggested in an article in "The Process Year-Book" on page 110, 1907-8. This illustration was given me by one of our leading opticians, and last winter, when discussing the same question in the show-room of one of the principal London lens-makers, the manager agreed with me that the difference could exist and would be principally in marginal illumination, but he also said that the modern optical glasses had a considerable influence in this direction. Messrs. Beck are advertising their Isostigmat as the fastest lens, stop for stop, on the market. This still further tends to confirm my conclusions with regard to variations in speed. I have spent a large amount of time trying to formulate these differences, but as different types of lenses have varying properties it has always eluded me. Therefore I have preferred to state the fact vaguely and lump it all together with the light and the shutters and leave the rest to the intelligence of the photographer, who must decide for himself whether his lenses are rapid or slow. The question of telephoto exposures has been occupying my attention of late, and I hope to have something to say thereon at a future date. Meanwhile, allow me to remain, yours faithfully,

E. A. BIERMANN.

Arthur Cox Illustrating Company, Birmingham.

## Answers to Correspondents.

- \* All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 2A, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.
- \* Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.
- \* Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & CO., 2A, Wellington Street, Strand, London, W.C.
- \* For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 2A, Wellington Street Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.

### PHOTOGRAPHS REGISTERED:—

- J. Yeoman, Bedale, Yorkshire. Photograph of the Bedale Cricket Club.
- A. Kent, 361, High Street, Rochester, Kent. "Try and Get it."
- J. & W. Cooper, 32, High Street, Wealdstone, Middlesex. Photograph of Mr. and Mrs. Gales.
- W. Marshall, 31, Hart Street, Henley-on-Thames. Photograph of the new Congregational Chapel, Henley-on-Thames.
- J. H. Jones, 8, Snowden Street, Port Dinorwic, North Wales. Photograph of "Moriah" Congregational Chapel, Port Dinorwic.
- S. A. Chandler & Co., The Arcade Studio, Exeter. Photograph of the Exeter City Football Team, Season 1908-9.
- F. Spivey, Landseer Studio, High Bridge, Howden, East Yorks. Photograph of Howden Church. Photograph of Entrance to Saltmarsh Park.
- J. Brooks, Coal Clough Lane, Burnley. Photograph of Sam Moss.
- E. Kelley, 26, Queen Street, Newton Abbot, Devonshire. Photograph of Mrs. Morrison Bell.
- H. Marshall, Waterlooville, Cosham, Hants. Photograph of Monument outside the Bat and Ball Inn, Hamledon, with Jessop, Fry, Sprot, and Tucker on it.

### PAINTINGS REGISTERED:—

- R. Elliott, 135, Rotton Park Road, Birmingham. "Four Water-Colour Paintings: St. Anthony, Sacred Heart, St. Patrick, and St. Joseph."

- IVORY MINIATURES.—1. Please tell me where to obtain ivory suitable for carbon miniatures? 2. What preparation does it require? 3. Would "ozobrome" be as good as ordinary carbon for same? 4.

What colours to use in painting miniatures, and where obtained?—IVORY.

- 1. It is supplied by all artists' colourmen. 2. It is sold ready for painting upon. 3. We have not tried it, but it is possible that the ozobrome solution would stain the ivory in such a way that the picture would be useless for after-colouring. 4. Ordinary water colours, either cake or tube, as sold by all dealers in artists' materials.
- H. AND G.—1. The lights are arranged in front of a semi-spherical or umbrella-shaped reflector which is painted dead white. 2. At least 8 or 12 burners are necessary. 3. The most rapid you can obtain. It is not easy to give too much exposure in this class of portraiture.
- J. A. C.—1 and 2. We are sorry, but we cannot obtain any information as to the firms. 3. We know of none, but the matter is out of our province. We advise you to address a stationery trades journal.

- E. A. R.—No, 7 inch is none too long for a postcard-size plate, but about right. You cannot do better than select the focus and aperture you name. Anything much larger than  $f/5.8$  is not of much use for average work, even with a reflex.

OIL COLOURING.—Will you inform me whether one can obtain transparent thin oil colours specially made for painting enlargements in oils, so that the modelling of the print will shine through the paint? I have hitherto painted all my enlargements in ordinary oils, but I am certain there is an easier method, if I could only obtain the proper paints.—ARGO.

We know of no such special colours being made for colouring enlargements in oils. Transparent colours (water) are supplied by all dealers for tinting photographs. Here in this country, ordinary oil colours are used for enlargements.

THE LORD'S DAY OBSERVANCE ACT.—I have been obliged to county court a man for the balance of an account for photographing his house and grounds. The work was done on Sunday at his own request. Would it be possible for the defendant to set up a statutory defence under the Lord's Day Observance Act? We do not make a practice of opening or working on Sunday.—H. C. L.

According to the Act, payment cannot be recovered for work done on the Sabbath, unless that work was one of necessity, which, of course, photography is not. If your debtor was mean enough to set up the old Act of Charles II. as a defence it would no doubt succeed. But it has been decided that if the debt has subsequently been admitted it can be recovered. From your letter it seems that a part of it has been paid, and that is an admission of the indebtedness, so we think it will be of little use for the debtor to plead the old Act as a defence.

METOL.—I do a lot of bromide developing with metol, and though I am very careful to wash my hands in very hot water I have a very numbed feeling in my hands. Would this be caused by the metol developer? If so, would you mind giving me a remedy?—H. A. S.

It is possible. Persons vary very greatly as regards susceptibility to metol. If you find you are likely to be a sufferer your best course is to avoid its use altogether.

STAINS FOR FRAMES.—Will you please give me instructions for making, and the best method of applying, light, medium, and dark brown and green stains for staining oak picture frame moulding, something that will dry with a matt surface and not obliterate the grain of the wood preferred?—MITRE.

The following stains are taken from "Figures, Facts, and Formulae": Brown stain for oak:—(a) Potass. bichromate, 1 oz.; water, 20 oz. Or (b) potass bichromate, 1 oz.; Vandyke brown, 4 oz.; strong ammonia, 20 oz. Or (c) catechu, 4 oz.; water, 100 oz. Boil, and add sodium carbonate, 1 oz. Green: A. verdigris, 4 oz.; vinegar, 40 oz.; B. indigo, 4 drams; vinegar, 20 oz. Boil each for ten minutes. Mix according to tint. Average proportion: A, 6 oz.; B, 1 oz. It would save you trouble if you were to buy the stains, such as Stephen's wood stains, which are to be had in a great variety of tints or colours at most oil shops. The frames must be made perfectly smooth, with fine glass-paper before the stain is applied.

FLASHLIGHT PHOTOGRAPHS OF BURGLARS.—I propose to obtain a flashlight picture of certain nocturnal thieves, and the better to effect this purpose should like to employ a "truc," an electric "truc" which I have occasionally seen at fairs, etc. The spectator is invited to grasp a handle of metal, and, having done so, finds he is no longer able to relax the grasp and withdraw his fingers, not-



withstanding his will to do so. Could not this be managed by connecting the current to a lock, which would transmit it to false key, pick-lock, etc., or to a balustrade, etc.? What kind of battery should I employ, and how many elements to produce a certain effect desired? Would the cost be high? Would the contact of the electrodes with the two hands be indispensable?—**PHOTOPHIL.** If a metal plate is so arranged that anybody desiring to tamper with the door must stand on it, and if a powerful faradic coil is connected with one terminal to the lock and the other one to the fore-mentioned plate, anybody making connection by means of a key or other instrument to the lock will receive a powerful shock, but only on the following conditions:—Should their feet, which are in contact with the metal plate, be well insulated, it will be impossible for current to pass, and they will not receive a shock. The question as to whether the person receiving the shock is able to leave or not is a difficult one to answer, since some individuals are much more sensitive than others, and, moreover, a shock so powerful as to prevent all movement is likely to be dangerous to the person receiving it. A coil which would be required to work the night through and year after year would require to be of the best possible construction and protected from damp, and arranged that the humming noise which it gives out when working is entirely done away with by enclosing it in a felt-lined box. The cost, complete with batteries and connections, would be approximately, £5. If it is only intended to use the instrument occasionally the cost of the coil itself would possibly be somewhat less.

**LOWED PRINTS.**—Could you tell me the cause of the enclosed prints turning yellow? It is gaslight paper, developed with metol-droquinone developer, and fixed in hypo and chrome alum, and used 30 drops of 10 per cent. metabisulphite of potassium. I develop about fifty prints and fix. The stains do not appear until the prints have been washed one hour. Then the backs and the edges turn yellow, like enclosed prints. If you could advise me how to stop this I should be greatly obliged.—**SPECIALIST.** Stale developer and stale hypo solution are common causes of stains in gaslight prints. In your case we expect that the individual prints are suffering owing to your treating too many at one time. It would be better to wash in several changes of water rather than use running water for an hour.

**LOWED P.O.P.**—We are troubled occasionally with a tingeing yellow in our P.O.P. prints, more discernible in vignettes. The edges of two oval-cut vignettes show a deeper yellow. I blame the prints, through lying between toning and fixing, although we are running water on them during toning and fixing operations. There are any known cause, and what is the remedy? Our rivers are often flooded, and we use it, with a muslin cloth on.—**ABSON.**

You do not give sufficient details to enable us to suggest any special cause, but if you leave the prints long between toning and fixing stains are very probable.

**ERN SLIDE QUERIES.**—Will you tell me, through your valuable paper, where I am wrong? I have been trying to make some lantern slides by the albumen process, but failed at start. I did not have articles of Mr. Foxlee, so I bought some collodion, after which I dissolved 6 grains ammonium iodide in  $\frac{1}{4}$  oz. of alcohol, put this to 1 oz. of collodion, and I should think it was near three months before I used it, when it was quite a dark colour. The slide was well corked and was kept in dark. After I had put a coat of albumen on the slide, made with one egg, one quart of water, and a few drops of ammonia, I poured over plate some of the collodion, which was quite clear, but I had trouble in getting it to travel to the edges; it seemed to get stiff. But the worst trouble was when it dried—a muddy yellow colour, full of lumps and fantastic shapes. Of course, I am only an amateur, I am fond of trying most everything. Do you think the carbon process best, or which, in your opinion, do you think the best—mean the nicest—printing process? I cannot get the whites clear with the carbon. I hope you will answer, if it is not too far away, my questions.—**INQUISITIVE** (Valley Field, Canada).

It is very clear that the collodion you employed was quite unsuitable for this process. Possibly you used enamel collodion, which is quite useless. What should be used is the collodion made for lantern slides. Not having read the articles you refer to it is evident

that you are "all at sea" with regard to the method of working, for we assume from your letter that the collodion was allowed to dry. That should not be. When it has set, the plate is put into water, and the ether and alcohol washed away. Then, after draining a little, the *iodised* albumen is applied and the film allowed to dry. When dry, it is ready for sensitising in the silver bath. The carbon process yields excellent lantern slides, but, on the whole, we prefer albumen, though the working of this latter process involves more trouble than the former.

**SKETCH PHOTOGRAPHS, ETC.**—(1) I saw some time ago, in a photographer's window at Cheltenham, a set of prints resembling black and white sketches, slightly tinted. I should be glad if you can tell me the process, as I am desirous of making some similar. I have an idea that the process was given some time ago in the "Journal," but as I do not file them I cannot trace it. (2) Is it advisable to use alum in the hypo fixing bath for P.O.P. prints, as by so doing it saves, to a certain extent, the labour of a separate hardening bath?—**R. O. JONES.**

(1) We do not recognise any recent article from your description, and we fear we cannot usefully make any suggestion in the absence of a specimen of the process. (2) Certainly, an alum hardening fixing bath may be used, but in the case of P.O.P. a separate alum bath is really the safer plan, since an overworked alum-hypo bath is liable to give rise to sulphur compounds, which may affect the permanence of the prints.

**DUTY ON PHOTOGRAPHIC OUTFIT.**—I am sailing for Australia next month and purpose taking a few dozen photographic plates, camera, and several Ross's and other lenses, all been used (except plates). Will you kindly inform me if I shall have to pay duty on any of the above articles?—**WM. H. TURNER.**

We believe that an outfit (personal equipment) such as you describe will not be dutiable.

**PURCHASE OF OLD NEGATIVES.**—Having a lot of waste negatives can you tell me of any firm that buys them up? Had some one call on me, but have lost his card. Perhaps you could give me some information.—**PYRO.**

A firm of the name of Bowen formerly advertised its readiness to purchase, but we have no recent address of it.

**LOSS OF NEGATIVE.**—Will you kindly inform me what remedy I have against a certain firm of enlargers, to whom I entrusted a negative for an enlargement and who have lost the same? It is now three weeks ago, and I am unable to get anything definite from them. All they say is that they are making search for the negative, and as soon as it is found the order will be executed.—**ANXIOUS.**

The only thing you can do is to sue the firm in the County Court for the value of the negative, and possibly for damages for its retention. If you write the parties to the effect that you will take immediate proceedings it will possibly cause them to make a more diligent search for the negative than they have previously done.

**A. GATES AND SONS.**—We cannot trace an advertiser of this particular line. We advise you to apply to the Aerograph Company, 43, Holborn Viaduct, for a reference to a firm, or you might get into touch with firms by a small announcement in the "Miscellaneous" advertisements.

**PHOTOGRAPHS ON WOOD BLOCKS.**—Could you inform me of a simple formula for photographing upon box-wood for engraving? If this is a trade secret I should be glad if you could tell me of a suitable white paint I could procure or make which would be suitable for coating the surface of a wood block, preparatory to sensitising it with silver or other emulsions. The white required would have to be put upon the surface thinly and evenly, and to withstand the action of water.—**A. J. HOWE.**

Those who make photographs on wood blocks for engravers treat the details of the methods they employ somewhat as trade secrets. One method we know is the carbon process, with a special tissue made with a very poor and soluble gelatine. This tissue contains a large proportion of pigment in proportion to the gelatine, so as to get a thin film that does not split up under the graver. We believe some employ an iron process, similar to that of the sepia paper process. The white ground is obtained by rubbing zinc white, moistened with water, well into the grain of the wood. The Autotype Company will probably make you a suitable tissue for the purpose.

**PYRAMIDOL DEVELOPER.**—In your issue of June 12 last you gave a

developer for plates, and if my memory serves me right it was not in your "Answers" column, of which the following was the copy I made at the time:—Pyramidol, 15 grs.; soda sulphite, 160 grs.; potass carbonate, 160 grs.; water, 7 oz. But I cannot procure pyramidol anywhere, and no one knows it. Did I mis-copy and ought it to have been pyramidon?—G. R.

You are correct. Pyramidol is the name of the developer, which, so far as we know, is not at present marketed in this country. The makers are the Brugg Chemical Works, Brugg, Argovie, Switzerland, from whom, doubtless, you could obtain a small sample of the substance.

**MATERIAL FOR STOPS.**—Kindly inform me where I can obtain a small quantity of thin vulcanite or celluloid suitable for making Waterhouse diaphragms for a large lens?—P. D. PRIOR.

Thin vulcanite may be had from Messrs. F. Hill and Co., 108, Bishopsgate Street Within, E.C.; celluloid from the British Xylonite Company, High Street, Homerton. We are not sure that either firm supplies such small quantities as you will require for a few stops. You will, we expect, have to take the full size sheet. Really your best course is to go to an optician for the work.

**IMPROPER USE OF CUSTOMERS' NEGATIVES.**—Will you kindly let me know if an enlarger has the right to make specimens for himself from negatives given him to make enlargements from, and, if not, what proceedings or steps could be taken to prevent him? as I have been repeatedly annoyed in this direction for some time.—R. HERMAN.

No, certainly he has not. No respectable firm would think of doing such a thing without the customer's permission. To put a stop to this sort of thing you should place the matter in your solicitor's hands.

**BLOOM ON ENLARGEMENT.**—The enlargement was made about twelve months ago; I have washed a lot of the working-up off. Can you inform me what is the cause of the bluish bloom that is seen in all the shadows? They were not there when it was sent away from here.—W.

We should say the cause is sulphur toning, probably arising from insufficient washing, coupled with hurried fixation. The maker of the print should be able to judge if this is so. The formation would not appear for some time.

**COATING WITH CELLULOID.**—Can you suggest how to prevent smudges and air bells when surfacing miniatures with celluloid similar to the enclosed photographs. I clean prints carefully before soaking with spirit, also the celluloid. I have used both methylated and alcohol, but I get very uncertain results. I get, perhaps, a dozen or so right; and then, without any apparent cause, they get smudgy. Has it to do with the pressure of roller not being heavy enough? After placing print in contact with celluloid I blot off superfluous spirit before putting under roller. Is this right? Should be greatly obliged if you can suggest a remedy or point out a fault, as the percentage of waste I get is a great loss of time, especially as I am expecting to get busy in the near future.—B. B.

Since you get a dozen all right at times and then some wrong, it is clear that the trouble is due to something in the manipulation. By close observation you should be able to detect what that is better than anyone else not seeing the work done. The only suggestion we can make is that the spirit is possibly blotted off too closely in some instances. Of course, you know that the celluloid should not be soaked in the spirit.

**JUSTICE.**—It seems to us that the only thing you can do is to sue for the money in the county court, according to the terms of the agreement, whatever they may be. The solicitor who acted for you in the dissolution of the partnership might help you, however. You say that the man is poor, has a large family, and that the business is very bad; that is probably the reason why he is unable to keep up the monthly payments. As he has had to give a bill of sale on his effects, you should consider whether it would be really advantageous to institute legal proceedings. We think your strictures on Freemasons are quite unwarranted. Yours is not a case that the P.P.A. could well deal with.

**W. G.**—We cannot say at the moment, but will make inquiry.

**FADED PRINTS.**—I have a number of albumenised paper silver prints, reproductions of pictures, which are very much faded. Unfortunately, they cannot be replaced. Is there any way of

restoring them satisfactorily? I fancy they have been made with dextrine.—THOS. HUSON.

There is no really satisfactory method. The best plan copy the prints, in which process a good deal of improvement usually be effected.

**RESIDUES.**—(1) Having a quantity of residue thrown down with of sulphur, I should esteem it a favour if you could let me the method of getting it down to the metal. I have a furnace which I could use if necessary, as I wish to ascertain whether I receive my correct value; (2) also if there is any method of throwing down or extracting the silver from the hypo bath than liver of sulphur.—L. W.

(1) The residue must be well dried and then mixed with equal weight of a mixture of equal parts of carbonate of potash and carbonate of soda. It is then put into a Cornish crucible then placed in the furnace, and submitted for a time to a red heat until it is reduced to the metallic state. The operation must not be hurried, as it will take some time. It may, however, be somewhat hastened at the later stage by now and then dropping a small crystal of nitrate of potash in the crucible. (2) No. 1 is the simplest and best method.

**THE AFFILIATION OF PHOTOGRAPHIC SOCIETIES** held their annual gathering at the Royal Photographic Society's Exhibition at the Gallery, on Friday evening last, September 18. There was a full attendance, nearly 400 Affiliation members and their friends present, a representation of forty-nine societies. The meeting, took place in the North Room, was presided over by Mr. P. Rider, the chairman of the Executive Committee. He welcomed members of the Affiliated societies on behalf of the Executive Committee, and in the course of a short address reviewed the work of the Affiliation for the past year, mentioning that the committee added several new lectures to those available for circulation referred to the extended scope of the "Red Book," under the auspices of Dr. A. R. F. Evershed. He also spoke on the new Cornish scheme which has now been well started. The London districts have been mapped out into certain areas, and the scheme has been generally taken up by the various societies. He stated that the matter of reduced railway fares for photographers has been under consideration, but that no definite arrangement has yet been made with the railway companies.

The chairman impressed upon all societies the importance of cultivating a spirit of mutual friendliness, and expressed the hope that members of one society would welcome members of another society at their meetings so far as this was possible.

The 1903 set of competition slides were shown on the screen, and the critical notes by that well-known authority, Mr. W. R. B. of Derby, were read by Mr. W. Davenport.

The vote of thanks to the Royal Photographic Society for granting the use of the Gallery on this occasion was proposed by Mr. J. Bridges, seconded by Mr. E. Human, and heartily carried. Human took advantage of the opportunity to give some details of particulars regarding the "congress" of photographers, to be held at the Franco-British Exhibition on September 26. The meeting was a thoroughly enjoyable one, and shows that the gathering grows popularly each year.

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## The British Journal of Photography

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## SUMMARY.

An exhibition of multi-colour pictures by the brothers Hofmeister their friend H. W. Müller is now open at the house of the British Journal." Mr. F. C. Tilney gives his impressions of pictures, and Herr Ernst Juhl, of Hamburg, contributes some on the remarkable work of these German pictorialists. (P. 752.) Salon des Refusés, consisting of works which were not selected by the Americans at the recent Salon, are being shown by our temporary, "The Amateur Photographer," at 52, Long Acre. (P. 753.) The remainder of the historical review by Mr. H. J. Channon phenomena of reversal, etc., by light appears on page 756. A full specification of the ferric-ink process for the copying of Mr. H. L. Shawcross is given under Patent News on page 758. The "great congress" of photographers at the Franco-British exhibition took place on Saturday last. (P. 758.) C. E. K. Mees continues the article on the principles of photographing coloured objects. (P. 754.) The making of combination group negatives by the use of hydrocyanic acid is the subject of some editorial notes on page 751.

## "COLOUR PHOTOGRAPHY" SUPPLEMENT.

Alfred Watkins gives details of the method found advisable for the making of Autochromes, namely, exact exposure varied by time development. (P. 73.) Some practical notes on carrying out the new Lumière method of development are given on page 79. Among the Autochrome items of the month are the recommendations of one French worker to use ammonium carbonate in place of ammonia when on tour, to use a white backing card when necessary and to re-develop the reversed plate after a convenient period; another, to employ a blue screen when viewing Autochromes artificially light. (P. 75.) The conclusion of the paper by Dr. E. Stenger and Herr F. Channon on the preparation of copies of screen-plate transparencies aims the rules for exposure of screen-plates of geometrical form to several sources of light. (P. 76.) A German worker has pointed out the practicability of using the Autochrome plate for combining three different pictures in a single transparency. Each is seen separately by employing a blue screen. (P. 80.) H. G. Drake-Brockman communicates the results of his experiments of the development of Autochromes by orange light. (P. 80.)

## EX CATHEDRA.

### Free Enlargements Again.

A few days ago at our private address we had the unexpected but highly appreciated honour of a visit from a gentleman who expressed himself as anxious to present us with a finely finished enlargement from any portrait that we would lend to him for the purpose. The presentation was to be quite free of charge, and only one condition was proposed—namely, that we should hang up the result in some position where our friends could see it, and that we should explain to them that the same gentleman would be very pleased to supply them with similar fine works of art at the price of one guinea. Very unfortunately we were not at home at the time; which circumstance we shall never cease to regret if such an opportunity does not occur again. Some of our readers who happen to live in Greater London may, however, be more fortunate, and if they do make the acquaintance of this philanthropist, we trust they will not fail to draw his attention to the fact that we, not desirous of being outdone in deeds of generosity, have given him this advertisement quite free of all charge. We have not ourselves seen the gentleman, but he has been described to us as stylishly dressed and prepossessing in appearance. Curiously enough, his visit to us was preceded by one from a lady making inquiries after some mysterious sample enlargements supposed to have been left for inspection. This may have been a coincidence or it may not, but samples did arrive later with the gentleman of prepossessing appearance.

\* \* \*

### Relief In Lantern Slides.

Autochrome lantern slides, which are much in evidence just now at the exhibition of the R.P.S. at the New Gallery, very frequently show an almost startling effect of relief on the screen, and a similar appearance is also very often observable with colour slides made by the Sanger-Shepherd and other processes. Monochrome slides give the effect only sometimes, and it will generally be most often observed in the slides of some particular worker. At one lecture it may be so striking as to give rise to comments among the audience, while at another lecture given by some one else not a single slide may show it. We have frequently been asked to explain this effect, which the average man wrongly describes as "stereoscopic," and the fact that it is so common with colour slides and so uncommon with monochrome images suggests a very sufficient reason. It is simply because the colour slides are truer in their representation of distance than the monochrome slides, or, in other words, because they give truer perspective. Truth of outline is not sufficient in itself to give true perspective. Colours and colour values also play a most important part, and if they happen to be false the effect of solidity or distance vanishes even though the

linear perspective is true. In a colour slide there is no translation of colour into monochrome, and therefore if the colours themselves are truly represented and correctly graded the perspective should be true. On the other hand, in a monochrome slide, in spite of all the glib talk we hear with regard to colour values, colours are often wrongly translated, and the perspective is upset. Some careful workers avoid this blunder, but others take no precautions, while many are quite unable to distinguish between true and false values, and their slides as a consequence are untrue in their perspective, and fail to give realistic relief. It is quite easy to go wrong in the colour perspective in a colour slide, but the faults are more obvious, and it is much easier to obtain correct results than in monochrome work. Therefore colour slides, as a rule, show more relief than ordinary slides. Few people realise the amount of apparent relief that can be produced as the result of true perspective alone, and quite independently of binocular vision.

### Some Advantages of the Stereoscope.

In a set of stereoscopic slides recently submitted to us for inspection we noted a striking number of instances in which the value of the stereoscopic camera was demonstrated. The vast majority of the photographs are made for the purpose of recording facts, not for pictorial purposes, but the average single lens photograph often fails most lamentably in the truth of its records. Sometimes this is due to bad photography, or to wrong values, but often it is due to the fact that the subject does not fully reveal its details when viewed from one point only. To give a few instances from the slides mentioned. When examined as a single photograph one showed a man sitting on a rock, and only very close inspection revealed the fact that there was something peculiar in his attitude. The stereoscope instantly cleared up the mystery by showing that he was not on that rock at all, but on another a fairly long distance away. In another slide a group is observed sitting at what appears to be the entrance to a shady cave, at the back of which water is falling. In the stereoscope it is instantly apparent that they are sitting at the brink of a chasm at the further side of which there is a considerable waterfall. Considered merely as a view of a certain piece of natural scenery this photograph is a complete failure when viewed monocularly, but in the stereoscope it is a distinct success. Yet again, in a view of a mill an unbroken sheet of water falling from an overflow might equally well represent a sheet of some opaque fabric until we bring the stereoscope into play. Then we not only see the gleam of the falling water, but find the sheet is so

transparent that we can see the details of the mass behind it right through the water. These are only a few examples of the detail-revealing properties of the stereoscope, but they should be sufficient to show that the stereoscopic camera is an instrument of very material value even to the tourist who only collects holiday records.

### Lightning Flashes.

Photographs of lightning often have a very deceptive effect, owing to the fact that they do not readily reveal the direction taken by the flash. The details of a lightning flash are unfamiliar to us, and we cannot study them outside a photograph, and many of the peculiarities observed in the photograph are most certainly simple effects of perspective, it is difficult to correctly interpret them owing to our want of familiarity with the natural objects. Small bright sparks or bulbs in the flash are generally considered to indicate that at these points the flash is travelling either to or from the observer, but whether to or from it is almost impossible to determine. In many cases the flashes look like vertical ones passing from the clouds directly to the earth, whereas they were really discharges from cloud to cloud and nearly horizontal. It seems to us to be a great pity that such lightning records are not made stereoscopically, as the binocular records would quickly reveal many particulars that we can only guess at from single photographs. For distant flashes the ordinary stereoscopic camera would, of course, be of much use, as the separation of the lenses would be too small, but two similar cameras used together with a separation of several feet should give very interesting results.

### Black Background.

An inquiry from a reader who asked how to paint a dead black ground in distemper suggests the use of which a really black ground is in the hands of a man who knows how to use it. When taking a subject in a white dress against a dark ground, if the plate is really well exposed a ground of deep grey colour will print practically black, but any error on the side of over exposure will make an apparently black distemper ground appear a shade or two above absolute black in print. There is not nearly so great a desire for the absolute black ground as there was a year or two ago, yet they are still used considerably, and of course when well handled the proper subjects are very effective. It may therefore be of interest to give two methods of achieving the desired result. One method is to cover an ordinary stretcher with black art serge and use the ground diagonally from the light. The texture of the serge absorbs all light and reflects none, whilst the join which must be made for

## THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC FOR 1909.

Edited by GEORGE E. BROWN, F.I.C.

THE forty-eighth annual issue of THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC will be published on December 1. This year's ALMANAC reached a total of over 1,000 pages, and the entire edition of 25,000 copies was sold out immediately. Of no other photographic book ever issued can two such unique facts be recorded. The edition for 1909 will also consist of 25,000 copies.

The editorial article will deal very completely with the important subject of

### REFLEX CAMERAS,

and the systematic review of the work of the year under the title "Epitome of Progress" will be a strong feature of the volume.

The lines followed in the previous editions of the ALMANAC will be maintained in general, but in a number of particulars the arrangement of the volume for 1909 will be

modified to make it more than ever the book of universal photographic reference.

The ALMANAC for 1909 will appeal to photographers the world over as a daily reference guide in practical work. The standard matter and formulæ will be revised and added to where necessary, and, wherever practicable, new features of an informative nature will be added.

**\*\* NOTICE—IMPORTANT.**—Our publishers ask us to notify intending advertisers that in order to complete the half-yearly edition of the ALMANAC (25,000 copies) for simultaneous publication on December 1, it will be necessary to close the pages in a fortnight's time; therefore, the latest date for receiving orders and copy will be Friday, October 16.



by 8 ground of this material cannot show if machine-cut. A single width of the fabric makes a good ground or full length children or for three-quarter heads of any other. The perfect method of making a black ground is to cover the frame as above and then hinge to it, one on each side and one on the top, supplementary frames covered with black serge, which will, when opened, form a sort of dark box. If the sitter is posed on a line with the front of the wings a dead black background will be secured, whilst the photograph should be full of atmosphere, not giving the sitter a cut-out appearance. Another very necessary piece of advice for securing good effects is to use backed plates for these subjects, there being a danger not only of clothes but the face being halated.

### COMBINATION GROUP-NEGATIVES.

In an article by Mr. H. V. Todd on the replacing of a moved figure in a group ("B.J.," July 3, p. 511), it was explained how to introduce a figure by a very simple method of double printing. The system is very convenient, and cannot be well improved upon when only a few prints have to be made. But when the order amounts to dozens, it is a saving in time in the long run to introduce the figure into the negative. When that is done the prints are, of course, obtained at a single printing, and the trouble of double printing is saved.

We will here explain how one, or more, figures may easily be introduced into a group negative. In the first place, the single-figure negative must have its film stripped off the plate. That is best done by the hydrofluoric method; but in the first instance it is well to harden the film by immersion, for ten minutes or so, in ten per cent. formaline, which treatment will prevent any expansion of the film when it is off the plate. After this hardening process, the edges of the plate are cut round about an eighth of an inch from the margins, and the negative is put into a bonite or xylonite dish containing water to which a few drops per ounce of hydrofluoric acid have been added. In a few minutes it will be seen that the gelatine film is coming loosened round the edges, after which, by gently rocking the dish, it can be floated free from the glass. The water is then poured off and replaced by fresh, two or three times, to get rid of the acid. The film is then removed and dried between fluffless blotting-paper, which will keep it flat and in a state convenient for after-handling. Should the negative be a small one, the gelatine film may be used as it is with careful handling. But if it be large, it will be best, prior to stripping, to strengthen it in the way directed in the article on the repairing of broken negatives ("B.J.," May 22, 1908, p. 391)—that is to say, it is given a thick coating of enamel collodion, placed level to set and allowed to dry.

When the stripped film is dry it is placed in the position it is to occupy in the group, and there secured with a few touches of indiarubber solution round the edges. The negative is then put upon the retouching desk, and the other films—the stripped one and that on the glass—are exactly cut round the outline with a keen-edged penknife, cutting cleanly through both down to the glass. The film negative is then removed, which the indiarubber permits being readily done. All that now remains is to scrape away the film on the glass, where the figure is to be, with a penknife, or, better still, with a retoucher's knife, the cut made in cutting through the two films serving as a guide. The cut-out figure is then put into its place, which will accurately fill, and secured with a few touches of ear white gum solution, applied to the figure portion only. We now have our combined negative complete, and the work has been neatly done, the juncture will not be perceptible. By this method of making the combined

negative the two negatives cannot afterwards, of course, be used as they were originally. This is a drawback to the method of procedure. This may, however, be met by adopting a different system. It is true that this latter involves a little more trouble, but it is often desirable to keep the two, or more, negatives intact for future use. In this case it is necessary to make a fresh negative by means of transparencies and to make the combination with them.

The transparencies may be made by contact printing on dry plates, and the films afterwards stripped by the method just described. Care, however, must be taken that they are all of the same printing value, otherwise a successful result must not be expected. The really best way of making the transparencies is, undoubtedly, by the carbon process, as in that way they will be quite of the same colour, and may easily be made of the same density. The glass upon which the transparencies are made should be thoroughly cleaned and then well rubbed over with French chalk, to facilitate the stripping. It is then coated with enamel collodion and, after that has well set, is put into cold water and the ether and alcohol washed away. The exposed tissue—which had best be that specially made for transparencies—is squeezed upon it and developed in the ordinary way. We may here add that the tissue must be deeply printed, quite as deeply as when the transparencies are required for enlarging from, otherwise it will be impossible to get good and vigorous negatives from them; in fact, there should be no really clear glass anywhere, except perhaps in the extreme high-lights, and even they may be slightly veiled with advantage. At this stage the transparencies should be compared to see that they are all of equal density. Should one be denser than the others, the development of that one must be continued until it becomes equal to the rest. Should one, however, prove to be thinner than the others, it is better to make afresh rather than to attempt to reduce the others to its level. The transparencies, while they are still wet, are next flowed over with a warm solution of gelatine—say one ounce of Nelson's No. 1 to a pint of water. The plates are then allowed to dry. When dry, they are again coated with the enamel collodion, and when this is dry the films are ready for stripping. They are cut round the edges and stripped off. The object of the second coating of collodion is to give strength to the films, that of the gelatine to prevent the second application of the collodion from interfering with the first, which it might do in the extreme high-lights if they were not thus protected.

The combination is made as follows:—A glass plate, an inch or so each way larger than the largest picture, is taken, and on that the largest transparency is firmly secured to the plate by strips of gum paper round the edges. The plate is then placed on the retouching desk, and the film with the first figure to be introduced is put into position and secured with touches of indiarubber solution round the edges. The two films are then cut through, as before described, the upper one removed, that underneath (and free) taken away, and the other adjusted in its place. It is then secured, as in the previous case, with a touch or two of gum, applied to the figure portion only; adhesive is not desirable, or necessary elsewhere. Other figures, if there are more than one, are dealt with in a similar way. If when the combination transparency is complete it is found that, through imperfect manipulation, there are any tiny bare spaces they must be filled in with colour.

Having our combined transparency complete, it only remains to make a negative from it, or several, if the order is a large one. This may, of course, be done in different ways, either by contact printing on a slow dry plate, or in the camera if different sizes are required, or by the carbon process, so that there is a choice of ways, all good, of getting the final negative.

## EXHIBITION OF PHOTOGRAPHIC PICTURES IN COLOURS BY T. AND O. HOFMEISTER AND H. W. MÜLLER.

GUM-BICHROMATE printing is running neck-and-neck with oil printing in the matter of colour, and whilst the latest attempts in the latter method are bidding for fame at the New Gallery, the Little Gallery at 24, Wellington Street, is offering a much more ambitious display in the gum process. Messrs. Hofmeister and Müller have been working for years towards artistic ends in multiple printings with various coloured pigments, and this fact may perhaps account for the great superiority in the gum work as now exhibited for the first time in this country over the more tentative experiments in oil which hang in Regent Street.

It should be explained at the outset that the peculiar varnished surface of the gum print, together with the magnificent proportions of the Hamburg pictures, demand more space and better conditions of lighting than the house in Wellington Street can offer, and this fact should be borne in mind by the visitor who sees them for the first time. But even under these somewhat detractive conditions the nobility of the works asserts itself, and one cannot help being struck by the look of importance which even the smallest and least successful of these works possess.

As practised by the brothers Hofmeister and their companion Müller, the multiple gum colouring has the decorative flatness and intensity which characterise most German work. Indeed, these pictures must be considered first and foremost as decorative schemes: they are naturalistic only to a slight degree, and that is their saving grace. The nature of their subjects demands such treatment rather than the melting tints of opalescent subtleties better suited to the sweet and airy pastorals of English schools of landscape art. These have as themes, the hoary castles, the massively disposed woods and plains, and the vapourless mountains of Germany. There is an uncompromising, full-bodied, clean-cut insistence in the subjects that induces the simple, almost diagrammatic colour that has been given them, and is germane to the country and nationality which produced them.

To any unacquainted with these phases of art, the pictures may prove at the first glance a slight disappointment; but when their mood is accepted, when they have been allowed to "grow upon" the spectator, he will find them fuller of charm and mastery than he thought they were. One soon gets used to their low tone, their restrained and dry colour, and before such an impressive view as "A Summer Afternoon," No. 2, one becomes convinced of the artistic truth of the impression. The shady avenue of trees, the stems of which are all but black, retires towards the distance where a town, bright in the low sun, gleams through the spaces between trunks. Above, the dense foliage fills all the picture, thus causing a concentration of interest upon the church-tower, which is the central spot. Viewed at a fair distance, all these items are in perfect harmony and true relation. Another view which is similarly naturalistic,

but less decorative in design, is "The Return Home," No. 5. Here we have a sky and distance that is as airy and true as a painting need be. It is the best of all in this respect, and almost the only one that, by its warmth and fine gradation, achieves anything considerable in aerial perspective. Most of the colour, and particularly the blue skies and green meadows, are too cold in colour. They appear to have been treated with flat unbroken blues and greens. This, of course, is fatal to fine effect, for a sky is never cold in colour. Indeed, it may be said that where these pictures fail is in their skies, generally speaking. Occasionally clouds are introduced—at least, they were, no doubt, in the original negative—but they have very obviously been picked out with the bright woolly edges dear to the photographer all the world over. They are in most cases only in lighter shades, culminating in white, of the heavy opaque "cerulean" variety of blue.

One or two of the works are practically in monochrome, and these are not the least satisfactory by any means. The first, "Bavarian Landscape," No. 12, which shows with splendid breadth a shepherd and his flock under pine trees, appears as though it were painted in black upon an orange-tinted paper. Another, which is a highly romantic view of the bridge and castle of Harburg (and is not in the catalogue), is printed in rich, warm dark green, with a touch of warmth in the sky at its lowest point and in a window. There are a few anomalies here, which, however, do not worry one who is not disposed to stick at trifles; but the castle is much too brightly lit for a moon so low as to be hidden behind the gable; and if Herr Hofmeister aver that it is the sun and not the moon, they must explain it dark night sky. This would be a fine and solemn nocturne, only there were more mystery in the foreground, and if some assertive white patches on the buildings were lowered in tone. In some cases the titles do not minister to the effect of the print. No. 15, for example, is called "Summer Sunset." It has positively a sky as at dead of night, and buildings and foreground practically in black silhouette; yet above the middle distance is a celestial orb of an orange colour. Now, let the least observant young and commonplace cyclist think what light there is in the sky at, say, an hour and a half before "lighting-up time," and he will agree that this black and deep blue picture, with a touch of orange, would have been more convincing if it bore the title "Moonrise." Similarly in "Summer Evening," No. 2, which is full of solemnity and breadth, the sky is at the same time so dark that it can only rightly be called "Summer Night." The brightest, and in many ways the best, is "Mill in the Taubergrund." It has no sky, but a background of wooded hills and a subject of near houses and a shaded pond.

There are twenty-eight pictures in all, and if the visitor will accept their decorative breadth and the conventionality of treatment, he will find them full of fine suggestion and romance.

F. C. TILNEY.

### A HAMBURG VIEW OF THE WORK OF MÜLLER AND THE HOFMEISTERS.

[The following notes are written by the friend and adviser of the Hofmeister Brothers and their colleague, Herr Ernst Juhl of Hamburg, who for years past has followed the steps which the present exhibitors have taken since the commencement of their work.]

The Hofmeister Brothers discovered their photographic métier, through the exhibitions held at Hamburg, in the year 1896, at which time they produced their first figure studies. From this class of subject they turned to landscape and to portraiture, and in all three fields proved themselves complete masters of their

art. They are, without exception, the most notable "pictorial" photographers which Germany has known since 1896, and even at the present time are surpassed by none.

From the beginning their work has been done in the gum-bichromate process, at first by one printing from the negative



since 1897 by the multiple-gum method. In the year 1898 first two-colour gum-bichromate prints were produced, and this time each year has been marked by their production of two-colour and multi-colour gum-bichromate subjects.

Throughout the period of their work the Hofmeisters have teachers of others, their most notable students being Mr. F. Müller and Dr. Kirstein. The former has been closely associated since 1893 with the two brothers, and many of the prints which have afterwards been produced as multi-colour have been photographed on holidays which all three have together. Not only that, but much of the subsequent work has been done together in the well-appointed photographic rooms of Herr Müller's villa. It is not surprising, therefore, that the prints are so discernible in both the subjects and the method of treatment are discernible in the respective pictures.

The prints now being exhibited in London are all multi-colour prints by the gum-bichromate process, made by Theodore and Hermann Hofmeister and H. W. Müller more or less in collaboration. They are, therefore, appropriately exhibited together. The pictures represent a period of work extending from 1903 to 1908. The oldest are "Hour of Sunset, Rothenburg," by Hofmeisters, and "The Path to the Village," the "Mecklenburg Landscape," and "Summer Evening," by Müller. From this limited selection of many pictures produced by the Hofmeisters and Müller since 1897 it is easy to appreciate the great progress which they have made in the mastery of colour harmony. As colour-records of nature are, of course, the outcome of general observation, not a re-statement of colour-notes made from Nature. One thing in a given colour is greatly modified by the after-print, and it is not possible to remedy completely an error made in the initial stages of the print.

The Hofmeisters' "Hour of Sunset, Rothenburg," is a striking example of the authors' talent for conveying their own interpretation of the "feeling" or "stimmung" of the scene to the viewer. The monastery perched on the height and lit by the setting sun contrasted with the twilight in the valley below, hardly have been rendered with such effect in monochrome, and the separation of the details in the dark foreground would have been impossible. The picture takes one back, as in a dream, to bygone times.

The pictures "The Load of Grass" and "Summer Afternoon" (1908) are conceived in quite an opposite spirit. In the first all the colours are soft and light, and in the second is an excellent rendering of plenteous sunshine. In neither case would a black and white version of the photographic negative have availed much.

Of Herr Müller's pictures, perhaps the "Village in the Harz Mountains" is the most original and the best in colouring. Two versions of it have been made, namely, the one exhibited showing the scene in bright daylight, and a second, from the same negative, depicting the aspect of the village by moonlight.

"A Relic of Olden Days" is specially noteworthy as an essay in colours, the coloured shadows on the wall being very successfully rendered. Another notable experiment is the picture "In the Harz Mountains," the effect of which, with its wealth of colour and soft tones, is very harmonious when seen in ordinary indoor lighting. The bright sunshine is excellently rendered—it is but seldom that a photograph conveys sunshine with so complete an effect—and the foreground of white window flowers harmonises with the bright tone of the whole picture. In the "Mecklenburg Landscape" the aerial perspective of the background, suggesting the effect of distance, is particularly worthy of notice. The picture, which dates from 1903, is recognisable as belonging to the Müller-Hofmeister technique by the clouds: in the later pictures, e.g., "In the Harz Mountains," it can be seen how the authors' progress in taste and handicraft has led to a more perfect representation. In "The Path to the Village" (1903) the sky is of clear blue colour, which, at any rate, is an improvement on the white sky of monochrome photographs of a few years back. There is perhaps less originality here than in other examples. The great expanse of foreground follows a fashion at one time prevalent both in England and Germany.

A particularly good example of selection is the "Water Mills in the Tauber Valley" (1906), which also is excellent in its colour rendering. The brownish roofs, the gable of pale rose colour, and the note of contrast between the green and the light bluish background make up, with the clouds, a harmonious whole.

Unfortunately, I cannot deal with the Hofmeisters' work at the same length, since the pictures at the time of writing are away from Hamburg, but in point of technique their gum-bichromate prints have much in common with those of Herr Müller.

When the Hofmeisters and Müller, in 1897, first exhibited their multi-colour pictures, it was not unusual to find the critics rushing in with hasty condemnations to discourage methods involving such labour and application. The critics easily forget that in new branches of work everything is a matter of development, and that to obtain the highest capacity a certain time must elapse, which in photography as an art is none too long. We may hope that our Hamburg friends will still persist in their progressive studies, and that they may provide further masterly work for our enjoyment.

ERNST JUHL.

## THE PHOTOGRAPHIC SALON DES REFUSÉS.

At the point of view of the English Links we must admit that no doubts as to the wisdom of holding an exhibition of pictures rejected by the American Committee of the Salon. It was, in fact, Providence, inasmuch as the risk involved might or might not resolve in favour of the rejected ones. Their last would have been worse than their first if it happened that, in the eyes of the world, the decision of the American few had been justified. But, to our minds at any rate, the protestors would gain more than they may lose by the exhibition. For, in connection with them also in the matter of the gallery, which, being a room in a business house, is incapable of holding all the able works, and therefore hangs a picking of them, and, to trust and believe, the best of them. The advantage of a good and good show over a large and mediocre one is in this

case on the side of the outraged Links also. There are 84 pictures in the room and a score or so upon the staircase.

No one will expect to find the American style rampant here, with its calculated avoidance of the ordinary in pictorial matters; but it may be expected that in some other way the visitor should feel the indispensable sensation of arrested attention, otherwise the affair would fall absolutely flat. Exhibition hanging is, after all, only window-dressing on a grander scale. We should think the visitor would feel sufficiently aroused by Mr. John H. Anderson's fine old print called "A Windmill." It is, without question, one of the very best oil prints we have ever seen, and has an unusually fine quality due to its being printed on thin Japanese India paper. It has every pictorial quality to recommend it, and of itself is sufficient to

demonstrate the fact that merit counted for nothing in the Salon selection. Another excellent work is Wm. A. Stewart's "Victory of Samothrace," a rather pedantic title for a lady seated near a small cast of the famous "Winged Victory." It is a beautiful print in every way. R. Dührkoop's "Portrait"—a charming head only, at full face—stands out, too, in its strong and quiet beauty. Alex. Keighley shows a large picture of a house in a village street, full of light and atmosphere, which he calls "A Word in Passing." Then there is a new name, Otto Ehrhardt, which promises fine things, and shows three portraits, fresh in idea, the strongest being an "Open-air Portrait" of an interesting boy at half-length. This is of what framers call a horizontal shape, and includes a simple piece of landscape; the open air is convincingly rendered, and the newness of the design is plucky. F. J. Mortimer's highly effective "L. and S.W.R." is here—the engine-driver subject—and if he sent it to the Salon he had no right to adopt such De Meyer methods, as it was exhibited here previously. His "Lion's Whelps" shows effectively an ironclad and its boats afloat. Charles Job and E. T. Holding both appear to great advantage, the former's "Sussex Lane" and "Gleam of Sunshine" being equal to anything he has yet done, which is say-

ing much. We must mention also S. G. Kimber's "A C. Portal," a highly effective light and shade subject; A. H. Blal "St. Mary-le-Strand" and "The King's Gate," both of wh have fine quality; E. O. Hoppe's large portrait of "W. Stead," which is broad and fine, but a little sad in its tone, and F. H. Evans's vigorous and highly pictorial "Maison Jean d'Arc." The same worker's "Sculptured Aisle of Chartres" that perfect technique that he always displays, and in this e the subject was one of almost insuperable difficulty, but he mastered it with his usual ease. We mention last a strike portrait by G. E. H. Rawlins of "Monsieur Demachy—Portra Essay in a New Limited-tone Process." It is difficult to exactly why the tone *should* be limited, but we suppose it n suit certain purposes. This portrait is admittedly high effective in its poster-like simplicity, which reduces the wh thing to little more than a solid black and white arrangem resembling that obtained by the stencil.

Altogether we must regard the little exhibition as havi fulfilled the purpose for which it was formed—that is to say, protesting against the selection of the Salon, and of taking t ultimate course known to parliamentarians as "going to t country."

## THE PHOTOGRAPHY OF COLOURED OBJECTS IN PRINCIPLE AND PRACTICE.

[The following article, which will be completed in a succeeding issue, is composed of several chapters from a book by Dr. C. E. K. Mees, to be issued under the title of "The Photography of Colour." Dr. Mees' treatise so well explains matters in the practice of orthochromatic photography that frequently present difficulties, that by permission of his firm we quote from advance sheets of the book. The full text of the latter we would recommend to the perusal of our readers, for the sake of the chapters on portraiture, landscape, reproduction work, and the tri-colour process, all in relation to the photography of coloured objects. Messrs. Wratten and Wainwright will shortly publish the volume at a nominal figure.—Eds. "B.J."]

### The Sensitiveness to Colour of the Eye and of Photographic Plates.

We have seen that the eye distinguishes light of different wave lengths by the production of an appearance of colour; that is to say, a ray of light containing waves of a length of 4,600 of our units would be called violet, and would be said to be of a violet colour, while if the waves were of the length of 6,500 they would be said to be deep red in colour. But the sensitiveness of the eye is not the same for waves of different lengths. The eye cannot perceive at all waves below 4,000 units, *i.e.*, what is

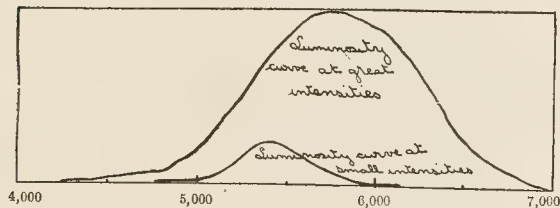


Fig. 6.

known as ultra-violet light; neither can it perceive rays which are above 7,000 units, so that to these we must regard the eye as insensitive. The eye is very little sensitive to the extreme violet rays between 4,000 and 4,500. The blue affects it more, and appears, as we say, bright. Between 5,000 and 6,000 the green appears as the brightest part of the spectrum; above 6,000 we have the bright reds, but the intensity rapidly falls off as the waves get longer, until beyond 7,000 we see practically nothing. We may then draw a curve showing the sensitiveness

of the eye to the spectrum (Fig. 6). It will be noted that the curve has a maximum at about wave length 5,800, but this only holds for intense light. As the intensity of the light diminishes, not merely does the eye see less, but the relative sensitiveness of the colours changes somewhat, shifting towards the blue. This is what is known as "Purkinje's Phenomenon." The explanation offered for it by Professor Schaum is sufficiently interesting and little-known to be worth repetition. It is known that the retina consists of rods and cones, of which the cones are considered to be colour-sensitive, and the rods colour-blind. In that part of the retina exactly opposite the centre of the pupil there is a small depression which contains no rods, but only cones, and here it is found that the Purkinje phenomenon is not existent, that the intensity maximum remains constant. From that we may conclude that the colour-sensitive cones alone display no Purkinje phenomenon, and that the phenomenon is due to the association of these cones with the colour-blind rods. It is found that the sensitiveness curve for this region containing only cones is identical with the curve of sensitiveness for great intensities of light, so that this is the curve of the cones. On the other hand, since the rods are much more sensitive to feeble intensities of light than the cones, as is shown by the fact that the sense of light remains after the colour can no longer be distinguished, the sensitiveness curve of the rods will correspond to the curve for minimum intensity; so that for minimum intensity the sensitiveness curve is due to the rods alone, and as the intensity grows the curve is more and more influenced by the cones, until with maximum intensity the curve of sensitiveness is almost entirely determined by the cones.

Just as the eye is unequally sensitive to light of different colours, so a photographic plate is unequally sensitive to light



erent colours. (Fig. 7.) But if we take an ordinary photographic plate and measure its sensitiveness, we shall find that it differs very markedly from the eye. The eye can see waves of shorter length than 4,000 units; a photographic plate can

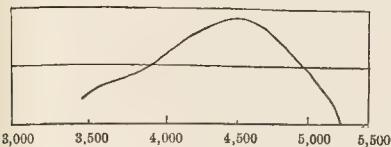


Fig. 7.—Ordinary Plate.

ry much shorter waves, and can detect light which is quite invisible to the eye, this light being usually termed ultra-violet because it is beyond the violet. Also, the maximum of sensitiveness of a plate is in the violet, and all the red-orange and nearly all the green light is invisible to it. The eye may be said to perceive objects mainly by the green and orange light which they reflect. The ordinary plate perceives objects by the blue and violet light which they reflect, and this is a great weakness in the photographic plate when regarded as an instrument for perceiving and recording coloured objects, because the plate which a photographic plate makes of coloured objects is entirely from that which the eye makes.

It was found by Vogel that by treating plates with dyes they can be given, besides their usual sensitiveness, a secondary sensitiveness in approximately the region of the light which the dyes absorb. Thus, if a plate is soaked in a solution of erythrosine, which absorbs the yellowish-green, it will be sensitive to the yellow-green, besides being sensitive to the blue and violet. Plates which have been treated in this way are those which are known as "orthochromatic," the word implying that they can render objects in their true colour values. The ordinary orthochromatic plate, which is made by putting some erythrosine into the emulsion, has a sensitiveness curve of the following type (Fig. 8), and it will be seen at once on

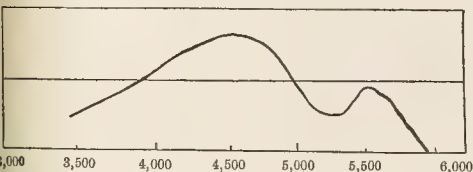


Fig. 8.—Erythrosine (Allochrome) Plate.

comparing this with the sensitiveness curve of the eye (Fig. 9) the plate is certainly somewhat better in consequence of its treatment with erythrosine, it cannot be described as at all comparable in sensitiveness with the eye. It has an enormous sensitiveness in the blue and violet, it has the sensitiveness to the ultra-violet, which the eye has not at all, it has very little sensitiveness indeed to the blue-green, a maximum of sensitiveness in the yellow-green, and an enormous sensitiveness to the red. It may be taken that if we take the blue to include the whole spectrum up to 5,000, the red to be the spectrum from 5,000 to 6,000, and the green from 5,000 upwards, that the sensitiveness of the ordinary orthochromatic plate is distributed in the ratio of 40 parts in the blue, 1 part in the green, and none in the red. If we consider that the eye sees the three parts of the spectrum as of equal intensity, the orthochromatic plate, beside the fact that it is not sensitive to the red, has only one-fortieth of the sensitiveness in the blue that it would require to be equal in sensitiveness to the

eye, however, instead of sensitising a plate in the way we have described we bathe the finished plate in a solution of certain new dyes called isocyanines, we can prepare a plate which

is very much more sensitive both to the red and to the green. Two years ago Messrs. Wratten and Wainwright, Ltd. succeeded in preparing a plate in this manner, the plate being sensitive to both red and green, and this plate they called the "Wratten Panchromatic plate." The plate is sensitive to the whole visible spectrum, although it has a considerable excess of sensitiveness in the blue; this excess is very much less than in the case of the ordinary orthochromatic plates, and there are no absences of sensitiveness throughout the whole spectrum. The distribution of sensitiveness in this plate is shown by the following curve (Fig. 9), and it may be said that  $\frac{2}{3}$  of its sensitiveness is in

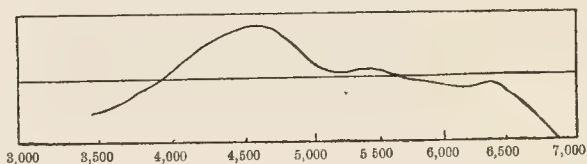


Fig. 9.—Panchromatic Plate.

the blue, 1-16th in the green, and 1-16th in the red; so that the sensitiveness to blue is seven times too great compared with the rest of the spectrum, while the sensitiveness to green and red together is  $\frac{1}{8}$  of that required to have the same sensitiveness as the eye.

In order to attain the same relative sensitiveness as the eye, it is necessary with an ordinary orthochromatic plate, or with the Panchromatic plate, to use absorbing colour filters which shall diminish the excess of blue light, and it is the consideration of these colour filters and of the effect which they will have on the total sensitiveness of the plate, that is, on the exposure required, which we must now consider.

### The Multiplying Factor of any Sharp-cut Filter.

Suppose that we imagine that we have a filter which has perfectly sharp absorption—that is to say, which cuts a clean section out of the spectrum, passing only light between two definite wave lengths and without any absorption of that light; then, if we wish to find the multiplying factor of this filter, we must consider it in relation to the sensitiveness curve of the plate.

It will be convenient, first, to consider a filter which does not transmit light below 5,000 A.U. (Fig. 10), i.e., which absorbs the whole of the blue-violet and ultra-violet, but does not absorb any green or any red. This filter will be a bright yellow in colour, yellow being, as we have seen, made up of green light and red light—that is to say, yellow being simply an absorption of blue. Consider the effect of this on an orthochromatic plate which has 39-40ths of its sensitiveness in the blue, and 1-40th in the green. The yellow screen will remove all the blue light, i.e., 39-40ths of the active light, and it will increase the required exposure 40 times, so that it is what we term a 40-times screen.

Now consider the same screen to be used with the Wratten Panchromatic plate. With this plate  $\frac{2}{3}$  of the whole sensitiveness is in the blue,  $\frac{1}{3}$  in the red and green. The screen will then remove  $\frac{2}{3}$  of the active light, leaving only  $\frac{1}{3}$  to act; it will increase the exposure 3 times. This example shows at once the intimate relation between the plate and the multiplying factor of a screen.

Take now a screen cutting the spectrum sharply at 5,500 (Fig. 11). This screen will be bright orange in colour. It transmits all the red, orange, and yellow-green light. It absorbs the blue-violet and blue-green light, i.e., adopting our convention as to the division of the spectrum, it transmits the red and half the green, and absorbs the blue and half the green. The effect of this on the ordinary orthochromatic plate is to remove the blue sensitiveness, 39-40ths

of the whole sensitiveness of the plate, but inasmuch as this plate is not sensitive to the blue-green, and the yellow-green region of sensitiveness which represents the other 1-40th of the sensitiveness of the plate is transmitted by the screen undiminished, the screen will only increase the exposure 40 times, being the same increase as is shown by the former screen.

On the Panchromatic plate, however, the matter is different;  $\frac{7}{8}$  of the sensitiveness of the plate is in the blue and is removed by the screen, 1-16th is in the green and half of this is removed by the screen, so that the sensitiveness left is 1-16th due to the

sensitiveness of this plate in the green is 1-40th of its total sensitiveness, so that we must use a screen which will give us 1-2 of its total sensitiveness, 1-40th being in the green, and 1-40th the blue. That is, it must cut off 38 of the 39 parts of blue sensitiveness which the plate has, and the same will increase exposure 20 times.

With the Wratten Panchromatic plate we have 1-16th the sensitiveness in the red and 1-16th in the green, consequently we must have 1-16th in the blue; that is, the total sensitiveness will be 3-16ths, and the increase of exposure required by

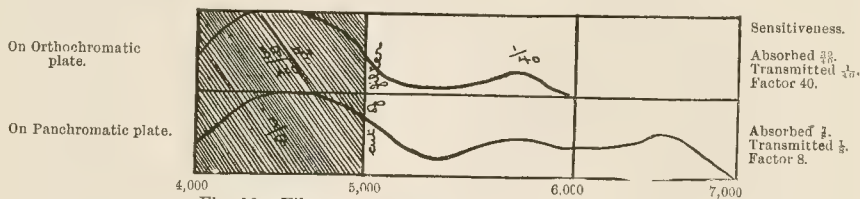


Fig. 10.—Filter not transmitting light below 5,000.

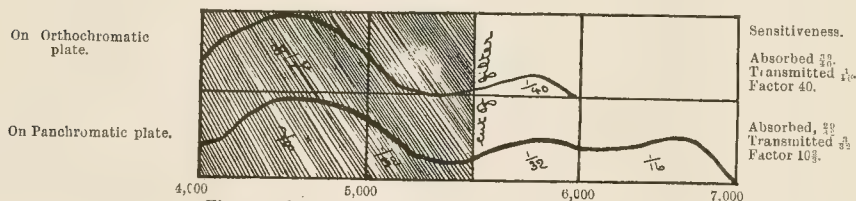


Fig. 11.—Filter, not transmitting light below 5,500.

undiminished red-sensitiveness, and 1-32ndth being half of the green sensitiveness; the total residual sensitiveness, therefore, being 3-32ndths of the original sensitiveness, this screen will, on the "Wratten" Panchromatic plate, increase the necessary exposure 102-3rds times.

Again, consider a screen cutting the spectrum at 6,000, that is, transmitting all the red but absorbing all the blue and all the green. The ordinary orthochromatic plate has no appreciable sensitiveness in the red, and therefore could not be used in practice with such a screen. The "Wratten" Panchromatic has only 1-16th of its total sensitiveness in the red, and consequently this red screen will on that plate be a 16-times screen. Let us now examine into the multiplying factor of the screen (Fig. 12) which will give correct reproduction of red, green, and blue, as seen by the eye. We have assumed in all these figures that in order to get correct reproduction the sensitiveness for red, green, and blue should be equal; that is, we have chosen our units with that condition in mind. On the orthochromatic plate we have no red-sensitiveness, but the nearest approximation to correct rendering that we are able to obtain will be given if the green and blue are of equal intensities; i.e., we require a sensitiveness in the blue equal to the sensitiveness in the green. The

screen will be 5 1-3rd times. This screen will reduce the  $\frac{7}{8}$  sensitiveness of the blue to 1-16th, i.e., it will remove 13-14ths the blue sensitiveness. Two points must be noted here:—

First, that the Panchromatic plate will require very much

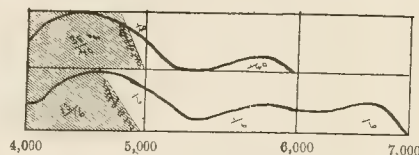


Fig. 12.

less absorption to fully correct it than will the orthochromatic plate, and consequently that not only is less exposure required but that a lighter screen is required; that is to say, in the case we had to remove all but 1-39th of the blue, but in the other 1-14th of the blue was left, and consequently a screen which would give correct reproduction on an ordinary orthochromatic plate will over-correct the Panchromatic plate.

C. E. KENNETH MEES, D.Sc., F.C.S.  
(To be continued.)

## RAYONS CONTINUEURS AND NEGATIVE RAYS.

### II.

In November, 1899, in the course of his excellent Trail Taylor Memorial Lecture, Major-General J. Waterhouse gave a most interesting account of the then almost forgotten subject of *rayons continueurs*, including particulars of experiments of his own, all strongly confirming the observations of Becquerel.

More recently, the subject has been taken in hand by M. P. Villard, whose researches (extended also to modern photographic processes) have fully confirmed the results of the older investigators, and also established some new facts of much significance. The con-

tinuing action of the less refrangible rays is, he finds, entirely dependent upon the presence of a soluble silver salt in the film, and appears to be quite of a similar nature to physical development by means, say, of gallic acid, etc., except that no action can be produced by means of *rayons continueurs* after fixation, as can be done by physical development. An image which has been strengthened by the application of *rayons continueurs* may be further developed by a physical developer, and such an image will gain a considerable advance upon a non-continued image, but finally



the latter will overtake it and the two will be equal in the end if development be prolonged. On the other hand, developers not containing free silver develop the non-continued image at least as quickly as the continued one, and may finish by producing a stronger image in the former case on account of the negative action which the rays may have had on the image exposed to them. These observations resulted from experiments made with modern chloride and bromide papers and plates; they do not seem entirely in agreement, in one respect, with the phenomena observed in the case of Daguerreotype plates, but it appears from some remarks of Waterhouse, in the nature previously referred to, that metallic silver in intimate contact with its haloid salts, as occurs in the case of Daguerreotype plates, has an effect very similar to an excess of silver nitrate in a solution, and that may perhaps account for the action of the *rayons continuels* on Daguerreotype plates.

Ordinary gelatino-bromide and gelatino-chloride plates, then, as they contain no soluble silver salt, are consequently not susceptible to continuing action, but the author adds in a footnote<sup>4</sup> that, when the grain is very fine, continuing action may be produced by treating them with nitrate of silver or even by simply plunging them in water containing a trace of ammonia. I presume that a printed result is referred to here, but, not having had the opportunity of doing the original articles, I am not clear on the point.

Willard's results in regard to the negative action of red rays are very striking. It affects all plates and papers whose sensitiveness depends upon silver salts, whether a soluble salt be present or not, and destroys the images upon them, whether visible or invisible. In the case of silver chloride, all rays from the D line into the extreme red have this destructive action, but in regard to silver bromide, only the extreme red rays beyond the A line have such effect. The action is so strong that by exposure to negative rays a developable image may be entirely removed from a gelatino-bromide or gelatino-chloride plate (alkaline development being in question) and the film restored almost entirely to its original state of sensitiveness; it is noted: "the sensitiveness is so exactly restored that a very precise comparison is necessary in order to find a difference." To gain this result, when a bromide plate is in question, the extreme red rays of a spectroscope must be employed; but the image may be completely removed from a chloride plate by exposure under ordinary yellow glass. This is because such glass passes very largely the infra-red rays which have the negative action and, in the absence of soluble silver salt, there is no continuing influence, while other rays passing the yellow glass are not among those to which silver chloride is sensitive. It may be noted that the work of all investigators contradicts the opinion of Draper that green and blue rays have negative action.

Waterhouse mentioned that some of the phenomena he described had very easily been observed with the ordinary P.O.P., using coloured glasses. This led me to undertake some experiments two years ago, and certainly I found the work very interesting. The method usually employed was to form graduated scales, by imprinting bands of various degrees of intensity on white P.O.P. and to the effects of exposing pieces of such scales to light under various coloured glasses of the ordinary commercial kinds, which I have done not very much in quality. The very first experiment ended conclusively the reality of the continuing action; three tints, produced by exposures near an incandescent gaslight of 8, 3, and 1 minutes respectively, showed a faint tint in the first case and a just perceptible coloration in the second, while the effect of the smallest exposure was practically invisible against the unexposed ground. On exposing a piece of this imprinted paper to daylight under yellow glass, all the tints steadily darkened, and I noted at the conclusion of the action: "the three steps have quite considerable density, in increasing contrast to the reserved piece, and would represent strong blue after toning and fixing" (i.e., if forming part of a picture). Exposure under green glass had a similar result, but not quite so marked as the other. Altogether, a considerable number of experiments were carried out, and the following are some of the conclusions reached at:—

1. Stable green and yellow glasses give strong continuing action. This is not equivalent to the effect of proportionately longer exposures. On a print from a negative, for instance, the continuing action will greatly increase the contrast among the

weaker half-tones, while having comparatively much less effect on the dark parts of the print.

Ruby glass has a similar continuing effect, but it is extremely slow, and the results finally arrived at seem in no way superior to those given by the green and yellow glasses.

The continuing action is a special property of the less refrangible rays. Auxiliary exposure to white light certainly gives a small amount of increased contrast to the weak parts of an image, but such as is quite insignificant in amount as compared with that given by *rayons continuels*.

It has been stated that white light of very low intensity would have the same action as the *rayons continuels*. Auxiliary exposures were compared which were made with intensities which gave an equal faint discoloration to white P.O.P. after ten hours' and one minute's exposures respectively, and the small increases in density found in photographic images subjected to these exposures were practically identical.

Pre-exposure to yellow or green rays appeared to have no greater sensitising effect than when made to white light. There was, however, a little uncertainty as to this in the case of green glass.

The ruby and the yellow glasses both have strong negative action under some circumstances. In regard to P.O.P. simply darkened by light, without any further treatment, it appears to be only ruby glass which has such action, and that only upon very darkly printed tints. This action is very slow, and my experiments were not very satisfactory. After prolonged exposures under ruby, however, distinct falling off in density was evident, although not very great in degree. But on further prolonging the exposures, density again increased and appeared finally to regain its original depth. It must be remembered that ruby glass passes a certain amount of blue light, so that we have opposing influences in action. While this negative action was in progress in the darker parts of the print, the ruby glass was effecting continuing action on the paler shades.

The presence of soluble silver salts appears to be antagonistic to negative action (probably because favourable to continuing action). When, after imprinting the image, the print was well soaked to remove the soluble salts, and in other cases also treated with sodium chloride, the negative action on subsequent exposure under ruby or yellow glass was far more distinctly evident. Those prints treated with sodium chloride were not very differently affected from the simply washed ones. As an example, showing the action of negative rays on prints after removal of soluble silver salts, I will give the details of one experiment. Of two strips, having a scale imprinted upon them containing a variety of gradations, one was simply washed and the other was treated with sodium chloride, and when dry they were exposed together under ruby glass. After two hours a great change had occurred, but a very prolonged continuation of the exposure produced no further alteration. The results obtained were a very conspicuous weakening in the shades of large and medium density; in a band of small density, the effect was obscure and, in a very faint band, there was evidence of slight continuing action. The effects on both strips had been very similar.

My experiments in this direction were not very exhaustive. I found, however, that exposure under yellow glass, after washing, also had a strong reducing effect on the darker portions of images, but when a piece of green glass was superposed on the yellow, no action at all occurred. No doubt that was because it is the red rays which are passed by the yellow glass which have negative action, and these are cut off by the green glass.

There seemed, in many of the tints which had undergone reduction through negative action, a tendency to darken again to some extent under continued exposure to the same rays, thus showing a similar effect to that described by Foucault and Fizeau in regard to Daguerreotype plates. No doubt the effect to be obtained depends to a great extent on an equilibrium being established between opposing influences, and mass action evidently has a large part in determining whether the change in density is to be positive or negative, but there also appears to be reason to suspect that possibly the products, resulting from the action of rays of different wave lengths on silver salts, are not identical in nature. This view gains much support from the fact observed by Mr. F. E. Ives and Dr. Vogel that, under some circumstances, the velocity of development is much smaller in respect to images formed by red or yellow rays than to those formed by blue ones. Messrs. Mees and Sheppard remark that such a difference in the nature of the products given

<sup>4</sup> "Journal de Physique," iv., 1905, p. 620.

by the various rays is almost inconceivable, but I do not quite understand why.

The whole subject of the photo-chemical action of the less refrangible rays appears to me to deserve far more attention than it has hitherto received. Its importance, no doubt, is mostly on the theoretical side, and our theories of photographic action will necessarily be faulty unless they take into account the mysterious phenomena connected with these rays.

On the practical side, too, their properties may perhaps have some useful applications, such, for example, as in modifying the character of prints where softer effects than can be obtained by direct printing are desirable. Prints on P.O.P. of any degree of softness can be made from a hard over-developed negative by printing under it till the shadows have a satisfactory depth and then completing the prints by developing with *rayons continuaturs*, that is to say, exposing them to daylight behind glass of a fairly deep yellow tint for a suitable time, when an amount of detail will be brought out in the less exposed parts which it is practically impossible to obtain by direct printing. Much the same effect can be so obtained as would have resulted had the negative been reduced with ammonium persulphate, but by the use of the yellow glass the qualities of the pictures may be modified at pleasure and most remarkable changes shown in their scales of gradations.

H. J. CHANNON.

### THE "GREAT CONGRESS" OF PHOTOGRAPHERS.

ONE of the most curious meetings which our connection with photography has ever led us to attend was held last Saturday evening in the hall at the head of the "Court of Honour" in the Franco-British Exhibition. It was the meeting of the "great congress of photographers," our information in regard to which had been derived from a prospectus to which a reference was made in the "Journal" for September 18. This prospectus is an extraordinary production. It refers to a "committee," the members of which are not named. It commences a hopeful paragraph with "The following trains will be run . . .," but names no trains. In one case it states that those attending the "great congress" will be enabled to use their cameras in the grounds free of charge, whilst in the next it shows that the privilege to photograph without charge has nothing whatever to do with attendance at the "congress," but is granted by a special permit. In short, the so-called "congress" is only the semblance of a congress, created to lend some colour to a wholesale concession by which photographers visiting the exhibition on a certain day save the customary fee of one shilling charged for a permit to photograph. A laudable object enough, this latter, and one which, we understand, has been appreciated, but scarcely a sufficient reason for calling together a meeting and talking of a "great congress." In short, we have the edifying spectacle of a "congress" summoned in order to get for nothing what anybody can buy for a shilling, a view of the "congress" which we are interested to find taken by a self-declared supporter of it, Mr. F. C. Lambert, M.A., F.R.P.S., who, writing in the "Daily Telegraph" of September 18, says:—

"The meeting is arranged to occupy not more than one hour, and be over in ample time for those attending to see the illuminations and fireworks, which are to be of a special character. But what will, perhaps, prove the chief attraction to the majority of photographers attending this big meeting is that a special permit to take photographs on this occasion may be had, free of charge, from the organising secretary, Mr. Human."

But of the "congress" itself. When at 7.15 Mr. T. E. Freshwater took the chair, he was supported on the platform by Sir John Cockburn, Mr. Chapman Jones, Mr. C. H. Oakden, Mr. A. Haddon, Mr. C. P. Butler, Mr. S. J. Beckett, Mr. W. R. Stretton, and the hon. sec. of the "congress," Mr. E. R. Human. We looked in vain for others who had been announced as speakers or supporters—viz., Sir Henry Trueman Wood, Sir Joseph Swan, Mr. Andrew Pringle, Mr. John Spiller, and Mr. Snowden Ward—but as the announcement of the presence, at any rate of one, of the above persons had been made in the prospectus without that person's sanction, and in opposition to his expressed wish, the absence of others was perhaps not surprising. Some letters of regret were read by the secretary, but we could catch the names only of Mr. Spiller, and of Sir Benjamin Stone who had been unable to send a promised paper. A series of short addresses was then delivered. Sir John Cockburn referred

to the new interest given to life by the practice of photography and the real knowledge as compared with book knowledge thus acquired of many subjects. In expressing his pleasure at being present he mentioned that he had passed his life in Australia, and that photographic circles in this country were quite strange to him.

Mr. Chapman Jones put forward a plea for the restoration of photography as a pictorial art to the position it occupied before the advent of "control" processes.

Mr. C. H. Oakden spoke on photographic societies.

Dr. Lindsay Johnson, who, it was understood, had travelled one thousand miles in order to attend the "great congress," plunged into a technical discourse on colour matters. He first outlined what we understood to be a system of colour-cinematography, the details of which did not reach the middle of the hall in such a form as to be reportable, although from the fact that Dr. Johnson spoke from what appeared to be a packet of MSS. or printers' proofs, there is reason to hope that his communication will not fail eventually to reach the public. He next explained that he had devised a novel system for the development, etc., of Autochromes, consisting, so far as could be gathered, in the omission of the intensification. He also announced still another discovery—viz., the re-use of spoilt Autochrome plates. For this purpose he removed the emulsion coating and placed the plate (bearing the starch grain filters), film to film, with a panchromatic plate, which he then exposed in the camera (through the starch grain plate), developed, reversed, and bound up with the starch-grain plate by means of register marks. The result of this series of difficult operations had, Dr. Johnson stated, been most encouraging, and he regretted that he had forgotten to bring with him the specimens he had prepared.

This concluded the proceedings of the "congress," and the attendants at the meeting, who, we are told, numbered over 300, were at liberty to visit the fireworks, which, the prospectus declared, were to be "of a special nature, photographically." We are also informed that 957 camera permits were issued, and that the day's proceedings passed off successfully.

It is hoped that on the next occasion when a co-operative outing is organised, its promoters will spare themselves the trouble of mixing a "congress" with it; a little reticence on the present occasion would have saved them from holding themselves and others up to ridicule.

AN ECHO OF THE CONGRESS.—The following extraordinary paragraph appeared in the "Morning Post" of Monday last:—

"More than a thousand members of the London and Provincial Photographic Association attended a congress at the Franco-British Exhibition on Saturday, when papers were read by Sir J. Cockburn, Sir H. Trueman Wood, and Mr. H. Snowden Ward."

The membership of the London and Provincial Photographic Association is—well, not a thousand, and the two last-named persons were not present, nor took part in the "great congress." Shade of Mr. Vincent Crummies, "How do these things get into the papers?"

ROYAL PHOTOGRAPHIC SOCIETY.—The following lectures will be delivered at the New Gallery, those illustrated with Autochromes at 7.30, the others at 8 p.m.:—

Friday, October 2.—Autochrome Lecture, "The Thames from Kew Gardens to the Sea." By J. McIntosh.

Saturday, October 3.—"Some Glimpses of the Green Isle and its People." By C. H. Oakden, F.R.P.S.

Monday, October 5.—Autochrome Lecture, "The Thames from Cirencester to Maidenhead." By J. McIntosh.

Tuesday, October 6.—"Wild Birds and their Ways." By W. Bickerton, F.Z.S.

Wednesday, October 7.—Autochrome Lecture, "The Thames from Windsor to Richmond." By J. McIntosh.

Thursday, October 8.—"The Gorges of the River Ardèche." By G. E. Thompson.

Friday, October 9.—Autochrome Lecture, "The Thames from Kew Gardens to the Sea." By J. McIntosh.

Saturday, October 10.—"Southwell Minster." By E. W. Harvey Piper, Hon. M.S.A.

THE LATE J. G. BREWERTON.—The death took place at Oxford last week of Mr. J. G. Brewerton, who till within a few months ago carried on business as a photographer in High Street. The deceased was 65 years of age at the time of his death.



## FORTHCOMING EXHIBITIONS.

tember 11 to October 24.—Photographic Salon. Sec., Reginald Craigie, 5a, Pall Mall East, London, S.W.  
 tember 17 to October 24.—Royal Photographic Society. Sec., J. McIntosh, 66, Russell Square, London, W.C.  
 iber 13 to 17.—Southampton Camera Club. Entries close October 6. Exhibits by October 8. Hon. Sec., S. G. Kimber, Oakdene, Highfield, Southampton.  
 iber 14 to 17.—Rotherham Photographic Society. Entries close October 5. Sec., H. C. Hemmingway, Tooker Road, Rotherham.  
 iber 22 to 26.—Hove Camera Club. Entries close October 15. Sec., W. Chater Lea, Cransley Lodge, Dyke Road Avenue, Brighton.  
 iber 27 to 31.—Heaton and District Camera Club. Entries close October 12. Secretary, George C. Urwin, 24, Tenth Avenue, Heaton, Newcastle-on-Tyne.  
 iber 28 to 29.—Watford Camera Club. Entries close October 22. Sec., W. Branch, 100, High Street, Watford.  
 iber 4 to 7.—Hackney Photographic Society. Entries close November 2. Secretary, Walter Seife, 70, Paragon Road, Hackney, N.E.  
 iber 20.—Redhill and District Camera Club. Entries close November 7. Sec., J. Paterson, Ness House, Redhill.  
 iber 23 to 26.—Lancaster Photographic Society. Sec., J. Holt, 11, Fern Bank, Lancaster.  
 iber, 1908, to January, 1909.—Kiew International Photographic. Sec., S. T. Horovitz, Technical Society, Kreshchatik, 10, Kiew, Russia.  
 1909.  
 ary 6 to 27.—Northern Photographic (Manchester). Entries close December 11, 1908. Sec., S. L. Coulthurst, Broad Oak Road, Worsley, Manchester.  
 uary 13 to March 13.—South London Photographic Society. Sec., H. Creighton Beckett, 44, Edith Road, Peckham, S.E.

## Patent News.

*process patents—applications and specifications—are treated in the Mechanical Notes.*

The following applications for patents were made between September 19:—

ENT PICTURES.—No. 19,297. Improved process for manufacturing pictures. Alfred Julius Boulton, 111, Hatton Garden, London.

ER.—No. 19,339. Portrait shutter. Frank Dean, 20, Nassau Street, Mortimer Street, London.

IGHT LOADING.—No. 19,367. Improvements in means for loading and unloading photographic sensitised plates in the daylight. Herbert Richard Allen, 18, Southampton Buildings, London.

ATOGRAPHS.—No. 19,742. Automatic fire-extinguishing apparatus for cinematographs. William Charles Cooke, 57, Chancery Lane, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

Specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

C-INK PROCESS OF COPYING PLANS.—No. 19,534, 1907. The invention is a method of producing by means of iron salts a lithographic or other printing surface from which copies can be taken in greasy ink. It is a development of the process described in Pat. No. 11,312, 1906 ("B.J.," July 12, 1907, p. 525, or "J." Almanac, 1908, p. 657).

In the previous processes the solving power of the ferrocyanide of potassium on a gum-ferric film was used for the purpose of producing a photo-impressed stencil film, and to produce positive copies of positive transparencies on the surface of the supporting material. Under the present invention the application of the perking effect of a water solution of ferrocyanide of potassium (or its equivalent) on a colloidal ferric film, or the absorbent power of

the film for the solution, under the controlling effect of the action of light and the consequent mechanically repellent action of the water-impregnated film for spirit or greasy or printers' inks, is utilised for producing, on the surface of the film itself, a negative copy from the transparency. The invention also includes the use of an improved support for gum-ferric film for use in both the surface and stencil processes.

Such a colloidal ferric film is used and applied as an effective substitute for the chrome films now in general use throughout the processes of photo-mechanical printing, wherever it is found to be applicable for the purpose of obtaining photographic impressions for the production of multiple copies by machine or mechanical printing, either from the surface of the photo-impressed film, or from the surface of stone or metal plates, or by means of etched or engraved relief or intaglio metal plates or blocks, a solution of ferrocyanide of potassium being substituted for the water solvent.

Before being acted upon by light, the colloid-ferric film will be quite permeable by a water solution of ferrocyanide of potassium, but after exposure it will become more or less impermeable, according as the light has affected it. Such a film is exposed to the action of light beneath a transparency in the usual way, for such a time as shall render the parts thereof, on which the light has acted, more or less impervious to a solution of ferrocyanide of potassium.

It may now be said to be photo-impressed, and is ready for application and use in the various branches of photography and of photo-mechanical process printing work, according as it is subsequently treated, as is indicated, and in some cases described as follows:—

Throughout this specification the terms "positive" and "negative" are used in relation only to the original transparency used.

According to one part of the invention the film in this light-affected condition, if on the surface of paper, glass, etc., will be treated with a water solution of ferrocyanide of potassium (or its equivalent) until the unexposed parts absorb same, in which condition the unexposed parts will (after the usual collotype etching treatment) repel printers' inks; and then the surface so prepared is inked up, the ink attaching itself to the exposed or non-absorbent parts, as in the collotype process with bichromated gelatine, and multiple copies may be produced therefrom by contact surface printing in a press in the usual way. These prints will be negative copies of the original transparency used.

If a single photo-copy only is wanted, either in pigment or in litho transfer or in printers' ink, the photo-impressed film is first inked up all over, then this inked copy is immersed in a bath of ferrocyanide of potassium, stopping the action when desirable by placing the copy in a water bath. Then the superfluous ink on the absorbent unexposed parts is removed by gently rubbing, when a negative copy on a blue ground of the transparency will result; these operations being all similar to those followed in preparing the bichromated gelatine film photo-litho transfers, as at present used in printing processes.

If a stippled, grained, lined, or hatched original has been used, and the copy obtained as last described is in litho transfer, or other suitable greasy ink, this copy will transfer to the surface of stone or metal, or the photographic impression may be produced directly on the surface of the stone or metal plate. And the metal surface may be printed from by contact surface printing; or it may be converted by acid etching into a relief or intaglio printing plate or block for use in typographic printing.

And if the film has been covered over its surface with ordinary pigmented ink, enamel, or varnish, and only a single photo-copy be required, the blue coloration induced upon the carrier or material coated with the film in the parts unexposed to light, in developing with the ferrocyanide of potassium, may be removed in a bath of common soda or of oxalate of potassium.

In the production of photographic copies of transparencies, and in their subsequent treatment, where liquid spirit inks or greasy or turpentine inks are used, and in which photo-sensitive gum or gelatine colloidal ferric films are employed, a penetration of the film, and spotting or speckling of the surface of the substratum after the film is removed, has been found to occur, constituting defects in the photo-copy produced; and one of the objects and effects of the invention has been to obviate these defects in such films so as to make them of practical utility in their application in

pigment photographs, and in litho or turpentine printers' ink photo-work, as applied to the photo-mechanical printing processes. And it is accomplished by the use in connection with the colloidal ferric film solution—which may be assumed to be of the kind now in general use for producing positive copies in Prussian blue stain—of such a substantial proportion of alcohol or other spirit as shall dissolve all foreign impurities in the thickening substance used to form the film, such as certain gums or resins and greases, which would remain insoluble in water, and which would be present in suspension in the water solution of the colloidal substance used to form the ferric film. The effect is that a homogeneous solution and a uniform and impervious film is formed capable of resisting the penetration of the spirit inks, pigments, or enamels, or the greasy litho-transfer inks, which may be superimposed upon it. The proportion of alcohol to be used will vary with the colloid used, but some 20 per cent. of the solution used will produce efficient results.

A more homogeneous film is thus produced forming a more perfect resist to the penetration of greasy litho-printers' inks, or to any other greasy, alcoholic, spirit or turpentine pigmented inks or the like which may be used in connection with the processes herein referred to.

In using the film on the surface of paper for photo-lithographic transfer purposes to stone or metal, difficulties are experienced in removing the inked film from the soft and absorbent felted surface of ordinary paper, without extra rubbing, in the processes of development, and so endangering the lines of the copy, and from the want of adhesion of the inks to the sized surface of ordinary soft paper, or from the soft paper parting with the ink irregularly to the stone or metal surface. These difficulties are overcome by using as a substratum to carry the film a paper which has already been coated with a hard surface, say of sulphate of barium ("baryta" papers).—Henry Lionel Shawcross, Water Engineer's Office, Dale Street, Liverpool.

The following complete specification, etc., is open to public inspection before acceptance under the Patents Act, 1901:—

CAMERAS.—No. 17,624. Photographic cameras. Optische Anstalt C. P. Goerz A. C.

### New Trade Names.

SWANS' NECKS (DEVICE).—No. 304,225. Chemical substances used in manufactures, photography or philosophical research and anti-corrosives. Chemische Fabrik Helfenberg, A. G. vorm. Eugen Dieterich, Helfenberg, bei Dresden, Germany, manufacturers. June 25, 1908.

### New Books.

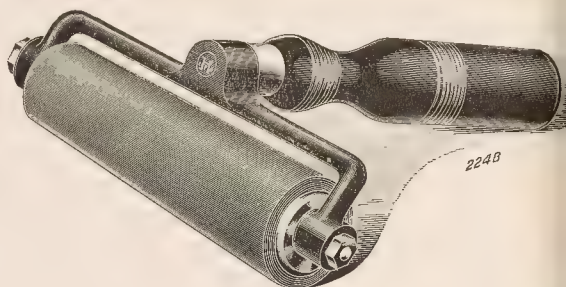
ORTHOCHROMATIC PHOTOGRAPHY.—In "The Photo-Miniature" (No. 92) just issued, the theory and practice of ortho work is treated under the title of "Practical Orthochromatics." The matter is well adapted for a first and pleasant introduction to the subject. (Dawbarn and Ward, Ltd. 6d. net.)

"SOUVENIR ANNUAL" OF THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA.—Here is tangible evidence of the real activity of the Convention of Professional Photographers held at Detroit for four days in July last. It is the custom of the Photographers' Association of America thus to produce a record of its doings, and the present volume, which owes its admirable form and arrangement to Mr. Frank V. Chambers, of the "Camera," contains much which renders it worthy of preservation even by those whose absence from the meetings deprives it of its virtue as a souvenir. The Annual is not in any sense a formal report of the Convention proceedings, but a collection of short articles and reproductions of portraiture by leading American photographers. The former relate to both the commercial and æsthetic sides of the photographer's occupation, and are by such men as B. J. Falk, Pirie Macdonald, Dudley Hoyt, and E. Goldensky. Herr R. Dührkoop contributes an article on "Camera Pictures and their Effect on Culture."

## New Apparatus, &c.

The "Tudor" Roller Squeegee. Sold by Houghtons Ltd., 88 and 89, High Holborn, London, W.C.

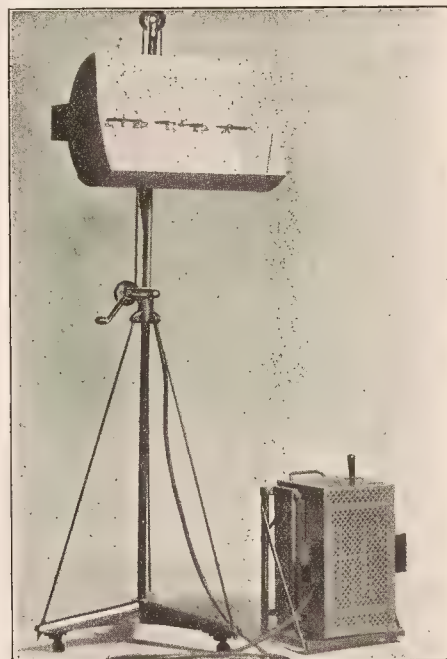
A pattern of roller squeegee made specially for hard regular trade work reaches us from Messrs. Houghtons, who have just marketed it under this title. The squeegee is mounted on a substan-



tial cast-iron frame, the spindle, which carries the roller, running in ball-bearings. The apparatus is of a kind which one purchases with the object of keeping it in use for a lifetime. Its price is 7s. 6d.

The "Jupiter No. 2" Electric Studio Lamp. Sold by John J. Griffin Ltd., Kingsway, London, W.C.

A remarkable lamp for studio portraiture by artificial light has just been placed on the market by Messrs. Griffin at the opportune moment when many photographers are contemplating the installation of some form of artificial illuminant in the studio. The "Jupiter No. 2," as it is called, owes its design and manufacture to the same



source which produced the "Jupiter" flash arc, but the present lamp is not in any way a further development of the flash system. On the other hand, the essential point in the lamp consists in the automatic adjustment of two open arcs arranged in series. This is done by a system of levers which hold the carbons constantly in the right position, and gives an even burning of the two arcs. The result is a light of remarkable intensity, sufficient to allow of ex-



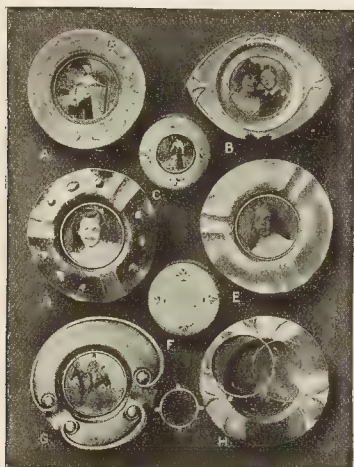
of one-tenth of a second on a rapid plate. At  $f/4$  the light, as have seen it, is perfectly steady and noiseless, and its enclosure the chamber, seen in the drawing, prevents any hot fragments the arcs falling on the studio floor. Moreover, the shield which is attached to the reflecting chamber allows of the light to be cut off in any desired way, from top, bottom, or middle, whilst the reflecting chamber itself may be directed upwards or downwards. The lamp of course, used behind a diffusing screen. It is suitable for both direct and alternating current of either 100 or 200 volts. Its price, complete with resistance stand and reflector, is £25. We should add the lamp is also supplied in a different mounting, which enables it to be placed horizontally above a velarium of any convenient size. Every agreeable diffusion of light is thus obtained, and the method of the studio being arranged so that the lamp itself is kept out of sight.

We should further add that Messrs. Griffin are showing the lamp in their professional rooms at Kingsway, and have taken a large stand at the Electrical Exhibition at Manchester, opening October 3, for the special purpose of demonstrating their Jupiter lamps. All photographers within the neighbourhood of Manchester are invited, and Messrs. Griffin will be pleased to make an appointment for them to make photographs with the lamp if they will telephone to the exhibition. The number of the stall is 252.

## New Materials, &c.

Trays and Cigarette-ash Trays. Sold by W. Tylar, Ltd., 41, High Street, Aston, Birmingham.

An ingenious and saleable novelty, particularly for the Christmas season, has been sent us by Messrs. W. Tylar, Ltd., and should be of great value to the professional photographer, inasmuch as it provides a means of supplying a photograph in a novel and attractive form. The trays are made to take a circular glass of  $2\frac{1}{2}$  inches diameter,



which is secured to the bottom of the tray by means of a thin metal plate provided with flexible tongues, which pass through slits in the bottom of the tray. Three varieties of the trays are issued, one of matt, silver-like metal, another in metal of a steel surface, and a third having the appearance of an article in hammered copper. They are issued singly or in numbers at very moderate prices.

**MR. PERCIVAL SMALL'S COLOUR PRINTS.**—We have received a small selection of these artistic productions in photogravure printed in various tints instead of the usual monochrome. The process is not new; in fact, it is almost as old as the days of mezzotint itself, and it was resorted to as an inducement to purchasers who might be refused a plate the wear and tear of which was too plainly evidenced by monochrome. Mr. Small, however, is under no such necessity, and he is to be congratulated as being practically a pioneer in the revival of tinted prints from copper applied to pro-

fessional photography. Two of these examples have already been dealt with in our review of the Royal Photographic Society's Exhibition, where they now hang. Others in the batch are perhaps hardly so successful as those. In two, an attempt has been made to give a handwork character to the portraits by introducing a background lightly drawn in black chalk. It is nicely enough managed, but its looseness and suggestiveness in no way harmonise with the faces, which are necessarily of the photograph, photographic. The portrait of Miss J. Hope as she appeared in the Chelsea pageant is, both in subject and treatment, remarkably like many a print of early days. Mr. Small, we understand, makes these photogravures for his sitters at a fixed scale of charges, and is prepared to execute commissions, on favourable terms, for professional photographers. Application should be made to him at The Tower House, 28, Tite Street, Chelsea, S.W.

**CHRISTMAS MOUNTS AND CALENDARS.**—The Crown Photographic Manufactory, Rotherham, send us specimens of their specialties of this description for the coming season. They supply a calendar mount, to take a cabinet print, slip-in fashion, for 3s. a dozen; the prevailing tone is brown, very suitable for toned bromides. The Christmas mounts are of very various designs, from an ornate design in green and gold on a cream pattern (No. 113), to a quiet chocolate-coloured card with faint white inscription (No. 71). The firm will send illustrated circular on application and sample packets of mounts or calendars at 1s., 2s., or 3s.

## CATALOGUES AND TRADE NOTICES.

**MESSRS. WELLINGTON AND WARD** have just issued instructions for the use of their bromide and gaslight (S.C.P.) papers in the form of 20-page booklets, which slip easily into the waistcoat pocket. Copies of these handy volumes can be obtained by users of, or dealers in, Wellington products on application to Elstree, Herts.

**OPTICAL LANTERNS AND ACCESSORIES.**—Messrs. J. Lancaster and Son, Ltd., Broad Street, Birmingham, have just issued a new catalogue of the numerous patterns of lantern for oil, limelight, and arc lamps placed on the market by them. The list also describes the most useful accessories for lantern work.

**LANTERNS AND CINEMATOGRAPHS.**—The first of two catalogues received from Messrs. W. Butcher and Sons is a good deal more than a price list pure and simple. It is a conveniently terse handbook on the available projection apparatus, illuminants, and accessories, the discussion of which occupies 28 pages. An abridged price list of Messrs. Butcher's many novelties for lanternists is appended. A further list of the "Empire" home cinematographs describes the use of the apparatus of this class which can be procured at such moderate prices as £4 15s. or £5 15s., that at the latter price serving for the projection also of lantern-slides.

**GOLDONIA COMPETITION.**—This competition, open exclusively to beginners and to those who had never obtained any prize in a competition before, has now been judged by Messrs. A. H. Blake and A. C. Brookes, with the following result:—First prize, James Wilkie, £3 3s.; second prize, Robert Welch, £2 2s.; third prize, Wm. E. Chetcuti, £1 1s.; commended, A. J. Johnson, 10s. 6d.

**CLASSES IN PHOTOGRAPHY.**—At the Cripplegate Institute, Golden Lane, E.C., commencing next Wednesday at 6.30 and 8 o'clock, Mr. John H. Gear, F.R.P.S., will give instruction weekly throughout the winter and spring. The courses cover a wide field of work, and should be of great value to the young professional photographer, who frequently is sadly handicapped through lack of technical training. Special attention is devoted to those wishing to gain the Technical Diplomas of the City and Guilds of London Institute and the London Chamber of Commerce. Last year over 87 per cent. of the students sitting obtained these diplomas. Pictorial work is not neglected, and those anxious to improve in this branch will obtain every facility from Mr. Gear, whose own work is so well known that no description is necessary here. From the syllabus very little appears to be omitted which is necessary for a photographer to know, whether amateur or professional, and both are admitted. Full particulars can be had from the Manager of the Institute. On Thursday evenings a very similar course is conducted by Mr. Gear at the Thornton Heath Polytechnic.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

- FRIDAY, OCTOBER 2.**  
Aberdeen Photo Art Club. Annual Business Meeting.
- SATURDAY, OCTOBER 3.**  
Wimbledon Park Photographic Society. Outing. Putney to Hammersmith.
- MONDAY, OCTOBER 5.**  
South London Photographic Society. "The Exhibition Picture." Rev. H. O. Fenton.  
Stafford Photographic Society. "Bromide and Gaslight Printing." Demonstrated. The President.
- TUESDAY, OCTOBER 6.**  
Chiswick Camera Club. Annual Meeting.  
Hackney Photographic Society. Members' Lantern Slides.  
Birmingham Photographic Society. Meeting to Inaugurate the New Rooms.
- WEDNESDAY, OCTOBER 7.**  
Edinburgh Photographic Society. "High Speed Photography." J. F. Duthie.  
Leeds Camera Club. "Old English Autumn Fair."
- THURSDAY, OCTOBER 8.**  
Liverpool Amateur Photographic Association. Lantern Lecture: "Eastward Ho!" being reminiscent of a journey to Ceylon, India and Burmah. F. Gregory Jones.  
L.C.C. School of Photo-Engraving. Bolt Court. "MS. Sources of Type and Printed Decoration of Books." G. H. Palmer, B.A.  
Wimbledon and District Camera Club. Affiliated Societies' Slides. "Tasmania."  
Northern Tasmania Camera Club.  
North-West London Photographic Society. "Architectural Photography." H. W. Bennett, F.R.P.S.  
Richmond Camera Club. "Boardoid Prints." J. Sargent.  
Handsworth Photographic Society. Competition Slides.

## Commercial & Legal Intelligence.

**THEFT BY CANVASSERS.**—At Brierley Hill, last week, John Braithwaite Ainsworth, a photographic canvasser, and Louis Lyons, both late of West Street, Stourbridge, were charged, on remand, with stealing at Kinver, on the 3rd inst., a lady's cloak, a pocket handkerchief, some needlework, and 6d. in money, the total value being £2, the property of Mary Ann Darby, of High Park Farm, Kinver. It was stated that the prisoners had both been in custody for several days, and the chairman said they were both guilty of the charge; but the magistrates had come to the conclusion, as the men had been in custody ten or eleven days, to discharge them conditionally on their entering into their recognisances to be of good behaviour, and to come up for sentence, if called upon, within twelve months. If it had not been for the fact that they had been in custody, the magistrates could not have taken that course. They were ordered to pay 16s. 1d. and costs, or 14 days in default.

**IPSWICH PHOTOGRAPHIC FAILURE.**—At Ipswich County Court, on September 25, Eustace Bernard Eldridge, photographer, 24, Butter Market, and residing at 46, London Road, Ipswich, applied for his discharge under the Bankruptcy Acts. The Official Receiver stated that bankrupt filed his own petition in March, 1903. His estimate of liabilities to rank for dividend showed a total of £306 7s. 7d., which included £200 due to his father for money lent, and a dividend of 1s. 5d. in the £ was eventually paid on proofs for £298 7s. 11d. Commencing his business life as a clerk in an insurance office, bankrupt employed his leisure time as an amateur photographer, and subsequently took up that art as a profession. He purchased a business in Ipswich, which had been carried on for some time, and was represented as being remunerative, but he was unable to make a living. Eldridge's solicitor contended that bankrupt was misled into taking the business. The discharge was granted subject to the usual two years' suspension.

**SCARBOROUGH PHOTOGRAPHIC FAILURE.**—At Scarborough Bankruptcy Court, on September 22, Joseph Edmund Bramwell, photographer, 38, Beechville Avenue, and lately carrying on business at 124, Westborough, Scarborough, was publicly examined. He stated that he commenced business at Westborough with a partner with a capital of £75. He afterwards took over the business, paying £125, which amount he agreed to pay in view of the previous year's takings amounting to over £300. The following year he took only £180, this being due to increased competition, and later he became insolvent. He had opened other places in the district, but had lost money. The creditors had refused an offer of 2s. 6d. in the £.

His wife was now carrying on the business, and she claimed no effects. An estimated account showed a deficiency of £274 0s.

**LEGAL NOTICES.**—Notice of intended dividend to the creditors of Edwin John Pulman, 11, Pontmorlais, Merthyr Tydfil, Glamorganshire, photographer, etc., has been given. The last day for receiving proofs by the Official Receiver, Post Office Chambers, Pontypool, is October 9.

Notice of intended dividend to the creditors of Scott St. Meale, photographers, etc., Coltishall, Norfolk, has also been given. The last day for receiving proofs by the Official Receiver, 8, Street, Norwich, is October 10.

### NEW COMPANIES.

**W. R. CAMERON, LTD.**—Capital, £250 in £1 shares. To acquire the business carried on by W. R. Cameron, at 100, Abbey Street, Accrington, as "W. R. Cameron," and to carry on the business of chemists, druggists, photographers, dealers in photographic requisites, etc. The first subscribers are:—W. R. Cameron, 100, A Street, Accrington, chemist and druggist; and D. Henderson, Fox Street Accrington, chemist's assistant. Private company. R. Cameron is permanent managing director. Qualification of twenty directors, 25 shares. Registered office:—100, Abbey Street, Accrington.

## News and Notes.

**PURCHASE OF OLD NEGATIVES.**—The address of the firm now Bowen, mentioned last week in reply to a correspondent, is 58, G Road, Holloway, N. This firm purchases negatives from customers within a cartage area of, say, twenty miles.

**LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.**—Annual supper will be held at the rooms, on the 15th, the "A Tree and Mitre," 30, Cursitor Street, Chancery Lane, E.C. Particulars may be had from the Hon. Sec., Mr. E. R. Hurst, 43, Whitta Road, Manor Park, Essex.

**LEEDS CAMERA CLUB.**—The members' Year-book and Syllabus for 1908-9 has been issued in the shape of a convenient cloth-bound book for the waistcoat pocket. The Leeds C.C. have a full programme of fixtures.

**SOME COLONIAL PORTRAITURE** with the Dallmeyer-Bergheim has been added to the exhibits at the stall of Messrs. J. H. L. Meyer, Ltd., at the New Gallery. It is the work of Messrs. Notman and Son, of Montreal, perhaps the oldest firm of professional photographers in the colonies. The prints, done in platinum, are fine examples of powerful portraiture, which compare well with high-class work in this country.

**MR. W. ETHELBERT HENRY**, who for over twelve years past has acted as the guide and friend to those who have addressed queries to the "Amateur Photographer," has just relinquished his charge of this section of our contemporary. Mr. Henry, whose wide technical knowledge, placed liberally at the disposal of inquirers during this time, has made him many friends, some of whom hope shortly to visit in a business way on behalf of his firm, Vanguard Manufacturing Company.

**WATFORD CAMERA CLUB.**—The annual exhibition will be held at Buck's Restaurant, Watford, on October 28 and 29. In the classes silver and bronze medals will be placed at the disposal of the judge, Mr. F. J. Mortimer, for award, with the addition of a gilt plaque in the champion class. Entry forms, together with a copy of the rules and conditions governing the exhibition, may be obtained from the hon. sec., Mr. W. Branch, 100, Watford Street, Watford.

**ADMISSION TO THE NEW GALLERY BY RED BOOK TICKETS.**—The secretary of the Royal Photographic Society writes to us as follows: "The 'Red Book' was published before it had been decided to open the exhibition every evening, and in consequence the tickets in that book refer only to Monday, Thursday, and Saturday evenings. As a matter of fact, holders of Red Book tickets can obtain admission by them on any day or evening."

**LANTERN LECTURES ON LOAN.**—Messrs. A. E. Staley write: "We take this opportunity of informing your readers that we shall be



ready for exhibition before the photographic societies during the coming season a very fine set of lantern slides. These slides have been made with the Series II. f/5.6 Euryplan anastigmat by Mr. J. A. M. on a journey from Paris through Chartres to Grenoble. They may be booked starting from January 1 next."

**SOUTHERN COUNTIES PHOTOGRAPHIC EXHIBITION.**—Intending competitors are reminded that all entries close on October 5. The honorary secretary is Mr. A. D. Breeze, Great Western Chambers, Plymouth. Gold, silver, and bronze shields to be awarded this year are for the best excellent design and workmanship, and should be highly valued by the successful winners.

## Correspondence.

We do not undertake responsibility for the opinions expressed by our correspondents.

Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

### THE PICTORIAL WORK OF TO-DAY AND FIFTEEN YEARS AGO.

To the Editors.

Gentlemen,—I, for one, believe that "Anti-progress" is not in vogue in his preference for "straight" as distinguished from "coloured" photography. Curiously enough, Mr. Mortimer, one of the oil-prints "Anti-progress" holds up as an awful example, is remarkable in last week's "Amateur Photographer," apropos of B. Gay Wilkinson: "One of the most consistent of the 'old school' of landscape workers, of whom J. B. B. Wellington and the late Mr. J. A. M. were shining examples. We see too little of Mr. J. A. M.'s pictorial work nowadays, and the exhibitions are the result of the absence of his straightforward outlook on Nature." It thus appears that your critic's comparison with the "old school" of work is not such an important qualification of his praise for the oil-prints and Co.-cum-Ponting exhibit at the Royal as "Anti-progress" would have us believe.—Yours truly,  
K. HICKS.  
1, Elmiston Road, Shepherd's Bush, W.

To the Editors.

Gentlemen,—Although gum and oil printing do not come within the scope of your publication—to use the term you have been good enough to use—the Raines Service, yet we are only too pleased to accept of mounting and framing prints made by either method. We are because we are afraid that "Anti-progress," in his vigorous attack on "straight" photography, may have given offence to some of the workers in the "control" processes, and naturally we do not wish to be identified with any such methods of discussion.—We are, gentlemen, yours faithfully,  
R. AINES AND CO.  
Photographic Works, Ealing, London, W. Per W. J. Casey.

### REMINDER TO PROVINCIAL PHOTOGRAPHERS.

To the Editors.

Gentlemen,—The season for municipal and most of the various functions of the Borough and County Council, and all functions in local government life, is approaching, and it behoves camera men to be busy in securing sittings from present and prospective councillors in particular—candidates, etc., within their respective areas.

"Free portrait" non-ratepayers are on the warpath with deductive circulars—no charge for sittings either at home or at the best End studio. Such invitations are being sent broadcast to public men in the provinces, all over Great Britain, with a view to the effect that they would be prepared also to photograph members of the official's family at a special rate, with even a fee, if not approved, all without fee. These invitations are sometimes by three or four differently worded blandishments, and no answer should be received to the circulars. Masters of schools and colleges are canvassed for groups of the boys and girls, and of view books and postcards.

Provincial photographers, be up and doing! Canvass in your own area where you assist with your contributions to the rates, and in your business in your own hands, as far as possible. So we may mind our brothers to be active.  
V. S.

## Answers to Correspondents.

- \* All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 2A, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.
- \* Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.
- \* Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & CO., 2A, Wellington Street, Strand, London, W.C.
- \* For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 2A, Wellington Street Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.

### PHOTOGRAPHS REGISTERED:—

- T. Cummings, 4, Clarence Terrace, Stockton-on-Tees. Photograph of the Stockton and Thornaby Surgical Hospital.
- W. C. Hampton, 21, Esplanade, Largs. Photograph (Combination) containing Five Views and entitled: "Photograph of Peeps of Greta Falls, Largs."
- E. O. Parkin, 68, Wilkinson Street, Sheffield. Two Photographs of Sheffield United Football Team, 1908-9.
- T. W. Marshall, 55, Box Lea Terrace, Thornaby-on-Tees. Photograph of Lady Bell's Rest House, East Rounton, Northallerton, Yorkshire.
- Miss G. S. Kirkby, Lansdown, West Kirby, Cheshire. Photograph of West Kirby Parish Church after a Snow Storm.
- Yorkshire Speleological Association, 317, Roundhay Road, Leeds. Nine Photographs of Gaping Ghyll, Yorkshire.

### DRAWING REGISTERED:—

- H. L. Morel, 126, Welbeck Terrace, Mansfield Road, Nottingham. Drawing entitled: "Nottingham Goose Fair Souvenir, 1908."

**SWING FRONT.**—Can you kindly let me know whether the action of a swing front fitted to a studio type of camera is in all respects the same as a swing back, and if not, in what points does it differ from the latter? Your reply would be exceedingly valuable if you can deal fully with the matter, as I know others of your readers who are anxious to obtain information upon this subject.—  
INQUIRER.

The swing front is in all respects a perfect substitute for the vertical swing back, provided the swing front is combined with a rising and falling front with a big range of movement; but, of course, a vertically swinging front will not take the place of a horizontal swing to the back. Seeing that in studio work the swinging movement is only required for purposes of focussing, we are inclined to think that the swing back is preferable for studio work. A universal swing front would be a perfect substitute, but it would be difficult to manipulate with a big studio camera. With field cameras the conditions are different, and the swing front is undoubtedly the easiest to manage.

**HYPO.**—We do not know who are the makers of such apparatus. Dealers in bookbinders' requirements might supply it.

**SQUEEGEED PRINTS.**—As I have had much trouble to get prints off the glass after squeegeeing, I have treated them in the following way. After the prints have been dried, I have soaked them in a solution of 1 oz. formaline in 10 oz. of water for about 5 minutes and then put them on the glass without washing, and the result has been every print came off clean and beautiful, without any trouble. Will this treatment cause them to fade or discolour afterwards or interfere with their permanency?—  
NOVICE.

There is no reason to think it will, though we must say we should prefer to wash for at least two minutes. This should not affect the ease of stripping.

**READER.**—Without a knowledge of your requirements it is impossible for us to say. It is for you to choose between gas, arc-light, or mercury vapour. Your best course is to send for price lists of makers of the lamps. See our advertisement pages.

**DEVELOPER.**—Could you please inform me through the columns of your paper of a good formula for density of negatives taken by electric light. At present I am using hydroquinone and caustic soda, which gives a nice soft negative with no density to speak of.—  
MAS.

Your experience is quite exceptional. Hydroquinone easily

gives a very hard negative, owing to its short multiplying factor. There must be something wrong with the formula you are using or the exposures you are giving. Try the second formula on page 787 of the current "Almanac."

**OWNERSHIP OF NEGATIVE.**—Kindly inform me to whom does the negative belong? 1. If I am requested to take a photograph and paid for copies thereof. 2. If I ask permission to take a portrait and copies are afterwards wanted and paid for.—ENTHU.

1. The negative is the property of the sitter, but you are entitled to retain custody of it. 2. The negative is yours without qualification.

**FIXATIVE FOR PASTEL WORK.**—Can you tell me if it is possible to fix pastels to prevent rubbing. Would ordinary fixative do, as used for black and white?—ARTIST.

The fixative given for crayon work can also be used for pastel. You will find the formula on page 837 of the "Almanac."

**COPYRIGHT.**—A friend of mine asked me to take a photograph of his family in their garden, which I have done and copyrighted same, also giving them two copies free of charge. A friend of theirs now says he is going to send one of the prints away to have it copied and enlarged by the free coupon dodge. 1. Can I stop him from doing this? 2. If he does, what redress can I claim? 3. From whom should I claim?—EDWARD PLOWMAN.

1. You cannot restrain him for doing what he suggests, but his act is an infringement of your copyright in the photograph. 2. You can take action and recover penalty for infringement provided that you register the copyright prior to the alleged infringement. 3. You can proceed either against the friend or the enlarging firm.

**ENQUIRER.**—So long as you do not sell scheduled poisons you are at liberty to trade in chemicals. The photographic chemicals which you should avoid are potassium cyanide and mercury chloride, and you must not sell mixtures which contain either of these bodies, even though their presence may not be known to you.

**DEVELOPED WARM TONES.**—1. Will you kindly inform me in the next issue of the "Journal" whether there is any really practical and easily worked formula for the obtaining of purple-brown tones, similar to those obtained by hypo-alum, by direct development of bromide paper? 2. Also, can you supply the name of any firm who prepare composite designs for use in making peeling and other cards by combining several views on the one card?—W. L.

1. We know of no method which approaches the after-toning processes. 2. If you mean a special design we can best refer you to an artist and designer such as Mr. W. T. Whitehead, 10 and 11, Fetter Lane, E.C.

**COLOUR PHOTOGRAPHY.**—You will greatly oblige me by giving directions for converting a black tone positive into a bluish-green one, fit for use as a component of a trichromatic transparency. Also please state what advantage there is in using such a component instead of a gelatine relief positive stained to a bluish-green colour.—TRICHROME.

The developed positive may be bleached in a 10 per cent. solution of potass ferricyanide, washed and placed in ferric chloride solution until the desired tone is reached, or an alternative bath is:—Ammonium ferric oxalate, 8 grs.; potass ferricyanide, 8 grs.; glacial acetic acid, 80 minims; water, 3½ ozs., which tones the developed positive directly to a blue. The colour is afterwards given a greenish tone by immersion, after washing for one or two minutes in a 1 or 2 per cent. solution of hydrochloric acid. This blue is not as close to theoretical requirements as can be secured with a dyed relief, and the latter method is therefore more satisfactory.

**J. T.**—We can only suppose they are by the well-known firm of Valentine, 154, Perth Road, Dundee.

**S. PORTER.**—We do not recognise the name, unless you mean M. Klary, 17, rue de Mauberge, Paris.

**S. E.**—So far as we know, there is nothing exceptional in the method of working of the gentlemen named beyond the skill they bring to bear upon it. You can avoid the extreme whiteness you get on the foreheads of your portraits by the judicious use of a head screen. If you use a cream bromide paper we should think that

any after-staining would be unnecessary—if you pay attention to the lighting. You might try staining the pictures with an infusion of coffee.

**LENS CAP.**—In our next.

**SULPHIDE TONING.**—(1) Will you please inform me which you consider the better method for obtaining sepia tints on bromide, the hypo-alum or sulphide? I have tried the latter, but, far, have not been very successful. I shall be pleased to receive your advice. Also, will you give formula for both? (2) I know of any substance that will colour matt varnish so as to make it more opaque?—A. BRUCE.

(1) Some few papers will not tone well by the sulphide process, but if you use a make for which sulphide toning is recommended, you should have no difficulty at all. The normal formula of ferricyanide and bromide, followed by sulphide, is quite satisfactory. If you have had any difficulty you had better try again a made-up preparation for the purpose. (2) Malachite green, aurantia, or asphaltum.

**PRESS PHOTOGRAPHY.**—(1) Do Press photographers, either on the staff of a paper, an agency, or unattached, receive railway passes for the various railway companies? If so, to what official should application for a pass be addressed? (2) In the case of such passes as sports, race meetings, demonstrations, etc., is it usual for the Press to send photographers to order photographs from the agencies, or do they purchase photographs which are submitted after the event is over? (3) Do any of the Press agencies make a special feature of using photographs (of news events, etc.) by men not on their staff? (4) What are the addresses of the Press Illustrations Bureau, (b) London News Agency, (c) World's Geographic Press, (d) Topical Press?—X. PRESS.

(1) So far as we are aware, they do not. Why should they? They may have an understanding as to having the first refusal of work of a given agency or Press photographic firm, but it is for the agency employing photographers or a firm of Press photographers to offer their work round the papers, some of which may advise beforehand. (3) Rarely of subjects with which the own staff can deal, for the reason that the agency has earlier secured the rights of an unexpected event than publication in the newspaper therefore has always some hours' start of the unattached photographer. (4) (a) We do not know; we believe the firm is (b) 173-5, Fleet Street, E.C. (c) We do not know. (d) Outer Temple, E.C.

**NEMO.**—From what we gather from your letter you have secured a mild term—acted very discreditably, and now you seem surprised to find yourself in an unpleasant position, and ask us to tell you how to get out of it. That we must decline to do, and refer you to a solicitor.

**H. C. G.**—If the patent to which you refer has lapsed you are at liberty to work the process. We do not know whether it has or not. The full term of fourteen years has not yet expired, but that is nothing to go by. If the annual renewal fees have been kept up the patent has lapsed, and you can work the process without let or hindrance. If you refer to the register in the Patent Office you will see how the patent stands.

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## The British Journal of Photography

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## SUMMARY.

The "B.J. Almanac" past and present. Apropos of the completion of the "British Journal Almanac," 1909, for the press in a fortnight's time we publish some notes on the first "Almanac," that of the year 1861. (P. 775.)

F. Dillaye has published lengthy details of the making of prints via bromides by the bromoil and ozobrome processes. Methods would appear to have no great advantage over that of Mr. Welborne Piper, but there are one or two useful suggestions. (P. 768.)

C. E. K. Mees, in the further chapter on the photography of coloured objects, deals with light-filters and the absorptions they would have for orthochromatic photography. (P. 770.)

A. Lockett contributes a description of the calculator for use in the work at present being shown at the Royal Photographic Society's Exhibition. (P. 773.)

The art editor of the "Daily Mirror" gave a confidential talk on press photography to the students of the Bolt Court School last week. A report appears on page 774.

Igorous carbon transparencies. Some editorial notes deal with intensifying method which may be employed in producing extra pur in the carbon transparency. These are based on the staining and similar treatment of the gelatine relief. (P. 767.)

Neglect of the cleaning of the incandescent gas burner is a frequent cause of complaints when using this illuminant for enlarging. (P. 766.)

A few notes as to the making of a dead-black background are given on page 766.

The Lumière Brothers have investigated the use of thiocarbamide as a substitute for hypo in combined baths, and conclude that there is not much to be said for it. (P. 776.)

Our report of the "great congress" of photography, the counting seconds, and the invention of self-toning paper figure under correspondence. (P. 781.)

Some specimens of photographs taken with the "Thames" screen-plate have been added to the exhibition of the Royal Photographic Society. (P. 765.)

## EX CATHEDRA.

**The "Thames" Plate at Last.** The colour section at the New Gallery has been reinforced during the past week by four specimens of the long-expected Thames plate, and the results are certainly very promising. The quality of the four transparencies is rather variable—one is a poor result while two are certainly good. The colours are brilliant and very transparent, and transparency is an obvious advantage in some respects. It has, however, yet to be proved whether transparency can be attained without loss in other directions. The beautifully soft greys and browns obtained on the Autochrome may depend somewhat on its want of transparency. They are rare in other colour processes, and it will be interesting to see if any other screen-plate will represent them as well as does the Autochrome. The Thames plates are on view in the gallery devoted to the technical section and portraits belonging to the R.P.S. collection.

\* \* \*

**The Dresden Exhibition.** But comparatively little time remains before the arrangements for the allocation of space to British firms in the "Trade" section of this international exhibition must be made. From all we can hear, the exhibition will be organised on a most comprehensive scale, and may be expected to attract visitors from all countries, and large numbers from photographic circles in this country and across the Channel. We learn from Mr. Martin Duncan, through whom arrangements may be made as to position of and charges for space, that the German authorities are prepared to erect a special pavilion solely for the British firms in the event of the collected exhibits of these latter reaching a certain amount. Mr. Duncan should be addressed at 39, Bradeley Gardens, Ealing, W., for further particulars.

\* \* \*

**Colour in Autochromes.** A writer in a contemporary criticising the Autochromes at the Salon, while admitting that the Autochrome is fairly satisfactory in its representation of primary colours, asserts that it is less satisfactory in the secondaries, and in the tertiaries it absolutely fails. Last year, when the Autochromes were first exhibited at the New Gallery, a well-known painter of great repute expressed admiration for the manner in which the Autochrome represented tertiary colours, and this year many of the slides at the New Gallery prove beyond all dispute that greys and browns can be rendered most perfectly. Evidently the critic to whom we have referred has been misled by the Salon display, in which primaries play a very prominent part. It is, however, a pity that the crudities at the Salon should lead to the Autochrome being libelled in this way, for, as a matter of fact, its

powers in the way of rendering tertiary colours and the subtleties of subdued colour are very great. Yet it is not so easy to make the plate reveal these powers as it is to produce startling effects of strong colour. Correct exposure is essential in the one case and errors are easily detected, whereas in the other case incorrect exposure that gives wrong colours only adds to the startling character of the result. In built-up still life studies the colours may be considerably varied without the errors being detected if the original is not available for comparison; but Nature is always available, and careless colour representation of her colour schemes will not pass muster. A study of M. Belhazy's work at the New Gallery will give a good idea of what the Autochrome is really capable of doing in the hands of a careful worker and trained observer of colour.

### Carbon Printing Output.

We are frequently asked, usually by some photographer who has just taken up carbon printing in his business, what is a fair output for a printer. Of course, it is impossible to give an answer off-hand, as so very much depends on the quality of the negatives and whether they are reasonably uniform, and also on the quality desired in the finished prints. It is clear that if there are not many negatives, and these are excessively dense, a good deal of time will be spent in waiting, even in a fairly good light. On the other hand, given an even batch of negatives of the right printing quality, there is little limit to the number of pieces of tissue which may be exposed, provided the negatives are carefully classified and marked with the proper actinometer tint to begin with. When the negatives are right then the limitation to the day's output is found in the putting down of the tissue on the supports and the development. If a printer stops work at six he must find out by experience how long he can go on exposing tissue while leaving sufficient time to get his prints developed before that hour. Starting at nine, and with plenty of negatives, he may easily print by the middle of the day more pieces of tissue than he will be able to develop during the afternoon. Taking cabinet pictures as being the most usual size, we should regard four or five dozen prints of first-rate quality a very fair day's work for a printer who had to classify some of the negatives and give many of them the humouring necessary to obtain the best result. If all the negatives had previously been in print and their requirements were known, and assuming reversed negatives from which single transfer prints could be made, it might then be possible to increase this output very considerably, in fact, to an extent considerably dependent on the bench and developing tank accommodation.

It is, of course, unfair to expect a large output if a tin dist. and an ordinary kettle are the only utensils available for the work of development.

**Dead Black Backgrounds.** A correspondent recently wished to know of a simple method of preparing a dead black background, and we recommended him to try the powder process, which is very effective. A quicker way that involves no special preparation is useful at times, and we have found the following very convenient and effective. Take a frame or strainer covered with linen or the "sheeting" commonly used, and, omitting sizing or any preliminary coating, wet it well all over and then coat both sides with a water-colour paint composed of lamp-black gum, and water. Fine ground lamp-black as supplied by artists' colourmen should be used, and we prefer to purchase it dry, though it can be obtained already ground in water. The oilshop ordinary lamp-black is generally too coarse to be of any use. The best mixing tool is a big brush, a house-painting "tool," and the powder and gum should be added to the mixture in small quantities, no more powder being added until the previous lot is reduced to a paste. About two ounces of ordinary "office gum," or a strong solution of gum arabic, and about eight ounces of water will make enough paint to give two coats on both sides of a 3ft. by 2ft. strainer, enough lamp-black being used to give the required consistency. Two or three thin coatings give a better result than one thick one, and it will be found that each coat dries very quickly in a draught. This is practically the same thing as a water-colour pigment, and it is just as effective on paper as on linen. The strainers are, however, very useful things, and it is always advisable to have a few handy for coating with any colour desired. The paint can always be washed off if a background of a new colour is required. The linen used for covering the frames should be tightly strained over them and put on in a very slightly damp, but not wet, state. If not tight enough it will become badly distorted and buckled when painted.

**Incandescent Gaslight.** Though the incandescent gaslight is almost universal use, it is not very common to see proof of the little care which is taken to secure the best results from it. One or two hints of a strictly practical kind may be given for the benefit of those readers who are not above taking them. Whenever a new mantle is put on, the whole burner should be brushed with a stiff clothes or similar brush. The small holes through which the gas is distributed should always be kept open. The proportions of gas and air must be correct. In most cases the air supply is too great.

## THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC FOR 1909.

Edited by GEORGE E. BROWN, F.I.C.

THE forty-eighth annual issue of THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC will be published on December 1. This year's ALMANAC reached a total of over 1,000 pages, and the entire edition of 25,000 copies was sold out immediately. Of no other photographic book ever issued can two such unique facts be recorded. The edition for 1909 will also consist of 25,000 copies.

The editorial article will deal very completely with the important subject of

### REFLEX CAMERAS,

and the systematic review of the work of the year under the title "Epitome of Progress" will be a strong feature of the volume.

The lines followed in the previous editions of the ALMANAC will be maintained in general, but in a number of particulars the arrangement of the volume for 1909 will be

modified to make it more than ever the book of universal photographic reference.

The ALMANAC for 1909 will appeal to photographers all the world over as a daily reference guide in practical work. The standard matter and formulæ will be revised and added to where necessary, and, wherever practicable, new features of an informative nature will be added.

**\*\* NOTICE—IMPORTANT.**—Our publishers ask us to notify intending advertisers that in order to complete the hundredth edition of the ALMANAC (25,000 copies) for simultaneous publication on December 1, it will be necessary to close the pages a week hence; therefore, the latest date for receiving orders and copy will be Friday, October 16.



is a regulating collar things are easily remedied by spring or uncovering the air holes until the best light is reached. In default of the collar the hole or holes should be temporarily covered by the finger. When the effect is not stamp-edging or court-plaster can be used to stop the holes not required. If, however, the light is not proved in this way the gas supply is insufficient and the holes in the nipple should be enlarged. A stout file will usually do this, but should be used carefully, as very little enlargement is required. Should one inadvertently make the holes too large, the slight burr on the underside should be smoothed out. Some "Bijou" burners we so treated gave in place of a glimmer an excellent light. When several lights are on an inadequate gas pipe these little burners will be found to consume a minute quantity of gas with a better result than a large burner. For decorative effect they are excellent. On the subject of gas appliances it may be mentioned that the yellow flame of the gas-ring, much used for carbon printing, can be put right simply by cleaning the burner thoroughly. Usually the gas company will clean such burners without charge.

#### ROUS CARBON TRANSPARENCIES FROM WEAK NEGATIVES.

It is tolerably well known that in reproducing negatives, whether of the same size or enlarged, the results depend much upon the character of the transparency from which we start. If this be thin and feeble the enlarged negative will be poor and flat, for it is next to impossible to obtain vigorous negatives from flat transparencies by any system be followed. At the present time it is generally admitted that the best transparencies for enlarging negatives are those by the carbon process, this method is almost universally employed by professional enlargers who work by way of enlarged negatives. One of the reasons for this is that there is a more perfect definition in the carbon image than is usually got in a silver

In the silver picture we have only the silver forming the image in a perfectly even layer of the vehicle holding together that be gelatine, collodion, or albumen. In the carbon image we have not only the pigment, but also its different thicknesses of the vehicle—the gelatine.

The pigmented film is thin in the lights, indeed, in the extreme high-lights there is practically no film at all, in the shadows and darkest parts it is of considerable thickness; so that the gradation is due not only to the density, *per se*, but also to the varying thicknesses of the film which carries it.

It is very generally recognised that the best negatives for carbon printing are those of a vigorous type. The light then penetrates somewhat deeply into the tissue in the shadow, and a considerable thickness of the gelatine is rendered insoluble in the darker parts of the picture. As a matter of fact a carbon picture is in reality a relief in the negative—plus a pigment. This may often be seen in the prints made from strong negatives, but a more pronounced relief is seen if the picture be developed on a support such as a glass plate. But if the print is made from a thin and poor negative the relief will be but slight, and as a consequence the print will be feeble in making its contrasts. This, however, may to an extent be overcome by modifying the strength of the sensitising solution, yet it may not be known to every one that carbon transparencies can be intensified by different methods. Intensification is, in principle, quite different from that of the intensification of silver images. In the carbon it is the pigment forming the image—i.e., the silver—acted upon, but in the former it is the vehicle hold-

ing the pigment (the gelatine) that is acted upon and not the colouring matter. That being the case, it is manifest that the greater the thickness of the gelatine the greater will be the intensification obtainable. Therefore, when dealing with feeble negatives the object should be to get a high relief in the image, and this is the point that will now be dealt with.

For making transparencies from negatives of, we will say, an average type, nothing can be better than the special transparency tissue made for the purpose. But for very feeble negatives that require to be intensified afterwards it is not the best, since, in consequence of the large amount of pigment it contains, the light cannot penetrate deeply into the film. With such tissue there is always very little relief. If two prints be made from the same negative, the one on the "special transparency" tissue and the other on one with little pigment, such as some of the portrait tissues, and if the two be developed on glass, it will be seen that the one, though dense in the image, has little or no relief, whereas the other will be more or less in high relief, though it will not be so dense as regards colour. Seeing that it is only the gelatine that is acted upon by the intensifying agent it will be obvious that the one with the strongest relief is the one that will yield the densest picture when intensified. If the two pictures be now put into a solution of permanganate of potash, which is the simplest, and at the same time the best intensifier, for a few minutes, and then washed, it will be found that the thinner print has gained considerably in density while the other has changed but little. If the permanganate is allowed to act for longer the thinner transparency will go on gaining in depth, while the other will remain very much as it was at first, and in the end the thin picture will become the stronger. The strength of the permanganate solution employed is of very little moment—the stronger it is, the quicker is its action; ten to twenty grains to the ounce of water is a good proportion to use.

From what has been said it will be recognised that as the high-lights of a carbon transparency are, practically, bare glass, there is nothing in them to intensify; hence, within certain limits, any amount of vigour may be obtained by intensification—in fact, far more than is ever required in practical working.

Only the permanganate of potash has been mentioned as an intensifier, but there are several others that can be used, and various colours obtained. For example, if the transparency be put into a one per cent. solution of nitrate of silver until the film is thoroughly permeated, then slightly rinsed, and afterwards flowed over with the ordinary acid pyro developer (as used in the collodion process), with a few drops of nitrate of silver solution added, the picture will be intensified, and be of a pleasing warm brown tone suitable for lantern slides. If the transparency be immersed in a solution of a salt of iron, say, the perchloride, then rinsed, and afterwards treated with a weak solution of gallic acid, a strong velvety purple-black will result. By varying the iron salt, and following it with pyrogallol acid, infusion of nut-galls, logwood, etc., a great variety of tints may be obtained. By first treating the transparency with a solution of bichromate of potash, and then with one of acetate of lead, a yellow colour results, owing to the formation of the yellow chromate of lead in the film. Many other colours may be obtained by means that are analogous to those employed in the dyeing of fabrics.

DEATH OF A HEANOR PHOTOGRAPHER.—At Heanor last week Mr. Abner Grainger, aged 58, residing at 16, High Street, was found dead in the dark-room of his studio. It appears that the deceased had been suffering from heart disease.

## ENLARGEMENTS IN "OIL" BY THE BROMOIL AND OZOBROME PROCESSES.

[The following article by M. F. Dillaye, in which is described the writer's work in oil enlargements, appears to be written in ignorance of the work of Mr. Welborne Piper in this country and of his first publication of these processes in the "Photographic News." M. Dillaye's full text, which we slightly abridge from "La Revue de Photographie," does, indeed, refer to the cognate work of Mr. Howard Farmer, but not to the more recent English publications.—Eds. "B.J."]

THE first operation in the use of bromide prints for the oil process consists in the application of a bath of bichromate after development. As to the use of a fixing bath immediately following, it would appear that such a bath does more harm than good. On the one hand, if by fixing we remove the undecomposed silver bromide contained in the gelatine film corresponding to the portions not affected by the light, we produce a great decrease in the volume of the gelatine film. This decrease of volume can be experienced only in the direction perpendicular to the plane of the paper, seeing that the film is in strong adherence to the paper, and will be so all the more as the silver image favours its adhesion. On the other hand, if these same unaffected portions have lost little or much of their elasticity in the course of development, owing to the fact of the developer forming a trace of oxidisable matter by direct contact with the air, there will be fissures to a greater or less extent, and the contraction due to the bichromate will not be even. For this reason it is better to keep the enlargement unfixed before subjecting it to the action of the bichromate bath.

It next remains to decide whether, the film having been bichromated, it should be immediately bleached or first allowed to dry. Experience certainly points to the choice of the second alternative. On drying the film in diffused light the film closes up and the bichromated image appears to sink more intimately into the gelatine. We are thus led to the following *modus operandi*:—The bromide enlargement is carefully developed with a solution not liable to oxidation, such as metol or diamidophenol. The print should be perfectly clean without a trace of veil or fog—that is to say, with all detail in the half-tones and high-lights, and with no choked-up shadows. It is not necessary that it should be as vigorous as if it were to be kept as a bromide, but it is important that it should be a fogless print of a full range of gradation. After development the print is well rinsed from all traces of the developer, and placed in a dish containing a saturated solution of potassium bichromate or ammonium bichromate—no appreciable difference can be discovered between the two salts. Here it is left for from five to ten minutes, according to its strength. If, through incorrect development, it has been obtained too strong, it may be left in the solution for fifteen minutes. The print is then hung up to dry after attaching to its lower edge a strip of papier Joseph in order to draw off the excess of bichromate solution and render the drying more regular. It must be borne in mind that, as the print is still unfixed, all these operations must be performed in the yellow light of the dark-room.

The print having dried, it is placed, still in the dark-room light, into a bleaching solution, either of lead ferricyanide or potassium bichromate and hydrochloric acid. The respective formulæ are those of Eder and Toth, and are as follows:—

### Lead Ferricyanide Bleacher.

Lead acetate .....	4 gms.
Potassium ferricyanide .....	6 gms.
Water to make .....	100 ccs.

### Bichromate Bleacher.

Potassium bichromate .....	10 gms.
Hydrochloric acid (pure) .....	30 ccs.
Water to make .....	100 ccs.

The latter is preferable to the former, and is the one which I

employ exclusively. Bleaching takes place very quickly, almost instantaneously—in fact, quite instantaneously if the print has not been dried between bleaching and immersion in its bichromate bath.

The bleached print is put in running water to wash until a trace of bichromate is removed and the print is perfectly white. This requires about fifteen to twenty minutes; and when the state of the print has been secured, the latter is fixed for about ten or fifteen minutes in a 10 or 15 per cent. solution of hyposulphite or in a 15 per cent. solution of ammonia. It is then finally washed in the usual way, and is ready for inking either immediately or after drying.

A hint as to whether the insolubilisation of the film has been partial or complete in the different manipulations may be gained by gradually raising the temperature of the wash water to 30 or 35 deg. If the image swells enough to show all the details of the relief of an etching, it is certain that it will take the ink in the after-process.

All the experiments made so far show that it is not possible to exceed a certain degree of inking, namely, one more than is sufficient for oil work by those who use muslin, rubber, or eraser, but not enough for those who wish for a facsimile of the negative with the minimum of intervention by hand. It would appear that inking, after being pushed to a certain point, cannot be taken any further whatever one may do. The ink which is applied comes off in the cleaning-up, whatever kind of ink is used, and that of a soft kind is more commonly used than hard. I cannot say whether this is due to the thinness of the gelatine film or to some other cause. Before saying more on this point I must come to the alternative method of preparing an enlargement from a bromide enlargement by transfer.

The so-called double transfer papers are obtainable in greater variety than bromide papers, and I judge that even when they are coated they contain more gelatine than bromide papers. Moreover, the method which has just been described gives only one print from the bromide enlargement, whilst by working by transfer a number of copies can be made, as in the ozobrome process. This latter process has already been suggested by M. Puyo, and possible means of preparing a surface ready for pigmentation. M. Puyo has also confessed his inability to employ it successfully. The failure would appear to be due to the lack of information on the preparation of the bromide print, the composition of the bleaching solution, and an exact method of procedure. All bromide prints are not suitable for the process. It is sometimes necessary to modify the composition of the bleaching solution, and there are certain practical items in the working method which should be adopted.

In order that a bromide should give a good transfer—the same may be said, for the oil process—it is necessary that it should be pressed deeply into the gelatine of the transfer paper. This kind of transfer is given by a bromide in proportion to its own gradation embraces a wide range of silver deposit, and secure a print of this kind a particular manner of development has appeared best to me. It may be called a step-by-step method (*développement par étapes*).

The enlargement is made on a vigorous brand of bromide paper—say the Lumière B—and a sufficient exposure given for the parts of the negative, which latter is placed in the carrier, to be wrong way round. It is then placed in clean water to render flaccid, the water poured off, and a developer of acid diazo



enol poured over it. The formula may be that recommended Balagny for papers, or one of the numerous others.

In working with papers without a tendency to curl, this preliminary soak is not necessary; in fact, it is best to dispense with it when the paper will permit, and apply the developer to dry print. For in this case the developer will at once penetrate the gelatine film, and, as I will mention in a moment, will the production of a suitable silver image.

As soon as the outlines of the image are seen in shadowy action, scarcely perceptible on the paper, which should be for two or three minutes' immersion, the developer should be poured back into the measure and the print rinsed under tap for an instant, in order to remove the developer adhering to the surface. The dish containing only the wet print is then stood on one side, and the image allowed to continue to develop only by means of the developer retained on the gelatine. At the end of a certain time the whole picture appears, but still weak and pale. The print should now be placed again in the developer, the latter allowed to act for two or three minutes, again rinsed off, and development continued as before by means of the quantity of reagent retained on the gelatine. Thus step by step a perfect image regarding details, values and total strength is built up. The process can be readily followed by holding the print up to a dark-room lamp, as when developing a negative. The use of acid amidol allows of this being done without fear of veil. The print is fixed in the usual way, employing for preference a neutral bath as generally directed for the ozobrome process.

It is a good plan to pass the fixed print, whilst still saturated with the hypo solution, for a few seconds into a weak ( $\frac{1}{2}$  to 1 per cent.) solution of potassium ferricyanide, only to lighten it, but to ensure the absence of any veil in the high-lights, which, despite the intermittent washings, might have been caused during development. The total absence of deposit on what should be a pure high-light is of the greatest importance. It is then washed in the ordinary way, and placed to dry.

The transference of the picture to a double-transfer paper, "Fer à cheval," is done as follows:—

To 1 litre of water 1 cc. of pure nitric acid is added.

The following separate solutions are prepared:—

	Mix in the proportion of	Add water in the proportion of
ss. bichromate, 6 per cent.	5	5, 10, or 15, according to the effect desired or time of contact.
ferricyanide, 9 per cent.	5	
bromide, 6 per cent. ...	5	
potash alum, 5 per cent. }	-5	
acetic acid glacial, 2.5 cc. }		

The bromide print is plunged for a few moments into the nitric acid solution, and the surface lightly gone over with a swab of cotton wool, with the object, if the washing has not been absolutely complete, of destroying any traces of hypo. This elimination of hypo is important, since the fixing bath contains ferricyanide, which, with the least trace of hypo, would form a reducing mixture, and would prevent the ink to take irregularly.

Thus cleaned, the print is washed free from acid by immersion for five or ten minutes in clean water.

The oxidising bath given above is then poured on to the print, either as above given or diluted. The proportion of alum given above is an average, and answers in the majority of cases, but it can be varied from .2 to 1. The more the proportion used, the more active is the action of the solution in preventing the diffusion of the chemicals into the body of the film, and therefore the finer and cleaner the results. A very weak oxidising bath produces the same results as a stronger bath if the time of action is sufficiently prolonged, and it is an advantage in the case of large prints to employ a weaker solution for the sake of its evenness of

action. It may be said that if a bath used neat required fifteen minutes for its action, dilution five times will mean that it must be used for half an hour, a dilution of ten will entail a time of one hour, and a dilution of fifteen, two hours (other things being equal) to produce an identical result.

6. Before proceeding to immerse the double transfer paper in the oxidising bath, a piece of stout white blotting-paper, a little larger than the double transfer paper, should be placed in a dish of plain water so as to absorb water fully, and be then hung up to drain.

7. The oxidising bath being at a temperature of about 15 deg. C., or lower (10 deg. C.), if possible, the double transfer paper is immersed, avoiding air-bubbles, and allowed to remain for four or five minutes or more. The bath is then returned to the bottle, leaving the double transfer paper, well drained, on the bottom of the dish to absorb all excess of liquid.

8. During this time the bromide print is withdrawn from the water and laid flat on a sheet of glass, gelatine side in contact with the glass. The back is then firmly and evenly pressed with a squeegee to express the excess of water as completely as possible.

This and the preceding part of the process—viz., the complete absorption of the bath by the paper—should receive careful attention, since it is found that much better contact is made when there is no unabsorbed liquid on the two surfaces.

9. The bromide print, having been thus surface-dried, is removed from the glass plate, which is quickly cleaned, and the bichromated paper then laid upon it, gelatine side down. The bromide print is then gently lowered upon it, film to film, by first placing the edges in contact and then lowering the other portion. A few passes of the roller squeegee are then given to make the contact good.

10. The sheet of white blotting-paper, which has been draining during this time, is now taken and laid upon the whole, and caused to adhere with a stroke or two of the squeegee. The object of this last application is twofold: First, the oxidation of the gelatine takes better when the papers are damp; secondly, the blotting-paper provides an excellent means of judging of the period of contact necessary.

At the end of a certain time the white blotting-paper over the whole area corresponding with the bromide print becomes of a pale yellow colour, the depth of the colour increasing with the time of contact. As soon as the tint appears, it is certain that the bromide print has been penetrated by the bichromate bath, a point which corresponds with full exposure in the ordinary oil process. The longer the tint is left to deepen, the greater the degree of "exposure." Those who prefer to work with a full- or under-timed exposure in the ordinary oil method can consult their preferences when working by the above plan, and will soon learn to recognise the point at which to arrest the operation.

11. When the period of contact comes to an end, the blotting-paper is removed, and the bromide print gently raised and placed away by itself. There is usually no difficulty about this, owing to the moist state of the papers, but should there be any, the two papers should be placed for an instant in cold water, and then stripped apart. In all cases the bromide and transfer paper should be placed in separate lots of clean water, and there washed until completely deprived of the bichromate. It is a good plan to use tepid water for this purpose (30 deg. C.). The bichromate is removed more rapidly and the image swells more strongly than it otherwise would, so much so that it presents the appearance—it is all the better for this—of an etching.

If, in the case of a large print, the aim is to produce a certain granular effect, the print, on coming out of the warm water, should be dipped in quite cold water, or left to soak therein for a time. When thus chilled the gelatine instantly reticulates and becomes covered with a small, fine, regular grain. The dodge may be made use of in some cases.

The bichromated print having been perfectly cleared of yellow stain, may be pigmented at once, or put aside to dry for nigmenting at a later time.

As for the bromide, much, little, or none of which may be visible, it is re-developed in full daylight, and will be thereby restored to its original condition. After washing, it is ready for a repetition of the process.

The above operation, if carefully carried out with a bromide

print without fog and free from every trace of hypo, permit of as ready inking of the transfer paper image as when the surface is prepared by direct exposure to light. If contact has been very prolonged, the only ink which is suitable is the very hard No. 1 ink of Lorilleux, which must therefore be mixed with some soft copper-plate ink, and frequently this latter alone is the most suitable, and works well without medium.

FRÉDÉRIC DILLAYE

#### MR. WELBORNE PIPER ON THE ABOVE SUGGESTED METHODS.

M. Dillaye's methods of preparing prints for pigmenting are very interesting, but it is, I think, apparent that his first method is not quite so convenient or so rapid as the bromoil method practised in this country. His remarks on the degree of inking possible seem to suggest troubles that we do not meet with very often. As a rule there is no difficulty in obtaining contrast, even without the aid of "muslin, rubber, or eraser," if a good bromide print existed in the first instance, and M. Dillaye's suggestion that the possibilities of inking are strictly limited seems to show that his method is not as effective as it might be. He seems to depend solely on the bichromate bath as a hardening agent. That is to say, his print is treated in very much the same way as a "carbograph" print. The bleacher he favours is not a hardening bath, and it is very doubtful if the plain bichromate bath is nearly as powerful as the combined hardening and bleaching bath that we ordinarily use. It is quite possible that the use of a plain bichromate bath before the application of the regular bromoil bleacher might add to the toughness of the image. It does affect the image in some way, as I pointed out a short time ago in reference to sulphide toning, and it is therefore worth trial in the bromoil process. It is a little difficult to follow M. Dillaye's theoretical arguments in support of the view that the hardening bath should be used before fixing. I have found no difficulty in getting a fixed and finished enlargement into perfect condition, and it certainly seems to me that this is a far more convenient method of working.

The second method given by M. Dillaye is for all intents and purposes the ozobrome method. This more or less failed with the old ozobrome manner of working, as it was found very difficult to preserve the details in the high-lights. It was impossible to rely on success, but the new method of ozobrome as now advocated by Mr. Manly seems to have got over this trouble. M. Dillaye's success with the transfer method

probably depends on the nitric acid bath which he commences with, and advocates for the purpose of hypo elimination. far as I can see this simply takes the place of Mr. Manly's bath, and possibly M. Dillaye has mistaken the effects to want of acid to the formation of a silver solvent of the nature of Farmer's reducer. The hypo present in the worst case may be very minute in quantity, and the bichromate must be disposed of it before it has any chance to act as a solvent, therefore it does not appear as if the eliminating action of the acid can be of any consequence.

M. Dillaye seems to think that the transfer method is preferable to the direct one because a number of prints can be made from one bromide print. But this bromide enlargement has to be specially made, as it must be reversed, and if one has to make one bromide enlargement, one may just as well make half a dozen. They will take very little more time, and the finished preparation of half a dozen bromoids from one will be a much quicker operation than the making of half a dozen successive transfers from one print.

It is noticeable that in neither of M. Dillaye's methods does he hint at the use of acid for assisting in the preparation of the image. He actually uses it in both cases, but in the case he refers to it as a hypo eliminator, while in the other he simply states that the bleacher containing the acid is preferable, and that he employs it exclusively. It would appear that he has omitted to note the importance of acid in both bromoil and the ozobrome processes. Possibly it has occurred to him that it may assist in the hardening process in some obscure fashion, and the fact that it does do so perhaps be as much of a surprise to him as it was to me when working out the bromoil process. Even in the carbograph process acid is used. It is applied for the purpose of destroying the developer, but how far it affects subsequent hardening is a matter of doubt.

C. WELBORNE PIPER

## THE PHOTOGRAPHY OF COLOURED OBJECTS IN PRINCIPLE AND PRACTICE.

[The following article, which will be completed in a succeeding issue, is composed of several chapters from a book by Dr. O. K. Mees, to be issued under the title of "The Photography of Colour." Dr. Mees' treatise so well explains matters in practice of orthochromatic photography that frequently present difficulties, that by permission of his firm we quote from advance sheets of the book. The full text of the latter we would recommend to the perusal of our readers, for the sake of the chapters on portraiture, landscape, reproduction work, and coloured objects. Messrs. Wratten and Wainwright will shortly publish the volume at a nominal figure.—Eds. "B.J."]

### On Orthochromatic Screens.

The facts which we have considered will point to some of the conditions which an orthochromatic screen—i.e., one which is to produce a greater approximation to the distribution of sensitiveness of the eye than is possessed by the plate—must fulfil. In the first place, the function of an orthochromatic screen is to absorb the blue, and it must not absorb the green, or, if panchromatic plates are used, the red. This disposes at once of two types of screens which are still to some extent in use.

*The Brownish Glass Screen.*—This screen absorbs some of the blue, but it also absorbs a great deal of the necessary green, and

even some of the red, so that it is of small practical use and requires quite unnecessary increases of exposure.

*The Green Screen.*—This screen has been recommended on the ground that practical trial proved it to give exceedingly good rendering. The actual fact is that a green differs from a yellow in the absorption of the red; consequently, if it is used with a plate which is not sensitive to red, the effect of a green screen is identical with the effect of a yellow screen, while if used with a plate that is sensitive to red the green screen does to some extent the advantage obtained by using a red-sensitive plate. Since also these green screens usually have a consid-



ption in the green itself, they increase exposure to an unnecessary extent, and are therefore inadvisable.

r screen, then, must be yellow, but it is possible for a n to be yellow without having the correct absorption. The n which absorbs the violet-light will be yellow, but it may mit the ultra-violet, and in this way a screen of apparently depth may be less satisfactory than a lighter screen having re complete absorption of the ultra-violet.

orthochromatic screen should as far as possible entirely b the ultra-violet, but it should not completely b any of the visible violet or blue. It may absorb the le violet and blue to so great an extent that the photo- tic effect of the particular plate which is being considered be equal to the visual effect of those colours. If it absorbs too completely a deep violet will appear as black, which ly is not what is intended, and a screen should therefore e too sharp-cut in its absorption.

ffection on the statements already made in this article show that the idea of adjusting a light screen to a particular is not really a feasible one at all. It is often stated that ular screens are adjusted to particular plates, but except for very strong, fully correcting screens which are occasionally this is not a fact, and a screen which is satisfactory for commercial orthochromatic plate will be equally satisfactory ny other, assuming that no attempt is made to *completely* et either. Since a screen which completely corrects the ary orthochromatic plate involves at least twenty times the al exposure, it is clear that the light screens of commerce ot be said to be adjusted to the plate in any real sense. actual curves produced by imposing the Wratten Panchro- e plate behind the three K screens are shown in the next tration (Fig. 13).

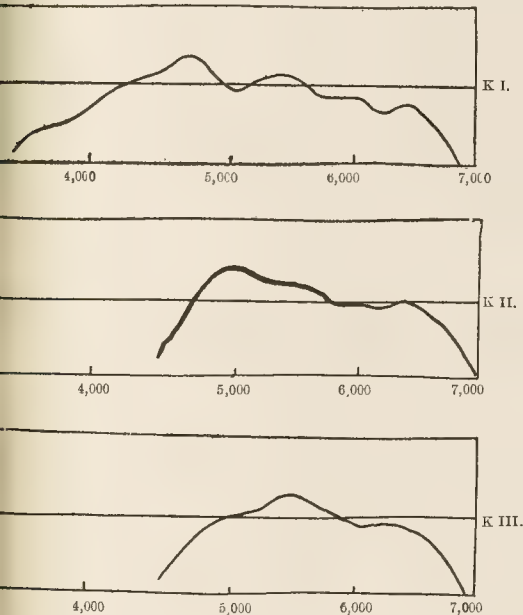


Fig. 13.—Wratten K Screens on the Panchromatic Plate.

will be seen that with the light K 1 screen about half of whole effect of the plate is in the blue, about 1/3 being in green and 1/6 in the red. With the K 2 screen the red and are nearly equally divided, while the blue only has about of the effect of the others. With the K 3 the curve approxi- s with the luminosity curve as seen by the eye. Fig. 14

shows the effect of these same three screens upon the "Allo- chrome" plate. The much smaller effect of the screens upon this plate than upon the panchromatic is worthy of note.

### The Rendering of Colour Contrasts.

By orthochromatic photography we intend to imply the use of a fully colour-sensitive plate, such as the Wratten Panchromatic, combined with a filter of necessary strength, to give approximately the same tone rendering as that seen by the eye. It must be remembered, in the first place, that to the eye objects are picked out from their surroundings by contrast, and this contrast may be of two kinds—it may be tone contrast or it may be colour contrast. In the case of tone contrast, if we imagine ourselves to be dealing with a monochromatic scene, the panchromatic plate will render tone contrast within a considerable range as seen by the eye, but in the case of colour contrast the question will require more careful thought. Suppose that we have two objects, the one superposed upon the other, and separated from each other purely by their colour contrast—e.g., a red field containing a patch of green—the contrast between them is marked to the eye, although

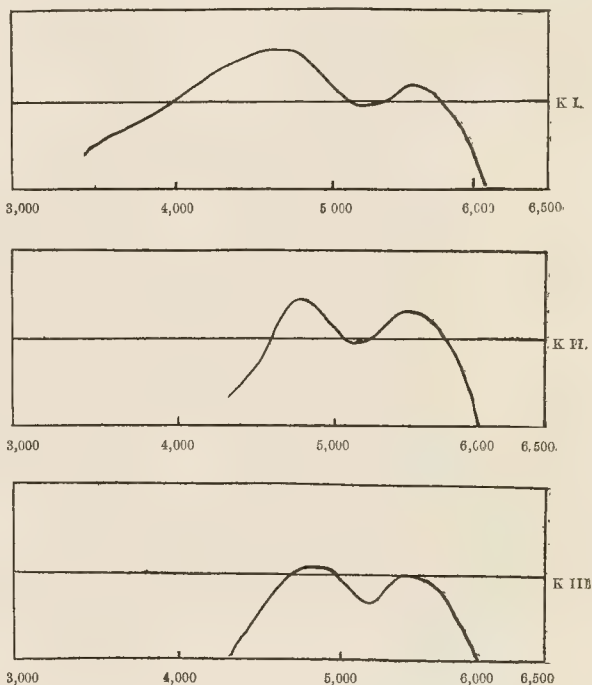


Fig. 14.—Wratten K Screens on Allochrome Plate.

the tone contrast is very nearly nothing—that is to say, the two appear of much the same visual luminosity. If we photograph them upon an ordinary plate both are black to it, and we get our contrast represented by one uniform field of black; the colour contrast has disappeared, and we shall have a totally unsatisfactory rendering of that which we are photographing. If, however, we photograph it upon a green-sensitive plate, then the green will be picked out from the red as brighter, and we shall get a certain degree of contrast of a kind, but if we photograph it upon a panchromatic plate with a K3 screen so that we get a rendering of both colours in their true luminosity value to the eye, the contrast disappears and the colours are represented by a uniform field of grey.

What, then, must we do to obtain a satisfactory rendering

of this colour contrast? Clearly it is not possible to render colour contrast accurately in monochrome so long as we retain the rendering of correct luminosity values for our colours, and consequently we must sacrifice the correct rendering of either the red or the green. If we use a lighter filter or a green filter, the green will appear the brighter and the red the darker; if we use a deep orange filter the red will be brighter, the green darker; and which we shall do must be governed by circumstances. As a general rule, if we must correct wrongly for the rendering of colour contrast it is usually better to over-correct towards the red, since red is a strong colour, while green is a weak. For example, in a field of yellow corn of a deep yellow colour we may have poppies standing out which are nearly as bright as the corn, and it is necessary to decide whether we shall render them as brighter than the corn, or as darker. Probably on an actual measurement of luminosities they would be a little darker than the corn, but remembering the way in which the strong red attracts the eye, it would seem that a more faithful rendering would be given by over-correcting and rendering the poppies as brighter than the corn. Again, the top of a yellow haystack against a deep blue sky may give a result, with perfect orthochromatism, where the haystack is indiscernible from the background. Here, again, I personally should be inclined to over-correct, though the individual worker must decide for himself. A thing to guard against always is the danger of basing one's consideration of monotone rendering upon photographs; few people have been trained in engraving, and photographers are apt to take their conception as to the tone value of bright green grass, for instance, from photographs, which invariably show it as dark, if not black. Frequently in a spring landscape the hedges and grass are almost the brightest things in the whole landscape, and they should clearly be rendered as light greys, but so uniform is the belief among photographers that grass is black, that a rendering as light grey will almost always provoke the comment that the picture was over-corrected.

The most important case of colour contrast occurs in the copying of pictures, and for this purpose I some time ago advised a special method, which it is desirable to explain here.

This method depends upon the use of tricolour filters, the plate being exposed first through one filter and then through another, in order to get the desired colour rendering result. It is first necessary to remove a common misconception which one frequently finds repeated in text-books and the technical press, namely, that the effect of printing from the three tricolour negatives on one piece of paper would be to give an orthochromatic result. This would give an isochromatic result—that is to say, one in which all colours are rendered of equal strength independently of their visual brightness. This results in an excess of brightness in the red and blue, especially in the blue, and insufficient brightness in the green, the whole colour rendering taken this way being wrong. Suppose that we put a set of filters in front of our lens fitted in a slide-past holder, so that we can expose the plate through the three filters in succession without removing camera or lens. Then we may give an exposure through the three filters in proportion to their ratio upon that plate. Supposing, for example, that we have a plate and a set of filters such that the blue requires six times the normal exposure, the green requires twelve times

the normal exposure, and the red requires eighteen times unscreened exposure; if we give through the blue twice normal exposure the plate will be one-third exposed. Now through the green four times the normal exposure; the plate is now two-thirds exposed. And now superpose on this exposure through the red screen of six times the normal exposure. We have now a negative combining our three colour negatives in one, but it will not be correct rendering at all will give all blues much too light, and greens too dark, and results will be unsatisfactory. With the "Wratten" filters plate, owing to the fact that the green transmits a certain amount of blue, correct colour rendering is obtained by giving two-thirds of the exposure through the green and one-third through the red. Thus, in the example just given, where ratio of exposures for the three filters was 6, 12, 18, the correct rendering would be given, together with correct exposure, giving about eight times the normal exposure through the green, and four times through the red. Since this proportion of the mixed exposures of green and red gives a correct orthochromatic result, we can exaggerate red or green by increasing the exposure of one filter and diminishing the exposure of the other. For instance, if we give 8 secs. exposure through red, and 6 secs. through the green, we shall have exaggerated red at the expense of green; on the other hand, if we give 10 secs. through the green and 2 secs. through the red, we shall exaggerate greens at the expense of reds. If we wish to diminish greens altogether and bring up reds and blues we can use our red filter and blue filter, and so obtain the rendering that we desire by altering the relative exposures through the three tricolour filters.

This method may sound rather far-fetched, but as a matter of fact it has been adopted by some very skilled picture copyists, and in each case where it has been adopted they have, I believe, been perfectly satisfied, and have never gone back to a multitude of yellow screens. A very important point about this method is, that all the while one is working one knows exactly how far one is from correct rendering, so that instead of more or less over- or under-correcting by a screen of which the action is somewhat uncertain, one can say quite definitely, "I have exaggerated the reds in that reproduction 50 per cent. because it was necessary to pick out the red against the green in the shadows"—a statement which is both more scientific and more useful both to the speaker and hearer than a statement such as "I used a rather dark screen for that in order to get better correction."

A word of warning is necessary here as to the quality of the filters required for this. It will be seen that the three images are literally superposed upon one another, and consequently the very smallest shift in any one of these images will produce a double image in the result, consequently a much higher grade of filter is required than for ordinary reproduction purposes. It is not sufficient that the images should be of the same size, but they must actually fall on the same place on the focussing glass. This can only be accomplished by the use of filters cemented in optical flats of the very highest quality, or else by the use of gelatine film alone. It will be a disappointment if I emphasise the fact that what are usually known as "first-class cemented filters" will not do for this purpose.

C. E. KENNETH MEES, D.Sc., F.C.S.  
(To be continued.)

Mr. W. F. MEADOWS, for thirteen years past with Messrs. Newman and Guardia, has now joined the staff of Messrs. Adams and Co., of 24, Charing Cross Road, W.C.

HERR DÜHRKOPF'S FESTMAHL.—The celebration of twenty-five years of portrait photography, which Herr Dührkoop kept with many friends at his studios in Hamburg on October 1, was marked by appreciation of his work in England. This took the shape of a

small bronze statuette, by Morris Harding, presented to Dührkoop by the following friends of his in London:—A. H. P. George E. Brown, E. O. Hoppé, F. J. Mortimer, W. H. Smith, Tilney, and H. Snowden Ward. The statuette, which is a reproduction of one exhibited at the last Royal Academy, was presented on behalf of the above donors by Herr Wolf-Czapek, editor of "Photographische Industrie."



## A SIMPLE LENS-CALCULATOR.

An easily made appliance, available for automatically solving numerous questions in photographic optics, particularly those problems of a practical kind that occur almost every day in the average photographer's work, may not prove unacceptable to those who do not care to be perpetually consulting tables or recalling algebraical formulæ. It can be used, among many other purposes, for finding what focus supplementary lens is required to alter the focal length of an existing lens to a given extent; estimating the focal length of combined lenses; ascertaining the principal focus of a lens; calculating the conjugate foci for any given size of enlargement or reduction with a given lens; or for obtaining the ratio between the size of image and that of the object with any extension and distance of the camera. It consists of two parts: a rectangular scale divided into 10th in. squares, and a combined ruler and protractor. These may be made from moderately thick Bristol board. To prepare the scale (Fig. 1) draw carefully a true rectangle, which may

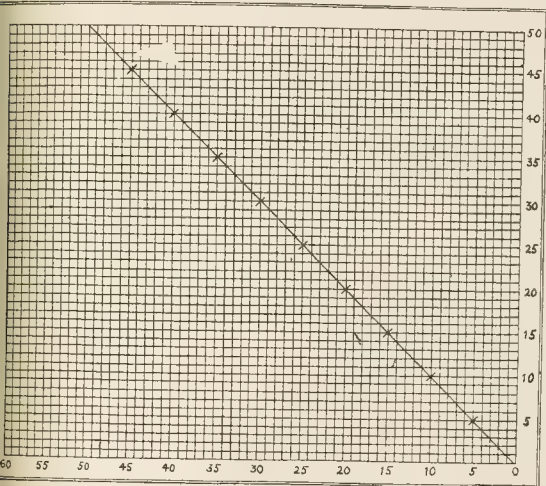


Fig. 1.

conveniently measure 6 in. by 5 in. Divide this all round into tenths of an inch, and join the lines to form squares. Then number every fifth division on the bottom horizontal line and the right-hand vertical line, starting from the right hand bottom corner in each case. From the same corner draw a diagonal line at an angle of 45 degrees.

To prepare the ruler and protractor (Fig. 2) set out the straight

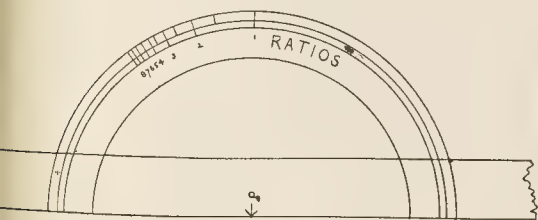


Fig. 2.

portion about 10½ in. long and mark the centre O. From O as centre, describe a semicircle of about 4 in. radius, and an inner one of about 3 in. radius, the exact radii being immaterial.

Then cut out very carefully round the outer lines and remove the space in the centre. To mark the scale of ratios on the upper semicircle, proceed as follows: Place the centre O of the protractor on the diagonal line of the rectangle, and adjust the lower edge of the ruler so that it cuts the horizontal scale and the vertical scale at identical figures—for example, 10 and 10, or 20 and 20. Mark with pencil where the semicircle cuts the diagonal line and number it 1. To obtain the ratio 2, still keeping the centre of the protractor on the diagonal line, place the ruler so that its edge cuts any figures on the horizontal and vertical scales which are in the proportion of 2 to 1, as, for example, 16 and 8. Mark where the semicircle cuts the diagonal as before. Obtain the other ratios up to 8 in the same manner, in each case first placing the centre of the protractor on the diagonal, and then setting the ruler on figures that stand to each other in the same proportion as the required ratio. The divisions may now be ruled from the edge of the semicircle towards the centre and neatly inked in, as shown.

In its simplest form, the lens calculator is now completed. It may be further elaborated, as will shortly be described, but it will perhaps be better first to explain the method of making and using it which involves the fewest complications. A selection of problems and the manner of solving them will be given, sufficient for most of the purposes the ordinary worker is likely to require, although it must not be thought that the possibilities of the appliance are thereby exhausted.

### Problem 1.

It is required temporarily to convert a 30 in. focus lens into one of 18 in. focus. What focus supplementary lens will be required?

Fig. 3 illustrates the solution of this problem. Place the edge

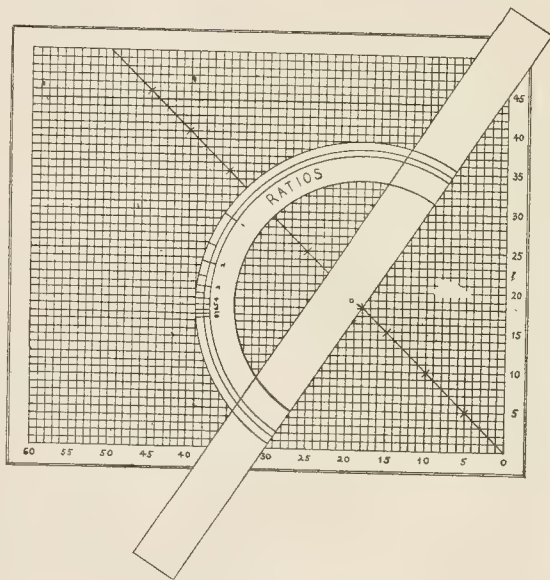


Fig. 3.

of the ruler against the focus of existing lens on the horizontal scale. Set the centre of the protractor at the point on the diagonal where the two lines from 18 meet. The other end of the ruler will then indicate the required focus of the supplementary lens on the vertical scale—i.e., 45 in.

**Problem II.**

A lens of 24 in. focus is to be placed in contact with another of 12 in. focus. What will be the focal length of the combination?

Place the ruler on 24 and 12, on the horizontal and vertical scales respectively, the centre of the protractor being on the diagonal. The lines touching the centre of the protractor will indicate the focus of the combination—i.e., 8 in.

**Problem III.**

The image on the focussing screen is one-quarter the size of the object, and the distance from the object to the lens centre (major conjugate) is 30 in. What is the focus of the lens?

Place the centre of the protractor on the diagonal, and set the ratio 4 on the semicircle also on the diagonal. Move the protractor along the diagonal line, still keeping the centre and ratio on this, as before, until the ruler touches 30 on the horizontal scale. From where the centre of the protractor cuts the diagonal may now be read the focus of the lens—i.e., 6 in.

**Problem IV.**

With a 10 in. focus lens, it is desired to enlarge from half-plate to whole-plate. What must be the distances between easel and lens and negative and lens?

Set the centre of the protractor on the diagonal at the point where the lines from 10 on both the horizontal and vertical scales meet. Set the ratio 2 of the protractor also on the diagonal. The ruler will then indicate the two distances required where it cuts the horizontal and vertical scales—i.e., 30 in. and 15 in.

The following table shows at a glance the procedure for the above and similar problems. If the ruler and the centre of the protractor, or the two ends of the ruler, are placed on any two of the factors as directed by the upper line, the third factor in a line with these will be indicated automatically. Where there are two factors in any column, numbered 1 and 2, first place the ruler or protractor on No. 1, and then, keeping it parallel,

set it on any one of the factors numbered 2, in the line below. The other two factors in that line will then be indicated. In every case, the centre of the protractor must first be set on the diagonal line.

Horizontal scale.	Diagonal line.	Vertical scale.
Focus original lens.....	Required focus .....	Focus supplementary lens
Focus of first lens.....	Combined f. cua.....	Focus of second lens
Major conjugate (distance object to lens centre)	Focus of lens .....	Minor conjugate (distance image to centre lens)
No. 2. Major conjugate .....	No. 1. Ratio of enlarge- ment or reduction.	No. 2. Minor conjugate
No. 1. Size of object .....	No. 2. Focus of lens ....	No. 1. Size of image
No. 2. Major conjugate.....	No. 2. Focus of lens .....	No. 2. Minor conjugate

The simplest form in which the lens calculator may be made having been described, various improvements, which any one with a little mechanical skill may introduce, will now be suggested. A slot may be cut along the diagonal and the protractor pivoted at the centre to move freely along the slot. This saves a good deal of adjustment, and by turning the protractor on its pivot conjugate foci for any lens and any ratio are instantly obtained. If this is done, the rectangular scale should be mounted on a wooden block, while the protractor may advantageously be of metal or celluloid.

Another improvement is to introduce a scale of degree on the lower semicircle of the protractor, graduated to show the angles made by the ruler with the horizontal scale, and to graduate the ruler itself in tenths of an inch, starting each way right and left from the centre of the protractor. This is a refinement that perhaps will have no immediate use to the ordinary worker, but would enable the optician or geometrician to make many interesting experiments. To graduate the protractor to show the angles the ruler makes with the horizontal scale, divide it as usual into 180 degrees; but, instead of numbering these in the ordinary manner, mark 45 degrees as 0, 50 degrees as 5, and so on. If this is done correctly, 90 degrees should come on what would otherwise be 135 degrees.

A. LOCKETT.

## THE "MIRROR" ART EDITOR ON PRESS PHOTOGRAPHY.

MR. HANNEN SWAFFER, art editor of the "Daily Mirror," opened the Thursday lectures at the London County School of Photo-Engraving, at Bolt Court, off Fleet Street, London, on October 1. "One of the very best, the most serviceable, of all the talks we have had," was the comment of a quite enthusiastic auditor at the close, and the gathering endorsed the acknowledgment. We have not space for a long and detailed report. Besides, Mr. Swaffer answered questions in the intimacy of this small lecture room with a freedom and a preciseness which arose from his knowledge that the answers were not for general publication. Herein consists a great part of the value of such gatherings, that there is often the freest information on points as to which ordinary business men are very reserved—information which those who do not take the trouble to attend these free lectures will vainly hope to find presented to them in some report. Scrupulously respecting the lecturer's wish in regard to his more private intimations, there is yet a good deal to report. We gather that not only do at least nine London dailies regularly use illustrations, but in the provinces "The Manchester Guardian," "The Manchester Daily Despatch," "The Manchester Courier," and "The Leeds Mercury" are among notable users of illustration plates produced through the photographer's art. One great daily of the provinces has just engaged a news photographer of its own. Twelve London weeklies give whole pages to pictures. There is an ever increasing demand for clever young fellows who know how to take a news photograph; and if they bring a good subject around to the "Mirror" office, they will have it fairly examined (this, by way of answer to one in the audience who said Editors would

not trouble even to look at some things which were offered). The editor of a daily paper cannot, by Mr. Swaffer's testimony, reckon on more than about forty photographers in England who can be considered fully competent and reliable for his purpose. A railway disaster occurs in an important town; there are, say, four professional studios and forty or fifty amateurs in that town, but not one of the whole company can grasp the fact that there is newspaper market for views of the disaster. The editor must race his men off in a special train for any remainders of good views. A newspaper photographer always earns four or five pounds a week if he knows his way about; and there is no photographer of any sort—running a studio, or a chemist's shop, or what not—who could not earn useful occasional sums through newspapers. There is no first-class Press photographer (according to Mr. Swaffer) at the moment in Birmingham, or Liverpool, or Newcastle-on-Tyne, or Edinburgh, or Plymouth, or Folkestone, or in scores of other places. Birmingham should yield a good man, adventuring there, £5 or £6 a week straight off. "Photograph people in motion—doing something," Mr. Swaffer advises; avoid stiffness. Do not take a big group unless it is historic; unless you are at Windsor and have such an opportunity as Messrs. Downey lately had of taking a group of the King and Kaiser, and the King of Spain, and ever so many heirs to thrones and other royalties. It seems to be the irritating experience of some editors that camera men even when they do send a group of some interest are apt merely to string off the names without any distinguishing numerals whereby the editor is to identify this or that great man—or greater woman. When stalking a prominent man track



down in all legitimate ways, till you have him playing a part in some scene of human interest. Lord Milner is taken at hospital simply standing, in company with a doctor and a nurse. Lord Milner the same day goes on all fours and gives a little rent a back ride in one of the wards; and a snap of that kind would have had real value. The hospitals wanted publicity and there probably would have been no extraordinary Cerberus for the insistent camera man to get past.

Halfour at the golfing ground would have been followed by a man with the press photographer's instinct and—who knows?—might have been snapped just after the golf-ball struck him. We might, at least, to be as alert as that golf-ball. Another urging Mr. Swaffer's: let the press photographer make sure of his facts. Indeed, get all the facts you can. Let the editor strike what he deems unimportant. The paper will pay well for what it does use. Let them be sure, especially names. Use a good quick working lens. The photographers of the "Mirror" the Goerz-Anschutz camera is a very good one for the purpose. Develop the negative to get strong contrasts of black and white. Blue-tint tints are no good in press photography, unless the paper is superior to that ordinarily used for news or the printing is very good. Some waste time and money in costly silver prints; they are not only unnecessary, but frequently not nearly so good as many bromide prints. Buy a good enlarging lantern so that you need not be wasted in waiting for negatives to dry. Mr. Swaffer thinks the amateur may find it well in many cases to work with a photographic agent; there are eight or nine good agents in London, he says. Send by train when you can—for the wireless telegraphic transmission of photographs by the method of

Korn or Knudsen, is not yet available for young Mr. Snapper down at Takenham. If you have something good, send by train and see that it really does get on the train, especially if it is something which you are sending from abroad. Wire time the train arrives and be precise as to station. Be precise all the time. Mr. Swaffer is pathetically awaiting now at the "Mirror" office some fine photographs obtained under all sorts of difficulties by good men sent over to the Continent for the purpose. After a year or two's waiting for the train he becomes less hopeful and in any case the first freshness of the subject tends to wear off. By the way, Mr. Swaffer had much of great interest to say as to his visit to Madrid in charge of photographers at the time of King Alfonso's wedding. On the point of time—a photograph of a boxing-match between Tommy Burns and Gunner Moir was at hand at twenty to twelve (midnight). In exactly an hour and a half—at ten past one—the machines were turning out at 80,000 an hour copies of "Mirrors" containing plates of this match. In the interval the plate was developed, the print made, sized up, touched up, engraved, locked in the forme and stereod about twenty times. Ten shillings and sixpence seems to be the ordinary payment by a paper using a photograph. But fancy prices—large sums—are paid at times for sole rights of pictures of rare interest. There are compensations in addition to the money gain; and Mr. Swaffer tells great tales of the adventurous life and almost unlimited travelling from one interesting region to another which is the happy fortune of the press camera man who has a good reputation. As to the extent of the art, in the "Mirror" office alone about 500 pictures a day are examined as a rule, and about forty are used.

## THE BRITISH JOURNAL ALMANAC—PAST AND PRESENT.

With only one week before the closing of the forthcoming "British Journal Almanac" for the press, it appears peculiarly opportune to cast a glance backwards upon the first issue of the "Almanac," forty-seven years ago. The following is sent by an interested correspondent, who recently spent an hour or two inspecting this 1861 "Almanac."—Eds. "B.J."]

"thy shadow never grow less!" The good Oriental regards any action in bulk as an indication of misfortune, but we more numerous Westerners are apt to think otherwise, and are therefore grateful for the reduction in size of the "British Journal Almanac." How many of my readers, I wonder, are familiar with the first issue—that of 1861? The pages, of which there are six of editorial matter and forty-two of advertising, measure 4 x 2½, so that with its thin paper covers it might well fulfil the purpose mentioned in the "prefatory notice," which reads as follows:—

Within the limited time and space placed at my disposal I have endeavoured to throw together such matter as I conceive may be of utility to the photographer when travelling, or otherways out of reach of the ordinary works of reference.

The Calendar will remind the reader of the days, whilst in other part he will find the places and hours of meeting of the various British Photographic Societies, together with a list of their officers.

To Mr. George Shadbolt I have to render my thanks for furnishing me with the formulæ and summary of the best ascertained method of manipulating the Collodio-albumen, Taupenot, and other therm processes.

The size adopted is such as to allow of our Almanac being placed in any photographer's pocket-book, whilst by interleaving the almanac it may be employed as a diary.

No separate features in the present "Almanac," the "Epitome of Progress," and the "Recent Novelities," are embodied in one article, Retrospect of our Photographic Year." The prologue, as it opens quietly enough:—

As an ancient patriarch in solemn moments looks back upon his generation, thinking of those within his ken who have sprung into vigorous existence, progressed steadily on their life's way, and are about to close their eyes, whilst others have sunk upon the road, after a short-lived, feverish existence, but of great promise, so do we, as we prepare to toll the passing-bell for another year, in contempla-

tive mood love to scan the pages of our Journal, to see what progress we can record, what processes hold their own, and what have been superseded in the struggle for life.

But, apparently not content with merely witnessing and noting the struggle, a very vigorous kick is soon given to accelerate the departure of some of the processes. "Sources of light" are under discussion:—

Photographers have been asked, by a recently formed company, to adopt the limelight, as very suitable for their purposes, when the sun is sulking and skulking; but as their patent only involves an improved form of lime holder and burner, the characteristics of the light being the same, from past experiments we see no reason to believe that it is in any way suited for such purposes, being remarkably deficient in actinic rays. Again, Professor Way's light. . . . the cost and trouble entailed in the production of this source of light is very considerable . . . therefore Moule's light seems to be, as yet, the only practical means of obtaining artificial light for photographic purposes.

From all of which it will be seen that the correspondence as to the varying merits of different illuminants, appearing not long ago in the "B.J.," is but another instance of repetition in history.

Under the heading "Lenses," we are referred to "a description of a lens of peculiar construction, invented by Mr. Sutton, under the name of the 'Panoramic Lens,'" which is damned with the faint praise that

it is not likely to come into general use, though it might be of service for military and naval purposes. . . . Mr. Dallmeyer has introduced a "new triplet achromatic lens," which, in the hands of Mr. Downes, has afforded the most satisfactory results. . . . Mr. Heath's view at Tavistock, covering a plate 12 by 10 in., well to the edge, was taken by a lens of only 10½ in. focus, being put forth by Mr. Ross as yielding pictures 8½ x 6½, whilst the landscape taken extended over a depth of two miles, yet all is well in focus.

Thus were the great reputations of these two names built up.

In "Chemicals and Apparatus" we are told that—

The experiment of Mr. John Williams deserves the attention of all honest-minded manufacturers, and the consideration of photographers generally, as showing how many of the evils that afflict a collodionised plate may be traced to nitrate of silver, prepared without sufficient care, but which they may have purchased as the purest article obtainable, namely, the recrystallised nitrate of silver.

The professional of to-day often refers regretfully to the "good old days," when competition was not so keen, forgetting that in those times the technical side of the business was frequently a source of worry that is almost impossible to realise by the worker accustomed only to the apparatus and materials now supplied.

"Collodion Processes" and "Printing Processes" each receive a paragraph, as does also our old friend, which, like the poor, is always with us—"The Nature of the Photographic Image." An interesting paragraph on the "Applications of Photography" winds up with a description of the process of Paul Pretsch, together with the statement that—

As the illustrations referred to were worked at the steam platen and cylinder machines, it will be seen that we have put this process to a severe test, and that, considering it is quite in its infancy, the results are very promising for the future of cheap illustrated educational literature.

It was not foreseen that printed matter other than educational literature would be thus illustrated, and that generations yet to come would find their chief mental pabulum in publications of the halfpenny weekly "Comic Bits" type, in such quantities as to amass for their producers princely fortunes.

The advertising pages also are interesting. The "B.J." itself has one, and except that it was then "Edited by George Shadbolt, and published on the 1st and 15th of each month, price 4d., by Henry Greenwood, 32, Castle Street, Liverpool," the descriptive matter would apply almost verbatim to the "B.J." as we know it now. Among the opticians we find "T. Ross, 2 and 3, Featherstone Buildings, Holborn," while "J. H. Dallmeyer (son-in-law and pupil of the late A. Ross)" makes his announcement from 19, Bloomsbury Street. In but one instance do I see an address which I recognise as being

that at which a business is still being carried on, and that is interesting quarter-page of the London Stereoscopic Co.—

"CARTES DE VISITE,"

20 for 20s.

Photographed by an Eminent Foreign Artist in a most superior style.

LONDON STEREOSCOPIC COMPANY,

54, CHEAPSIDE, LONDON.

Detention 3 minutes. Albums from 12s. 6d. each.

The trade workers of to-day, if they do not figure in the "Almanac," seem to have had no less modest personages to claim their abilities for them. One individual, Mr. Bassano, Regent Street, London, takes a full page on which to say—

Being the only artist who has made the finishing photograph black and white (or sepia) his sole and especial study . . . having organised a staff of artists to assist him . . . he is prepared to retouch photographs in the highest style of finish, with utmost despatch, and at moderate charges. The rapidity and success with which Mr. Bassano works may be imagined from the fact that during the past three years he has finished (highly) upwards of 3,000 portraits, etc., etc.

But this average of but a thousand portraits a year fades into insignificance before that of one J. Alexander, of Halifax—

12,000 portraits, highly finished, in oils and water-colours, J. Alexander and his staff of artists during the past seven years. Portraits beautifully finished in oil or water as follow:— $\frac{1}{2}$ , 5s. 6d.; 4s. 6d.; 5 by 4, 6s.;  $\frac{1}{2}$ , 6s. 6d.; 1-1, 7s. 6d.; 12 by 10, 12s. Satisfaction guaranteed.

Printing is represented in the person of Thos. J. Barnes, of Market End Road—

Printing executed with the utmost care, and at the lowest price consistent with the production of good prints, and the permanency the present state of the art will admit of. Permanency washing guaranteed.

The writers of the trade-workers' advertisements appearing were in the "B.J." at present must verily look to their laurels!

## THE USE OF ORGANIC SULPHUR COMPOUNDS AS SUBSTITUTES FOR HYPO IN COMBINED TONING AND FIXING BATHS.

THE instability of hypo in presence of the smallest quantities of acid and the necessity of completely washing out all hypo in order to ensure the permanence of the print has led us to make experiments with a view to removing these drawbacks attached to the combined bath. In order to find a substitute for hypo for this purpose we had to discover some substance which:

(1) Should easily dissolve silver chloride without affecting the gelatine.

(2) Should reduce the per salt of gold to the state of proto salt—e.g., auric chloride to aurous chloride.

(3) Should combine with haloid salts of silver, as also with soluble silver salts, in such a way as to render these latter removable by washing of water and to keep them undecomposed by a large excess of water. None of the mineral substances possessing solvent properties for chloride of silver, such as ammonia, potassium cyanide, ammonium sulphocyanide, correspond with these requirements, and we therefore endeavoured to find organic compounds which would serve the purpose. The only ones hitherto known to dissolve silver chloride are the thio-ureas and thiosinamine, or allyl thio-urea. Our experiments were therefore directed to these classes of compounds, and we endeavoured to prepare various substitution products of thio-urea,\* such as monoethyl and diethylthio-urea, monophenyl, and diphenylthio-urea, phenylmonoamido, and phenyldiamidothio-urea, monoamido, and diamidothio-urea.

We found that none of these substances, except thiosinamine and

thio-urea, dissolved sufficient quantities of the haloid silver salts to allow of their use in fixing or in combined toning and fixing. We therefore had to confine our attention to these two substances, which one (thiosinamine) has been pointed out by Liesegang as capable of replacing hypo in the combined baths.

Thio-urea, like its isomer, ammonium sulphocyanide (from which it is prepared), dissolves silver chloride, forming a double combination of silver chloride and thio-urea. On evaporation of the saturated solution of the silver chloride in the thio-urea, the compound can be isolated in the form of white shining needles, having the composition of 13 molecules of silver chloride to one of thio-urea and corresponding 95.4 per cent. of silver chloride, whilst the saturated solution of silver chloride in thio-urea contains only 29.8 gms. of silver chloride for each 100 gms. of thio-urea, representing a formula of one molecule of the chloride to 13 of the urea, a compound which has been separately prepared. These compounds are very stable in aqueous solution, and do not produce, as does the double hypsulphite of silver and sodium, silver sulphide, on heating of aqueous solution. Further, they are not decomposed by excess of water as are those containing ammonium sulphocyanide.

Thio-urea reduces chloride of gold as readily as does hypo. One of the drawbacks that it presents is that it cannot be used in a strong solution than 6 per cent. without affecting the gelatine, even in the presence of alum. Moreover, the solution of the haloid silver salt in thio-urea easily decomposes in the presence of alkali forming silver sulphide. In consequence of the comparative weakness of the combined bath in thio-urea the toning should be longer than with hypo, since the solubility of silver chloride is only 1.49 gm. per 100

\* We prepared the substituted thio-urea by the action of aqueous ammonia on the amines and semioles, these bodies being obtained by the action of carbon disulphide on the amines or hydrazines followed by heating with mercuric oxide.



of 5 per cent. thio-urea solution, whilst it is 1.99 gm. in the same volume of 5 per cent. hypo. Thus the toning action should be sufficiently slow in order that fixing may be complete at the same time. Using thio-urea in a 6 per cent. solution, together with a small quantity of alum, the conditions above mentioned are complied with. Not only is the silver salt dissolved without alteration of the gelatine, but the gold is instantly reduced from the auric to the aurous state, and no bodies entering into the composition of the combined baths are precipitated.

There is an essential difference between the action of the thio-urea and that of hypo in a combined bath. An ordinary solution of this kind made with hypo has practically a toning action only when it contains a small quantity of lead salt. In the absence of lead the toning is extremely slow and the tones are reddish. We have already given the theory which we think explains this fact.\*

In the case of thio-urea not only is the lead salt unnecessary for the toning but it is an actual drawback, owing to its alteration of the half-tones of the picture. We have made experiments to find if other metallic compounds when used in thio-urea toning can play the same part as the lead salt in combined baths made with hypo. The bodies which we have examined, excepting only stannous chloride and zinc nitrate, have not shown any positive action. The best results have been obtained simply by using thio-urea, alum, and gold chloride in such proportions that the thio-urea exerts no action on the gelatine and the toning is not so rapid that it is completed before the print is fixed. The following bath has been found to fulfil these conditions:

Thio-urea .....	60 gms.
Alum .....	30 gms.
Gold chloride, 1 per cent. solution .....	60 ccs.
Water .....	1000 ccs.

The time of toning is about six minutes, and the tones obtained are very similar to those produced in the ordinary combined bath. The prints thus toned cannot be washed in ordinary water, owing to the fact that the alkalinity of the latter is sufficient to produce during the washing process a decomposition of the double salt of silver and thio-urea, giving rise to black stains. This can be avoided by washing in distilled water or using ordinary water containing 1 gm. of acetic acid per litre; a larger quantity of acetic acid is liable to affect the gelatine. The washing is complete in six or seven treatments, each of two or three minutes, with the weak acid solution, employing altogether 1 litre for ten 7 by 5 prints.

Thiosinamine has a greater solvent action on silver chloride, but not as great as hypo; 100 gms. 1 per cent. hypo solution dissolve 4 gms. silver chloride, whereas 100 ccs. 10 per cent. thiosinamine solution dissolve only 3.17 gms. silver chloride. Thiosinamine, like thio-urea, instantly decolourises gold chloride solution, and can be used for the preparation of combined baths. Owing to its small solubility it cannot be employed of greater strength than 6 per cent. Water will take up 10 per cent., but a solution of this strength after a time deposits transparent crystals, which appear to be a hydrate of thiosinamine. Like thio-urea, the best tone is obtained without the addition to the bath of any other substance than chloride of gold and alum, the latter in quantity to give a solution of weak acidity. If the solution is too acid the gelatine is affected, and we have been led from these considerations to the following formula:—

Thiosinamine .....	6 gms.
Alum .....	2 gms.
Gold chloride, 1 per cent. solution .....	6 ccs.
Water .....	100 ccs.

Thiosinamine has the same drawback as thio-urea of giving with haloid salts of silver compounds which are readily decomposed by alkalis forming silver sulphide. This fact prevents the use of ordinary tap water for the washing of prints toned with thiosinamine, and the washing needs to be done as indicated above. The result of the above experiments therefore seems to prove that the substitutes for hypo have very little advantage over that substance. Although the silver compounds of hypo are very unstable in the presence of acids, those of the organic substances are likewise in presence of alkalis, and, moreover, have the disadvantages of small solubility and comparatively high price.

A. & L. LUMIERE.  
A. SEWETZ.

## AMERICAN VIEWS OF TWO BUSINESS TOPICS.

[Among the papers and contributions which appear in the "Annual of the Photographers' Association of America," reviewed on another page, are two which we reprint on account of the peculiarly practical subjects on which they touch.—Eds. "B. J."]

### A LESSON IN BOOK-KEEPING.

STOPPING to see a friend of mine, who was doing a very good business in a small studio, we began to discuss the question of business and expense. I found in our discussion that his system of account was not an accurate one. I devised a plan for him which I have since given to a few other friends in photography, who have told me that it was a great help to them, so I thought it a good plan to present it here. The idea is simply this: get a three-column cash book, and on the left-hand side use one column for the cash taken in during the month, on the other or right-hand side place your expenses divided into three parts; use the first column for all general expenses, the second for all your salaries (and, by the way, pay yourself a reasonable salary each week, placing it in this column also), and the third for your stock bills of every kind. At the end of each month add up the columns, which will show at a glance what the different expenses cost you, then carry the salary and general expense totals out underneath the stock totals, and in red place the difference to make the final footing of the right-hand page or expense side balance with the final footing of the left-hand page or cash side. This difference in red ink will show you the cash balance or profit of your studio each month. If you follow this plan closely you will soon discover the losses in your business. It will teach you to notice which expense runs highest.

There are only two ways for your studio to earn more money, either get a better price for your work, and make the figures on the left-hand side of your cash book larger, or the cost of production less, and make the figures on the right-hand side of your cash book smaller, hence the balance or figures in red ink will be larger, thus making your profit larger. If you use this division of expense account and general plan, it will enable you to see where your leaks are and many a dollar will be saved by your studying these interesting figures, for, having made a start in this direction, more divisions will follow, and in a short time a broader plan will present itself, and your eyes will be opened so that you may more readily see the difference in the business that pays from the kind that does not.

G. W. HARRIS.

### SOME THOUGHTS ON ADVERTISING.

It has been said that "The fellow who tries to attract business without advertising is like the fellow who throws his sweetheart a silent kiss in the dark. He knows what he is doing, but nobody else does." Every man in any kind of business at this day and age must admit that advertising pays. The question for each to decide is what way is the best for his own business. Of course, there are extremists among us who insist that photography is a high art or a profession, and self-respecting members should not advertise any more than painters, artists, lawyers, or doctors. One can afford to maintain that position if he has an independent income sufficient to meet expenses until perchance the public discovers that he has something it wants. Most of us, however, are not thus situated, and from the start have to make a living from the business—then it is a business and should be treated as such. For myself, I like to be classed as a business man, and the world in general now accords the good business man as high a place in its esteem as any members of the so-called learned professions. As all successful business men advertise, I see no good reason why I should not and several reasons why I should, so I do, and I think it pays. I refer more particularly to newspaper advertising.

I differ from most advertising experts in their opinion that prices should be quoted, for I never quote prices on photographs in my ads. In the first place, there being no standard of sizes or quality of work, to quote prices means nothing to the average reader; and in the second place my prices are invariably higher than those of my local competitors. The chief object of advertising in our business, as I figure it, is to create a demand, to keep up the public interest in photography so that when anyone speaks of photographs in your locality they will think of your studio first and foremost. It is true that the photographer's best ad. is work of high quality, work that people show with pleasure and pride, but good newspaper ads. supplement and often clinch the impression produced by the

\* Bulletin de la Société Chimique de Paris, 1902.

former. People see a good picture of a friend and pronounce it a fine portrait; they may even be urged to have some taken themselves and say they will "before long," but straightway proceed to forget it. The newspaper ads. don't let them forget, and by the mere force of mental suggestion frequently applied, accomplish their purpose and bring in the customer who finally feels that it is the only thing to do.

Short ads., right to the point, well set up and perhaps illustrated with cuts, but at least located so that they will be read, I find will bring in many an appointment during dull times and increase the number in busy times. Of course, what is good for the person in one locality frequently does not work well for another elsewhere, and methods that succeed in small towns probably would not do in large cities. I am located in a town of only 10,000 inhabitants, but with as many more within easy reach. I have not put out tickets nor made special prices for more than ten years past. I believe that the reason ticket men are able to sell so many tickets is because the great majority of people really want photos, but have not got around to having them made. The main thing is to get them to "do it now." This can be done with more dignity by judicious newspaper ads. than in any other way I know of. I also get out a neat folder at least once a year, which I mail to all probable customers, keep my show windows attractive and quality of work up, but the immediate results of a vigorous campaign of newspaper advertising during the past few months, when business generally has been greatly depressed, have been so gratifying to me that I thought it might be of interest to others.

C. S. BATEHAM.

## Photo-Mechanical Notes.

### Celluloid-Linoleum Electros.

A GERMAN inventor named Michael Sandman, of 60, Elisenstrasse, Dresden, A., has taken out a patent for a method of preparing electros of line or half-tone blocks, in which the matrix used consists of a layer of celluloid and one of linoleum in intimate contact. The specification (No. 13,238, 1908) describes the process as follows:

A sheet of linoleum, of a thickness of from two to four millimetres, made smooth by mechanical means, such as calendaring, is intimately combined with a thin layer of celluloid of similar dimensions and of about from 0.15 to 0.30 millimetres thickness. This is effected by moistening a sheet of celluloid with a heated liquid solution of 30 gms. of camphor to a litre of 95 per cent. spirit and then placing it with its moist surface upon the sheet of linoleum, which has undergone preliminary heating. Both sheets are then subjected to considerable pressure.

According to an alternative method of procedure the combined celluloid and linoleum sheet may be produced by pouring by any suitable means a thin layer of hot liquid celluloid upon the linoleum sheet and then subjecting the sheet first to hydraulic pressure and afterwards to rolling to obtain a smooth surface.

From a composite sheet thus prepared the block or plate is then produced by means of suitable cutting and graving tools, in such manner that the face of the block is formed in the layer of celluloid, and its depth in the soft mass of linoleum. By means of this process defects inseparable from the celluloid process as heretofore carried out are entirely obviated. In the first place it may be observed that from the combination of the layer of celluloid with the foundation of linoleum there is produced in the mass in which the electro is cut a certain elasticity, in consequence of which, when the new process is employed, there is obtained at once a satisfactory covering of ink and a soft toned print, advantages which, in the case of an electro produced by the celluloid process or a printing or half-tone plate of the kind heretofore usual, has only been obtainable by means of overlays, the adjustment of which has required considerable time.

SOUTH LONDON PHOTOGRAPHIC COMPANY, LIMITED.—Capital, £2,000 in £1 shares. Objects: To carry on the business of photographers, photographic enlargers, and reducers, art dealers, dealers in photographic materials and scientific and optical instruments, etc., and to adopt an agreement with F. G. Waghorne. Private company. The number of directors is not to be more than three.

### FORTHCOMING EXHIBITIONS.

- September 11 to October 24.—Photographic Salon. Sec., Reginald Craigie, 5A, Pall Mall East, London, S.W.  
 September 17 to October 24.—Royal Photographic Society. Sec., J. McIntosh, 66, Russell Square, London, W.C.  
 October 13 to 17.—Southampton Camera Club. Hon Sec., S. G. Kimber, Oakdene, Highfield, Southampton.  
 October 14 to 17.—Rotherham Photographic Society. Sec., H. C. Hemmingway, Tooker Road, Rotherham.  
 October 22 to 26.—Hove Camera Club. Entries close October 15. Sec., W. Chater Lea, Cransley Lodge, Dyke Road Avenue, Brighton.  
 October 27 to 31.—Heaton and District Camera Club. Entries close October 12. Secretary, George C. Urwin, 24, Tenth Avenue, Heaton, Newcastle-on-Tyne.  
 October 28 to 29.—Watford Camera Club. Entries close October 22. Sec., W. Branch, 100, High Street, Watford.  
 November 2 to 11.—Portsmouth Camera Club. Entries close October 24. Sec., F. J. Lawton, 20, Clarence Square, Gosport.  
 November 4 to 7.—Hackney Photographic Society. Entries close November 2. Secretary, Walter Seife, 70, Paragon Road, Hackney, N.E.  
 November 20.—Redhill and District Camera Club. Entries close November 7. Sec., J. Paterson, Ness House, Redhill.  
 November 23 to 26.—Lancaster Photographic Society. Sec., J. Holt, 11, Fern Bank, Lancaster.  
 December, 1908, to January, 1909.—Kiew International Photographic. Sec., S. T. Horovitz, Technical Society, Kreshchatik, 10, Kiew, Russia.

1909.

- January 6 to 27.—Northern Photographic (Manchester). Entries close December 11, 1908. Sec., S. L. Coulthurst, Broad Oak Road, Worsley, Manchester.  
 February 13 to March 13.—South London Photographic Society. Sec., H. Creighton Beckett, 44, Edith Road, Peckham, S.E.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for Patents have been received between September 21 to September 26:—

- DEVELOPMENT.—No. 19,782. Improvements in machines for developing, fixing, and washing photographic roll films. George Beattie Stoolie, 41, Reform Street, Dundee.  
 TANK DEVELOPMENT.—No. 19,845. Improvements in, and relating to, devices for use in tank development of photographic plates or films. Alexander Bruce, 96, Buchanan Street, Glasgow.  
 DEVELOPING APPARATUS.—No. 20,092. Improvements in photographic developing apparatus. Horace Handley O'Farrell, 61, The Avenue, Kew Gardens, Surrey.  
 COLOUR PHOTOGRAPHY.—No. 20,111. Improved screen or plate for direct colour photography and process for manufacture of the same. Société Anonyme des Plaques et Papiers Photographiques, A. Lumière et ses Fils, 31, Bedford Street, Strand, London.  
 ENLARGING.—No. 20,227. Improvements in photographic lantern enlarging apparatus. Arthur Gray Pickard, 6, Bank Street, Manchester.  
 SHUTTERS.—No. 20,292. Improvements in photographic shutters. William Savidge Akerman, 4, South Street, Finsbury, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

FILM DEVELOPING APPARATUS.—No. 1,327. 1908. A tank is fitted with a series of vertical compartments capable of supporting, edge



wise and separated from each other, a number of partially doubled films. The upper and lower ends of the compartments are arranged to allow of free circulation of the liquid and of the upper ends of the films to be withdrawn.

The apparatus comprises a holder A for the films and a receptacle B for the necessary solution. The holder A comprises a series of tubes 1, which may be formed by bending sheet metal blanks into the required shape, as shown in Figure 2. In this construction these tubes have two straight walls which form radii of a circle, the third wall being semi-circular, so that in cross section each tube roughly resembles the sector of a circle. One end of each tube is preferably provided with a projecting portion 4, whereby the stand

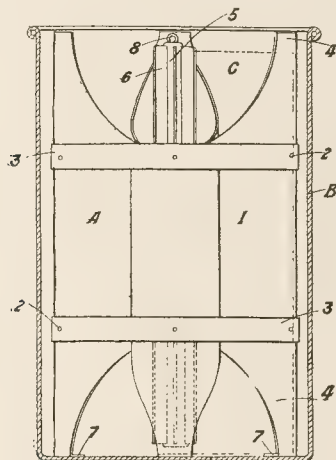


Fig. 1.

as a whole is provided with a series of supporting legs, or in some cases, where it is desired to render the stand reversible, these projecting portions may be formed at both ends of each tube. At the extremities of these legs are arranged stops 7, which, in the present instance, are formed by turning over and inward the end of the leg.

The object of the legs is to support the stand with the lower ends of the tubes well above the bottom of the receptacle or tank, a space being formed whereby through which the body of the liquid may circulate freely within all the tubes.

As the films are inserted in a rolled position their adjacent or vertical edges may have a tendency to curl or be otherwise deflected inwardly against each other. This action results in the sensitised surfaces of the films becoming scratched; moreover, the films no longer assume their proper erect position. It is to this

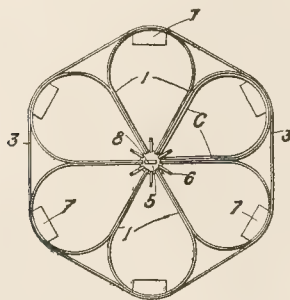


Fig. 2.

end that the radiating flanges, 6, are provided, since, when the up-right edges of the film which are adjacent to the central member of the stand tend to curl inwards, they are prevented by means of

the radiating ribs 6, and are so secured in their correct position and are prevented from coming in contact with each other. Kodak, Ltd., Clerkenwell Road, London, E.C.

**VIGNETTERS.**—No. 27,419. 1907. The invention consists of a vignetter in the form of a shallow case of cardboard, etc., with a large aperture in the upper cover. This cover carries a sheet of card or other material which can be moved in either direction, up or down, or across the negative or printing frame, and has in it an aperture smaller than that in the main cover. The shallow sides of the case fit on a printing frame, and the cover can be kept at a given distance from the frame. This is done by means of a strip of paper held to the under-side of the cover, and adapted to stand at different angles in relation to the cover. It is moved about a stiff hinge (e.g., of cardboard), and according to the amount this part is moved about its hinge (the lower edge of which will rest on the top of the printing frame), so will depend the distance the part containing the vignetting aperture will be above the negative. The movable part containing the vignetting aperture may be adapted to slide in between two sheets forming the cover of the appliance, the natural friction between the surfaces being sufficient to hold it in the position to which it has been adjusted, and at the same time enabling free adjustment to take place. William Lawrence Parkinson, Commutation Row, Liverpool.

## New Trade Names.

**GRAPH BRAND.**—No. 304,314. Nitrate of silver, chloride of gold, chloride of platinum, and other chemical substances used in manufactures and photography. Auguste Désiré Pennellier, trading as D. Pennellier and Co., 56, Gray's Inn Road, London, gold and silver refiner and manufacturing chemist. June 29, 1908.

**'XTRA SPEEDY.**—No. 305,462. Photographic dry plates. Wellington and Ward, The Elms, Shenley Road, Boreham Wood, Elstree, Herts, photographic material manufacturers. August 14, 1908.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Colouring Carbon Prints.

Carbon prints, if made in light pigments, may be coloured by either of the three general methods—namely, pastel, water colours, or oil colours.

In applying the dry or "pastel" colours (writes Mr. F. G. Palmer, in the "Amateur Photographer" for October 6, 1908), stumps are used, and with these a delightfully velvety appearance is obtained. The colours should not be applied thickly; one of the first maxims in colouring photographs must be, "Be moderate." A dusting of colour, which can be ultimately increased if necessary, is put on, and if there be any tendency to blow off or to come away too easily, the surface of the print can be made slightly more adhesive by gently breathing upon it. The edges of the colours may be readily fined off or left sharp, according to the exigencies of the particular case.

Water colours lend themselves without any difficulty or preliminary treatment to this form of work. The carbon surface is admirably suited to the process, and each successive shade may be worked on very easily and simply. Though not necessary, a sizing solution is sometimes applied, consisting of—

Isinglass .....	4 gm.
Water .....	100 cc.
Methylated spirit .....	100 cc.

This should be mixed in a flask or jar, and warmed in a saucepan of hot water until solution is complete. It should be put on the print with a wide, flat brush while still fairly warm, and, of course, allowed to dry before being used. This sizing is only applicable to papers which are very absorbent or have an extremely rough surface.

## New Books.

R. Dührkoop und die Neugestaltung der Bildnisphotographie  
Berlin: Otto von Holtzen.

A book about Dührkoop ought to be interesting, at any rate if it is illustrated as this is by his own work. And the excellent reproductions are the really interesting part of this volume, which is issued apropos of Dührkoop's completion of a quarter century in photography. The worst of the text is that it says a good deal of what other people in England and America have said of Dührkoop, but not very much of the man himself. However, we admit that Dührkoop to English eyes, and probably to German, is something very illusive. He has no fixed principle, no standard of beauty and style. To-day he delights in this, to-morrow in that, and he convinces you that he is a master of whatever method he may be using. Therefore, we must accept the text of the writer (Herr K. Wolf-Czapek) as the best account, short of personal acquaintance, which it is possible to give of the lively Hamburg photographer.

"Traitement des Residues Photographiques." By L. Mathet.  
Paris: Charles Mendel. Fr. 60.

Mr. Mathet's brochure of 30 pages quotes on its first page the figures of Davanne and Girard as to the small proportion—3 per cent. only—of the silver in the printing paper, which remains in the finished print, but it must not be forgotten that this result was obtained in 1864, and applies to albumen or salted paper. The modern emulsion paper does not yield so large a proportion of the precious metal to the residue collector, nevertheless M. Mathet's directions may be commended to those who prefer to have such instruction in the French language. The chapters deal with the recovery of silver from plates and papers, and of gold and platinum from papers.

"La Revue de Photographie." Paris: Le Photo-Club de Paris.  
Fr. 12.

In this volume we have the promised continuation of the monthly magazine carried on for some two years by a committee of the Photo-Club de Paris, composed of MM. Bourgeois, Bucquet, Demachy, and Puyo. The monthly issue has become yearly, but we hope will not become more infrequent still. The present volume evidences the same editorial policy which characterised the monthly—that is to say, there are plenty of examples of French and other pictorial work, and a few technical articles: not a word on the illustrative contents, which, like the cheese of the low comedian, is permitted to speak for itself. The pictures include some delightful work of MM. Demachy and Puyo, landscapes of the accomplished M. Missonné, some portraiture of Baron de Meyer, the strong sunshine effects of Guido Rey, and, in short, a pretty good representation of the Frenchmen and some other of the pictorial workers.

TELEPHOTOGRAPHY.—The current "Telephoto Quarterly," published and edited by Captain Owen Wheeler, from "Strathmore," Prince's Road, Weybridge, contains some most interesting notes and illustrations, showing the scope of instantaneous telephoto work in the way of seaside figure studies, wild birds, and distant architecture. The editor's article is on telephotography with small cameras. Our contemporary (5d. post free) continues to succeed in its task of recording practical progress in telephoto work.

## CATALOGUES AND TRADE NOTICES.

IS AN ANASTIGMAT WORTH ITS PRICE?—An oft-put question finds a most readable and instructive answer in the current issue of "The Prism," the tiny magazine of optics which Messrs. A. E. Staley and Co., of 19, Thavies Inn, London, E.C., publish in a semi-private way—that is to say, they send it to any one sending them one penny stamp for the postage. The current issue is particularly worth having.

BROMIDE ENLARGEMENTS.—Messrs. A. King and Son, trade artists,

of High Street, Littlehampton, send us their newly issued price list for the coming season, which we may recommend to those seeking good work in bromide enlarging and other branches at a moderate price.

## New Apparatus, &c.

A CIRCULAR TABLE SLIDE RULE.—Our contemporary, "Knowledge," has just issued a calculator for multiplication and division which should be useful to those having much computational work. It may be used for general calculations, for conversion of weights and measures, coinage, etc., or for the use of any special factor which its possessor has need to employ frequently. It is the design of Major B. Baden-Powell, and is issued at 3s. 6d. (postage 3d.) by "Knowledge," at 27, Chancery Lane, E.C.

THE NOS. 2 AND 2A "COMPOUND" SHUTTERS.—The new models Nos. 2 and 2A, of the "Compound" shutter have been fitted with alternating locking device for time and instantaneous exposures. Before the lens when fitted to shutter is a small plate bearing the initials "M. B. T." To work the shutter for the instantaneous exposures marked on the speed dial, the small button or knob should be placed at "M." In such case the setting lever on the right-hand side of the shutter should be set, and the speed dial adjusted to any of the speeds marked on this latter, when a pressure on the finger-release gives the exposure. If the automatic working of the shutter is required to be brought into play, the small knob or button should be placed at "T" or "B." In this case the finger-release or ball and tube may be used, when either time exposure or ball and tube can be made, or, when set at "B," bulb-exposure with finger or ball and tube. In this case the lever for setting for "time," marked on the speed dial, cannot be used, the shutter cannot be set when the button is placed on "T" or "B," nor can the finger-release for instantaneous work control when the button is set at "M." The alteration and improvement has been made to prevent accidental exposures, which sometimes take place when the finger-release inadvertently pressed, causing accidental exposure. By the improved construction this is entirely obviated.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

SATURDAY, OCTOBER 10.

Liverpool Amateur Photographic Association. Excursion to Widnes.  
South London Photographic Society. Excursion to Croyhamhurst.

MONDAY, OCTOBER 12.

South London Photographic Society. "First Step in Architectural Photography." C. H. Oakden.  
Bradford Photographic Society. "Suggestions on Improving Prints, from Pictorial Standpoint." W. H. Womersley.

TUESDAY, OCTOBER 13.

Royal Photographic Society. Ordinary Meeting for the Election of Members.  
Birmingham Photographic Society. "Oil Pigment Printing." Demonstrated by J. H. Gear, F.R.P.S.  
Leeds Photographic Society. Social Evening.  
Hackney Photographic Society. "Carbon." Demonstrated.

WEDNESDAY, OCTOBER 14.

Leeds Camera Club. "Gloucester Cathedral." Harold Baker.  
Wimbledon and District Camera Club. "Development of Dry Plates." H. Matthews.  
Croydon Camera Club. "Autotype Carbon Process, and Oil Pigment Paper." A. C. Braham.

THURSDAY, OCTOBER 15.

Melbourne (London) Camera Club. "Old Printing Processes, etc." L. W. Ayer.  
L.C.C. School of Photo-Engraving, Bolt Court. "An Artist's View of Current Reproduction." F. C. Tilney.  
Liverpool Amateur Photographic Association. "The Caucasian Alps." Hermann Woolley.  
Handsworth Photographic Society. "Astronomical Photography." Frederick Smith.  
Richmond Camera Club. "Various Systems of Development." P. G. Payre.



## Commercial & Legal Intelligence.

A RECEIVING ORDER has been made in the East Kent Bankruptcy Court against Benjamin Knight (carrying on business under the name of Ben's Studio), photographer, of 58, High Street, Folkestone.

## Correspondence.

\* Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

\* We do not undertake responsibility for the opinions expressed by our correspondents.

### THE "GREAT CONGRESS" OF PHOTOGRAPHERS.

To the Editors.

Gentlemen,—Your wonderful report of the above would have afforded much better reading had you adhered to the truth, and a fair criticism, favourable or otherwise, would have been esteemed; but when it becomes needful for you to pen an article which bristles with fabrications it is only becoming that you should give the true facts to your readers, and offer an ample apology to those whom you have so basely traduced—namely, the promoters of the "Great Congress."

To take your article seriatim, you first take exception to the fact that the names of the committee were not published. Was this needful? I think not.

Your next point is, "It commences a hopeful paragraph with, 'The following trains will be run . . . ' but gives no trains." The actual paragraph reads: "Special excursions are being run by the following railway companies. For full particulars the reader is referred to the companies' bills and announcements, the trains mentioned being only a small proportion of those being run." Then follows a list of eight railway companies, beginning with the G.N.R., and no less than eighty-six cities and towns from which excursions were run are mentioned; an entirely different reading to that which you in your great kindness of heart put before your readers.

Now, as to your quibble as to the use of the word "congress," which appears to be your great stumbling-block. Wherein was this wrongly used? According to "Nuttall," a congress is a meeting of envoys, commissioners, deputies, etc. (please note the "etc."): Now, we had in attendance at the meeting envoys, deputies, or whatever other name you like to call them, from Liverpool, Northampton, Birmingham, and other large towns. Thus is the use of the word justified.

Had you stopped your quibble at this point I should have treated it with the silent contempt which it most undoubtedly deserves, but when you go on to say that the name of one of the gentlemen was used without his sanction and against his expressed wishes, I throw the lie back in your throat, and tell you that every gentleman whose name was used gave his full permission before it was added to the list; nay, more, I hold the written replies to my letters giving this permission, and these letters are open for either you or any other person to inspect if they are sufficiently interested to call at my address. Criticise as much as you like, but be fair, be honest, and, above all, be truthful.

The fact is, Gentlemen, that the "congress" was too great a success for you to fully appreciate it; you had, I suppose, never before heard of a gathering of over 1,500 photographers and their friends; you had never before heard of over 950 cameras being used at one place on the same day; you had never before seen between 500 and 600 photographers sit down to tea at one and the same time, with other sittings to follow.

Next time the L. and P. think of organising a "great congress," shall most certainly suggest that my committee first obtain your kind permission; but perhaps you were very short of cheap copy

last week and wanted to fill your paper, for I notice that the "congress" was worth nearly a page to you, fabrication as it was.

As to the report in the "Morning Post," with this I had nothing to do. The L. and P. certainly does not number 1,000 members. I wish it did, but it still grows.

I was once blest with two grandmothers, one of whom used to say to me, "What is worth doing at all is worth doing well," and the other taught me that "If I could not say what was good of anything to say nothing at all." What a blessing such grandmothers would have been to you.

I would, in conclusion, ask you to note that there is no "R" in my name, other than that in the word "Ernest."—Yours faithfully,  
ERNEST HUMAN.

43, Whitta Road, Manor Park, Essex.

[It would seem that an unfortunate choice of ancestors has deprived us of the power of refraining from criticism when criticism is needed. The author of the above letter (to go by his last paragraph) should surely exonerate us from blame. There is nothing in our report of last week which was not justified, and we have since reconfirmed what we said as to the twice-expressed wish of one individual not to be announced as a speaker. We withhold from the above letter one paragraph, which is unnecessarily personal.—Eds. "B.J."]

### THE INVENTION OF SELF-TONING PAPER.

To the Editors.

Gentlemen,—In your issue for April 20, 1906, page 319, Mr. D. Bachrach claims to have been the inventor of the now popular self-toning papers. In your succeeding issue, in a leading article, you confirm Mr. Bachrach's claim "to have been the first to have worked and published such a process." Quite recently, however, during a search through back files of the photographic journals, I noted that Ashman and Offord published in the "Photographic News" for July 24, 1885, the addition of auric acid to gelatino-chloride emulsions for "quickenning the toning process considerably." Apparently they did not recognise that subsequent toning was unnecessary; still this note antedates Mr. Bachrach's publication by about three years.—Yours faithfully,  
E. J. WALL.

Ealing.

### COUNTING SECONDS.

To the Editors.

Gentlemen,—Your editorial re "Counting Seconds," was very interesting, but though passably musical myself your musical method does not appeal to me as accurate enough. I prefer to stand with feet slightly apart and gently rock from foot to foot; it is quite easy this way to convert oneself into an accurate pendulum. I have often counted to a full minute in this way, quite correctly—to another's testing, I mean, and without seeing the watch-face myself, of course. This is the method I invariably use when testing light by the invaluable "Watkins."—Yours faithfully,  
FREDERICK H. EVANS.

32, Rosemont Road, West Acton, W.

October 2, 1908.

To the Editors.

Gentlemen,—Being a subscriber to your valuable paper, I was naturally interested in your remarks respecting an article of mine on counting seconds by music appearing in the September "Photographic Monthly."

You suggest that a waltz tune would be not so variable in tempo as a march. In this I must beg to differ from you. I may say I have some claim to being a musician, and know several men who earn their living wholly by playing at dances, etc., and they say some people dance waltzes very slowly, whilst others, notably military people, dance waltzes very quickly.

I think you will agree that the two bars drum solo, which precedes the tune proper of a band playing on the march, varies but very little. In fact, I have since learned that the regulations set out in the manual issued by the Army Council for infantry training state that a quick

march (that is, of course, normal march time) should be 120 paces to the minute, that is half a second to each step, or a second between, say, the left foot and the left foot again. The regulations further stipulate that a pendulum, or, in other words, a musical metronome, should be used to accurately time the paces when drilling recruits.

You advocate for quarter seconds setting shutter at bulb and squeeze and relax as quickly as possible. This I do for an eighth of a second. Moreover it depends upon the flexibility of one's hand as to how quickly they can open and shut it. A man who is used to playing the piano would naturally have his hand more lissom than a man who did heavy work.

For half-second you recommend setting the shutter at time and squeeze and relax as quickly as possible. I have tried this, and can give a quarter of a second easily, so I think you must agree it would be much easier and more accurate to imagine the time between two paces in march time for half a second. For both your methods of quarter and half-second I should be giving only half the exposure necessary if I followed them.—Yours very faithfully,

59, High Street, Whitstable, ARCHIBALD H. DODMAN.  
September 29, 1908.

### THE "ILLUSTRATIONS BUREAU."

To the Editors.

Gentlemen,—I notice in your replies to correspondents in last week's issue you state that to the best of your belief the "Illustrations Bureau" is dead. If such a report has reached you, perhaps you will permit me to point out that it is much exaggerated; it is not even in a moribund condition, but at its old address—which you can find in any directory or telephone book—it carries on what is undoubtedly the biggest photographic press business in the world. Its pictures are to be seen in all the important weekly papers and magazines both in the United Kingdom and in every foreign country where photographs are used as press illustrations. Perhaps it is that the gentleman who replies to correspondents does not see the illustrated weekly papers, or he would have seen the "Illustrations Bureau" as the most prominent source of supply.

Believe me, Mr. Editor, we are very much alive.

I remain,

Yours faithfully,

BERNARD ALFIERI,

Illustrations Bureau, 12, Whitefriars Street, London, E.C. Manager.

October 7, 1908.

[We can assure Mr. Alfieri that the error arose from the confusion of the name of the business under his direction with that of another no longer existing, and not from the least doubt in our own mind of the magnitude and activity of the "Illustrations Bureau." Our apologies are due both to Mr. Alfieri and to the querist whom we have unwittingly misled. We cannot visit the office of the "Illustrations Bureau" in Whitefriars Street without feeling that an obituary notice of that business is the most remote of our editorial duties.—Eds. "B.J."]

**PORTSMOUTH CAMERA CLUB.**—The annual exhibition of the above club (formerly known as the Southsea Photographic Society) will be held at 5, Pembroke Road, Portsmouth, from November 2 to 11, inclusive. There will be two open classes, one for prints and one for lantern slides, and in these the awards will take the form of silver vases. Exhibitors at the Southampton and Hove Exhibitions can have their exhibits forwarded to Portsmouth free of charge, and at reduced entrance fees. Further particulars and entry forms may be obtained from the secretary, Mr. F. J. Lawton, 20, Clarence Square, Gosport.

**SCREENLESS PHOTO-ETCHING, LIMITED.**—Capital, £10,000, in 9,900 ordinary shares of £1 each and 2,000 deferred shares of 1s. each. Objects: To carry on the business of printers, publishers, photo-etchers, etc. Minimum cash subscription, 20 ordinary shares. The first directors (to number not less than two nor more than five) are R. Bain, C. Walkden, and C. F. Cazenove. Remuneration, 10 per cent. of the profits available for dividend. Registered office, 5, Henrietta Street, Covent Garden, W.C.

## Answers to Correspondents.

\**All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.*

\**Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.*

\**Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., 24, Wellington Street, Strand, London, W.C.*

\**For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.*

### PHOTOGRAPHS REGISTERED:—

H. S. Franks, 60, West Strand, London, W.C. Four Photographs of Miss Mabel St. Clair.

A. G. Meakes, 12, Victoria Street, Rusholme, Manchester. Photograph of the Manchester New Infirmary.

W. Hampton, 195½ Argyle Street, Glasgow. Photograph of a Wonderful Freak Malformation Child.

ANXIOUS.—T. S. Bruce, 4, Villas-on-Heath, Vale, Hampstead, N.W.

**COPYRIGHT.**—I have some postcard photographs of self and friends, taken while on my holiday in the country by a local man who sells them. My friends want some copies of same larger, which I can do myself. Have I the right to do so without his consent?—**ENQUIRER.**

Unless an order was given for the groups you have no right to copy. If the photographer has, as seems to be the case, the right to sell copies, no one else has a right to copy or enlarge the photographs.

**MERCURY.**—(1) About 1,000 hours' use. (2) New electrodes, which would appear to be necessary, would cost as much as a new tube. Better write A. W. Isenthal and Co., Mortimer Street, London, W. W. M.—We are sorry we have no information beyond that already published.

**LENS QUERY.**—In your next issue I should be pleased if you would say what value a lens might be by Vogel of Philadelphia, half-plate portrait, about 8 in. focus, Waterhouse stops, working at about F5, and working in rack focussing?—**LENS CAP.**

We do not lay ourselves out to value apparatus. Your best way will be to try the lens and then judge the value it would be to you in your business. Its market value is probably a few shillings.

**SPOTTY PRINTS.**—Will you kindly inform us what is the cause of the spots on enclosed prints? The process, roughly speaking, was:—Developer, metol soda, hypo, with a little acetic and alum wiped over with weak ferricyanide, washed well twenty minutes, dried by heat.—**PRINTER.**

The spots are clearly due to want of care in the work. Some particles of foreign substance have been allowed to come in contact with the prints while they were in a wet condition. This is shown by the spots having a well-defined nucleus in the centre.

A. T. W.—(1) If the facts be as stated by you we should say that you were justified in refusing acceptance of delivery of the cards. (2) The firm can, of course, sue you, but whether they will succeed is quite another matter. (3) If you are sued you will have to instruct your solicitor to defend the action. This seems a case that the Professional Photographers' Association could amicably settle for you.

G. Q.—The prints enclosed are certainly about as bad as they well could be to be supplied for sale. You will be quite justified in refusing to accept them. As you have already paid you should demand the money, and negatives, back. If it is refused, sue in the county court.

**LENS QUERY.**—Could you tell me the maker and about the value of the following:—12 x 10 "Extra Rapid Euryscope," iris diaphragms. There is a small brand on the flange (as enclosed sketch); there are only two glasses in the lens (one in front and



at back); the diameter of these glasses is about one inch each and about a quarter-inch thick. Will be much obliged if you can inform me from above description.—E. W. L.

From the description we can tell you nothing about the make of instrument. We can, however, say that it is not what is generally known as an "Extra Rapid Euryscope," and that if it will cover 12 x 10 it must be a very slow one, as the glasses are but 1/4 inch in diameter. Euryscope lenses of ordinary rapidity for 12 x 10 size have an aperture of about 2 1/2 inches, and the extra rapid ones are much larger. The value of such a lens is very small indeed.

INTAGLIO PRINTING.—I should be greatly obliged if you could give names and addresses of intaglio firms who work for the trade in photogravure, and particularly half-tone intaglio, those who are accustomed to do a fairly good postcard or similar print.—R. A. LYNCH.

The Rembrandt Photogravure Printing Co., Lancaster.

CAMERAS.—I see dry plates 6 in. x 4 in. are now in some makers' catalogues. Will you please say whether you know of any camera at size now on the market, and if anything is on foot to introduce as a standard size? The plate, if held in the dark slide by the ends, will cut a full cabinet, and gives plenty of room to centre postcard. Print from a plate taken in a camera that size enclosed. C. W. R. E.

Our notice has not been drawn to cameras of this size, and we cannot name one offhand. We doubt whether the present vogue for the half-plate size will encourage manufacturers of either plates or papers to take up the 6 x 4 size.

W.—If you sold the rights to reproduce to the company the matter is obviously within its rights in disposing of the latter as it sees fit. We cannot see that you have any legal ground for complaint. You must have supposed that the sale of the cards would be by local tradesmen.

P. P. A. (Kathiawar, India).—All gelatine plates are at a disadvantage when worked at a shade temperature of from 100 deg. to 105 deg., unless everything is cooled artificially. You mention that you want plates that will stand 110 deg. Fahr. We cannot say that we know of any makers who would guarantee their plates bear that temperature unless very special precautions were taken. However, we should think that most brands of English plates might, with care, be manipulated at 100 deg. to 105 deg. Fahr. by the use of a bath of chrome alum after the developer or of a chrome alum fixing bath as given in the "Almanac." A bath of formalin before development might help matters, though we fear the high temperature would make its use almost prohibitive.

CLASS BICHROMATE.—(1) Would you kindly tell me whether it is possible to obtain bichromate of potassium in a clear state—that is, colourless, or nearly so—without destroying its properties and union upon gelatine? For a certain purpose I wish to get rid of a strong yellow, but I suppose it is impossible without altering chemical properties. (2) Also, could you tell me how formalin is made (in brief), and whether it is poisonous?—METAMORPHOSE.

(1) It is impossible to do what you want without converting the bichromate into something else—e.g., a chromium salt—but then it would not have oxidising properties. If you require a nearly colourless oxidising agent you might try chlorine water. (2) Formalin is a solution in water of formic aldehyde. The latter is made by the oxidation of methyl alcohol, the vapour of this latter compound being passed, mixed with air, over spongy platinum. Formalin is not highly poisonous, but is an irritant.

FRAM LANTERN SLIDES.—I wish to make lantern slides from printed matter, showing white letters on a black ground (on the lantern screen), and am using process plates direct, afterwards cutting them to lantern size, but cannot get sufficient density without veiling the letters, which should remain almost clear glass. Is it not possible to do this without intensification, as I find any slight veiling is only accentuated by this process? What developer would you recommend giving excessive contrast, and, if necessary, what intensifier?—DENSE.

There is no better developer for this purpose than hydroquinone and caustic soda, as given in the "Almanac" for Thomas's plates. A good plan is to over-develop somewhat and reduce with strong Farmer's reducer, rubbed over on a wad of cotton wool. If this is used until the lines are practically clear when the negative is

laid face down on a piece of paper, it will be best not to intensify, although mercury and ammonia is the best for the purpose, if any be employed. See the article in the "B.J." for July 31.

MRS. J. A. D.—We suggest you apply to one or two retouchers for their charges for similar services. The prices vary, but we should say £1 for ten or twelve lessons, about an average.

LILLY AXWORTHY.—There are many possible causes of spots on collodion paper, and we should advise you to look up the "B.J. Almanac" for 1907, page 786. A very common cause is drying with blotting-paper that has been used before, and is therefore slightly contaminated.

G. H.—The markings appear to us to indicate that the gelatine is decomposing. We have seen similar effects before on old negatives. The only course we can advise is to make a copy of the negative on a fresh plate. We doubt if external damp is the cause, as a properly varnished negative should be quite damp-proof. If, however, the negative is not properly dried before varnishing an effect such as this might be readily produced.

VERITAS.—Such a series of exposures would be impossible, in our opinion, for anyone working single-handed.

P.O.P. TONES ON POSTCARDS.—As I am wanting to do a great deal of publishing postcard work could you favour me with the formula and working instructions for obtaining on bromide cards the effect of silver prints, as obtained by postcard publishers?—TONER.

Most of the commercial toned bromides on the market are done with hypo-alum, the action of which is very satisfactory with a paper suitable for the process.

COPYRIGHT QUERY.—I photographed a cricket club, and to get the privilege I had to give a picture value 25s. to the club, on condition no one else photographed them. I have been selling pictures and also postcards. Now I find somebody has sent a postcard away and got an enlargement done, a shade under my price, and is quite probable they may get a good many more. Will you answer if giving this picture makes my photograph copyright, and can I take action against this photographer?—ANXIOUS (Accrington).

The copyright in the picture is yours, but as you have probably not registered it you cannot take action against anyone. If you register it now you can prevent further copies being made from the picture, though you can recover no penalties for what has already been done.

RESIDUES.—Will you kindly give your valuable information—viz., what quantity of liver of sulphur do I put, say, in 80 oz. of hypo? I save in order to get the sediment (silver), which we want.—VANDYKE.

It is impossible to say without knowing how much silver there is in the hypo. The best way is to add the sulphide of potassium until it ceases to cause further precipitation, then you will know that all the silver has been thrown down.

A QUESTION OF INFRINGEMENT OF COPYRIGHT.—I have bought some (china?) figures at a shop, and intend to photograph them and home-made surroundings, scenery, buildings, etc. They are "made in Germany," and the box containing them is so marked. I intend sending the prints to an illustrated paper. Can I do so without risk of copyright law? I have seen toys treated so, and these are similar ornaments.—TORS.

In doing what you propose you will not be infringing the Copyright Act in any way, and you can, if you like, make the pictures copyright.

STAINS ON NEGATIVES.—We have one or two valuable negatives which, owing to carelessness on our printers' part, were put out printed in a damp state, and consequently are badly stained. Is there any remedy for removing silver stains without injuring the negatives?—S. A. C.

Some stains are very difficult to remove, and some cannot be removed at all. About the best remedy we can prescribe is as follows:—Soak the negative in potass iodide, 200 grains; water, 10 ounces; and, after washing, put into potass cyanide, 300 grains; water, 10 ounces; then rub the film with a fledge of cottonwool. If this does not get rid of the stains try one of the other methods.

BROMIDE.—We will reply to your query next week.

DELAY IN EXECUTION OF ORDER (J. DOUGLAS).—All we can suggest is that you write to the effect that if the new slides are not sent

forthwith you will proceed in the county court for return of the money you have paid and the value of the pattern slides; also for damages for their detention.

**ELECTRIC LIGHT.**—Please advise us through this week's "Journal" on the following:—We propose taking premises for portrait work. The size of studio would be 24ft. x 11ft. x 31ft. 6in. high, and shall have to rely entirely on artificial light. Would the light, viz., 8ft. 6in. be sufficient for producing good work, and should you think that one lamp (we think of having Houghtons' Jandus) would be sufficient, or would it be advisable to have a pair? We are rather concerned about the light, as we have a recollection of an article in your journal saying a considerable light was required for good work.—**BRIT.**

One light may be used with suitable reflectors. But it would be better to have two for work in the way of groups, and on the score of shorter exposure in single portraits also.

**VARIOUS.**—(1) Would lead or zinc be suitable for the lining of home-made trays for developing and fixing of plates? (2) Also, would it have any deleterious effect on prints, collodio-chloride, P.O.P., etc., and also on bromide papers, providing, of course, that separate dishes were used, and that the solutions are not left standing in the dishes? (3) Where can I obtain rubber sheeting for lining toning trays, and what is the usual price of same? (4) Can you give me a formula for stripping films from the glass? I have used the hydrofluoric acid, but it is difficult to obtain, and a chemist once gave me a formula which, when made up, answered the purpose very well, and he told me that the constituents formed hydrofluoric acid, but I have lost the formula. (6) I have seen several formulæ for gold and sulphocyanide toning of bromides, gaslight papers, etc.; would these be applied to the sulphide-toned prints after a thorough washing, or does it apply to the black print without any sulphide or alum toning?—**T. HOPKINS.**

(1) The usual photographic trays would be preferable to either. Zinc will certainly not do for hypo solutions, as it would soon be destroyed. (2) Yes. Unprotected metal must not be used for papers containing free nitrate of silver. (3) At any of the india-rubber shops. Its price varies according to its thickness and quality. (4) Fluoride of sodium 60 grains, sulphuric acid 1 drachm, water 1 pint. (5) Dorritt and Martin and others. See our advertisement pages. (6) If used on the black prints the toning action is slight, and gives a blue-black colour; if applied to the sulphide-toned prints red chalk tones are produced. See the current "Almanac," page 652.

**HOLIDAYS.**—I have been in my present berth for eight months, and last week I asked for a fortnight's holiday. My employer replied that he did not, as a rule, give holidays, but he would arrange that I could take one if I liked, but that I must not expect him to pay me while I was away. I should like to know, and I shall be much obliged if you will tell me, what is the rule in the photographic business with regard to holidays. Are not some compulsory under the Factories Act?—**RETOUCHER.**

Yes, the statutory Bank Holidays and a few half-days during the year. In reply to the other query, there is no set rule amongst photographers with regard to holidays. Some give a fortnight, some a week, and some none at all. Where holidays are given it is customary that the employee is paid his, or her, wages the time. Unless that were done the holiday would be much discounted. Usually in establishments where holidays are given it is only to those who have been in the employ for a full year or more.

**C. A. S.**—The combined bath containing hypo, alum, lead, and gold is not to be recommended to the novice if permanence in the pictures toned in it is a consideration, and for the reason that long after the bath has been exhausted of its gold it still continues to tone and yield as good tones as it did before. Under these conditions the novice continues to use it, although the tones then are obtained by sulphur toning and not by gold. An experienced hand, if he used the combined bath, would discard it so soon as it was known that all the gold had been used up. For ourselves, we prefer separate toning and fixing, although it entails a little more trouble.

**Mac.**—In copying a cabinet picture the same size as the original the lens must be midway between the latter and the focussing-screen

of the camera. If your camera will not extend far enough you will have to use a "cone," or elongating piece, to carry the lens. The alternative is to use a shorter focus lens that will cover the size of the negatives.

**J. BEDWELL.**—What you describe as the extraordinary appearance of the negatives is due to hyposulphite of soda crystallising out of the film. Had the negatives been more carefully washed they would not have had the "extraordinary appearance." More care in future will avoid it.

**VINCENT.**—The most convenient furnace you can get for firing small enamel plaques would be one or other of the gas furnaces supplied by Messrs. Fletcher and Co., of Warrington. They are not at all costly. Doulton's, Lambeth, we think, also make suitable gas furnaces for the work.

**ANNOYANCE.**—My studio is on the ground floor in the garden. No door is a small school, and when the children come out for their play hour they cause great annoyance to sitters by looking and sometimes laughing and making grimaces at them. I have complained to my neighbour and he says he has forbidden the children to get on the wall, but the nuisance still continues. Could the police interfere?—**STUDIO.**

No, such a thing is not within its province, but it surely is a very easy matter for you to put a stop to the nuisance. All you have to do is to put fluted or ground glass in the side of the studio.

**SMOKING IN DARK-ROOM.**—Is smoking in the dark-room likely to cause fogging of the negatives? Several times of late I have had them fogged through no apparent cause, unless it be tobacco smoke. I may say that I almost always, while developing, have a pipe or cigarette in my mouth.—**FUMA.**

We have never heard of tobacco smoke causing plates to fog.

**A BUSINESS AFFAIR.**—We should feel under an obligation to you if you would enlighten us on the following. My brother and I have been in business at the above address for eight years. Three years ago we bought a small business at —, and engaged an operator and manager for it. The business has now grown to be a good one. A month ago he gave us notice, and has since left. When he gave notice we offered him more money to stop, but he would not do so. We now learn that he has taken a shop in High Street and is building a studio at the back; the money, we are told, is being lent by a tradesman in the place. We wish to know is whether there is any law that will prevent his opening a business in the town, seeing that he was three years in our employ and is better known in the business than either of us. Also, can he be prevented from using our name on circulars and shop front?—**S. BROS.**

Unless you have an agreement to the contrary, there is no law to prevent the man from acting what he is. He has a perfect right to commence a business on his own account, and it would be his fault if he had not—notwithstanding that his doing so may probably materially injure you. He is also entitled to use your name, provided that he does not place it more conspicuously than his own in such a way as to lead the public to believe that you are connected with the new business, or that it is yours. He may say for Messrs. —, or say three years manager to Messrs. —, anything of that sort, so long as his name is the most conspicuous.

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## The British Journal of Photography

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## SUMMARY.

is day (Friday), October 16, marks the closing of the "British Almanac," 1909, for the press.

an exhibition of multi-colour prints by the Brothers Hofmeister H. W. Müller remains open at the house of the "B.J." until day week, October 24.

photographer was fined £5, with the alternative of forty days' imprisonment, at Dundee last week, for working a scheme consisting combination of the issue of football coupons and the making of nit enlargements. (P. 800.)

death is announced of Professor von Jan, by drowning, while holiday in the Scilly Isles. (P. 801.)

conclusion of the article by Dr. C. E. K. Mees on photography coloured objects deals with certain specific cases in which the of a colour-sensitive plate and suitable screen proves of immense value. (P. 788.)

methods of manufacturing colour screen-plates and of copying one screen-plate on to another, figure, among other items, in the of the week. (P. 795.)

6 x 4 size and "Thames" colour plate appear, with other under "Correspondence." (P. 802.)

arrangements are far advanced for the holding of the sixth Scottish at Wishaw in January next. (P. 786.)

report of the exhibition of the Southampton Camera Club is on page 794.

Birmingham Photographic Society have moved into new rooms Exchange Buildings, New Street. Their occupancy was inaugurated recently by the Lord Mayor, and the society would appear to be showing its vigorous life. (P. 793.)

carbon process is the most suitable for the transfer of photographs to ivory for colouring. Some necessary details are mentioned on page 786.

precautions necessary when using a focal-plane shutter at a narrow aperture of slit are mentioned on page 785.

## EX CATHEDRA.

**Matt Varnish.** At the present time matt varnish is being largely employed as a means of improving negatives. It is sold by all the large dealers, and the formula for making it has appeared regularly for several years past in the ALMANAC. It is there mentioned that the proportion of the benzole used determines the character of the grain—the smaller the proportion the finer will be the grain, and the larger, the coarser will be the grain. But there is a limit to this, for if too much be used the resins will be precipitated. It must be understood that although the two resins—sandarc and mastic—are soluble in ether, they do not dissolve in benzole. It is the ether that holds them in solution, while the benzole has a tendency to precipitate them, which it will do if added to excess. The following formula for the varnish is the same as that in the ALMANAC, but is given in a more convenient working form:—

Picked sandarc	...	...	1 ounce
Mastic	...	...	100 grains
Ether	...	...	10 ounces
Benzole	...	...	2 to 8 ounces

There is a wide margin here in the proportions of the benzole, and the quantities given may be taken as the maximum and minimum that can be successfully employed. The sandarc and mastic are first dissolved in the ether and the extraneous matter allowed to subside, or the solution may be filtered. The benzole should be the pure No. 1 benzole, the coal-tar product, and not the petroleum spirit known as benzoline. It should be added a little at a time and well shaken between each addition. It will be noticed that each addition will cause a turbidity in the solution, but this will disappear on shaking. In making the varnish it is well to test it, after each two or three additions of the benzole, by pouring a little on a clean glass plate. Sandarc, like most resins, varies somewhat in its characteristics, and some samples may require more or less benzole than others.

## The Movement of the Focal-Plane Slit.

In using that very popular form of hand-camera, the focal-plane folding camera of the Anschütz or Palmos type, many fail to realise that the camera can be held in either of four positions, so that the blind may run either up or down or from right to left. As has often been pointed out before, when a narrow slit is used at a moderate tension various degrees of distortion may be produced in the image of a moving object, according to the direction in which the slit runs, but the direction of movement also has an important bearing upon exposure, which fact should be borne in mind when dealing with fast moving objects. When the image and the slit are moving

across the plate in opposite directions the exposure for the moving image is shorter than when they are moving in the same direction, therefore there is less chance of movement showing in the result. Stationary objects, of course, get the same exposure in either case. This applies to slits of any width, and the point is of considerable importance when very rapid movement is in question. One must, however, be careful to remember that the image moves in the opposite direction to the object itself, therefore, to attain the shortest exposure possible we should always make the slit move in the same direction as the object. It may be objected that when the camera is turned so as to make the slit move in the direction desired the finder may become useless. It will, of course, often get into a position in which we cannot use it, but in photographing rapidly moving objects a small finder is of little or no use according to our experience. It is quite easy to aim straight without it, while it is next to impossible to snap a particular phase of a movement if we pay any regard to the finder at all.

\* \* \*

#### **The Scottish Salon.**

The prospectus and entry form for the sixth annual "Scottish" are now available, and may be had on application to the Salon Secretary, Robert Telfer, 138, Glasgow Road, Wishaw. This exhibition, it might be remarked, is really the only "national" photographic exhibition in the world; it is confined to photographers in Scotland and Scots "ayont the Border," and in this connection it is interesting to note each year the increasing number of Scots now located outside Scotland who are represented at the Scottish. There are no entry fees and no medals, hanging being the only award of merit, and getting a place on the walls is becoming increasingly difficult. At the last "Scottish" in Aberdeen about 300 were hung out of some 1,000 entries, and it is expected that Wishaw, with its central position, will top the Aberdeen entries. Alex. Keighley, Arch. Cochrane, and R. Clouston Young, R.S.W., form the Board of Selection this year; this is a new board altogether, although Messrs. Keighley and Cochrane have at different times served as jurors. Great preparations are being made at Wishaw; some thought it was rather ambitious of the folk there asking the Salon to visit their town, but they are determined to give their visitors a right hearty welcome. The Provost is at the head of affairs, and every one seems anxious to work for success. The perambulating nature of the Salon draws in each year a new set of workers and thus widens the sphere of interest. As usual, an Art Union will be run in connection with the exhibition, and this has been the means of selling a

considerable number of the exhibits. Entries close December 7, receiving date for pictures is December and the exhibition will remain open from January 1 to

#### **PHOTOGRAPHS ON IVORY FOR COLOURING**

On several occasions of late we have had to reply to correspondents with reference to the production of photographs on ivory, such as: How they are made—Where ivory is to be obtained—What colours are employed in colouring of them—Where obtainable—and similar queries. As the replies given in the "Answers" column must necessarily be brief, we shall here give working details for producing photographs on this material. We do this especially because at the present time highly finished miniatures are being made such a special feature of most of our leading portraitists. Ivory, it is well known, is the best and most pleasing material for the miniature painter to work upon, and on it effects are to be obtained which cannot be got on any other substance.

The idea of producing photographs on ivory dates back to the very earliest days of the art, and some fifty or more years ago patents were applied for in connection with this class of work. They were all, however, based upon similar methods, transferring collodion or albumen films to ivory, and none of them came into practical use. It may be thought by some that if the ivory were salted after the manner of paper, then sensitised with nitrate of silver and afterwards printed, that a photograph could be obtained. And so it could; but there would be no whites in it, and the grain of the ivory would be very conspicuous in the finished picture, so that it would be useless for colouring upon. That is due to the varying porosity of the ivory absorbing the solutions unequally.

The only successful way, up to the present, of producing photographs on ivory is by the carbon process—by the double transfer method. If the single transfer be used, the laterally reversed negative must be employed, and, furthermore, the ivory is stained by the bichromate in the time when the latter is squeezed upon it, which stain cannot afterwards be discharged.

Ivory, suitable for the purpose, is supplied by all art colourmen in various sizes. In the smaller sizes it is at all expensive, but as the size increases the prices increase very materially—quite out of proportion to that of smaller pieces. In purchasing the ivory, the whitest, that freest from grain, should be selected. As sold, it is supposed to be ready for the use of the miniature painter, but such is not always the case. It may appear free from scratches when bought, but if it be immersed in water

#### **THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC FOR 1909.**

Edited by GEORGE E. BROWN, F.I.C.

THE forty-eighth annual issue of THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC will be published on December 1. This year's ALMANAC reached a total of over 1,000 pages, and the entire edition of 25,000 copies was sold out immediately. Of no other photographic book ever issued can two such unique facts be recorded. The edition for 1909 will also consist of 25,000 copies.

The editorial article will deal very completely with the important subject of

#### **REFLEX CAMERAS,**

and the systematic review of the work of the year under the title "Epitome of Progress" will be a strong feature of the volume.

The lines followed in the previous editions of the

ALMANAC will be maintained in general, but in a number of particulars the arrangement of the volume for 1909 will be modified to make it more than ever the book of universal photographic reference.

The ALMANAC for 1909 will appeal to photographers the world over as a daily reference guide in practical work. The standard matter and formulæ will be revised and added to where necessary, and, wherever practicable, new features of an informative nature will be added.

**NOTICE—IMPORTANT.**—Our publishers ask us to inform agents that it is advisable to place their orders for copies immediately, as over half the issue is already booked, and a second edition will not be printed.



while it will often show some fine scratches that were previously visible. These must be got rid of, otherwise they will be more pronounced in the finished picture. This is done as follows:—Some cuttle-fish powder is tied loosely in a piece of fine muslin, the ivory is wetted with water, and a little powder dusted on. Then, with a soft cork, the surface is worked over until the scratches are removed. In doing this the cork should be used in one direction only—that of the grain of the ivory. The latter is then well rinsed with water and allowed to dry, when it will be ready for use.

It will be as well now to say something with reference to the negatives that are best suited for carbon pictures on ivory that are afterwards to be highly finished in water-colours. Usually, pictures on ivory are reductions from larger ones, so that it is easy to make the negatives of the character best suited for the purpose. It should be somewhat thin and delicate. If it is of a very strong and vigorous nature the print will be strong and vigorous too, consequently the shadows of the picture will be in considerable relief, a very undesirable feature in a highly finished miniature. Moreover, if in the colouring gum is heavily used on the shadows to give them transparency there is the possible—perhaps rather remote—danger, if the miniature is subjected to a long-continued dry heat, say such as that of the tropics, of the gum and the thick plate splitting off the ivory in the deep shadows. With regard to the colour of the tissue used, it is very much a matter of taste, as some artists prefer one colour to work upon and some another. One gentleman we knew always preferred for colouring prints those that were of a light reddish-brown colour, because, as he told us, they saved him much time in the finishing. Whatever tissue be selected it should be but lightly printed, so that it may be developed in moderately cool water. If darkly printed it will give trouble to the colourist, as some of what should be the high-lights—or almost bare ivory—will probably have to be scraped away.

The print must be developed on the usual flexible support. The one best for our present purpose is a piece that has been used several times for transferring to paper. After development the print should be well washed to ensure the complete removal of all traces of the bichromate, so that the ivory does not become stained. The print is then put into a weak solution of alum for a few minutes and again well rinsed and allowed to dry, when it will be ready for transferring to the ivory. That is done as follows:—The print on its support is soaked in cold water for about ten minutes, or until both have become somewhat pliable. It is then, with the ivory, immersed in a solution of gelatine made as under:—

Nelson's No. 1 gelatine .....  $\frac{1}{2}$  ounce.  
Water ..... 8 ounces.  
Chrome alum (dissolved in 2 ounces water) 8 grains.

Both solutions should be made tolerably hot before they are mixed, and the alum solution should be added slowly with vigorous stirring. The hot mixture is then strained, through a double thickness of fine muslin, into a warmed dish. For convenience in working it is well to trim the print on the temporary support a trifle smaller than the ivory to which it is to be transferred. The two are next brought into contact—face to face—in the solution, avoiding air bubbles, and then well squeezed together on a glass plate so as to expel as much as possible of the gelatine, and thus leave the surface of the ivory as free of it as is possible. The picture is now allowed to dry. When quite dry, the support is stripped off, and the picture will be firmly attached to the ivory. If it were attempted to colour the picture in the state in which it now is, it would be found to repel the colour and seem to have a greasy surface. This is due to a trace of the waxing compound of

the support remaining on the surface. This, however, may be removed with benzole and a pledget of cotton-wool. The picture is now finished and ready for the colourist.

With regard to the colours used for painting on ivory, they are the ordinary water-colours as sold by all artists' colourmen, and the finished picture, of course, depends entirely upon the skill of the artist who does this important part of the work.

#### FINENESS OF GRAIN AND MICROPHOTOGRAPHY.

A COMMUNICATION from a correspondent this week suggests that something of interest may be said with reference to the character of the grain obtainable in the photographic image. It appears our correspondent is anxious to produce micrographs that will stand high magnification under the microscope without showing excessive granularity of the image. He also refers to the good results obtained by the late Mr. Dancer and others many years ago, when these tiny pictures were regular articles of sale by opticians and others who made a feature of objects for the microscope some fifty years ago. One of the first, if not the first, to produce these little pictures—though not for sale—if we mistake not, was the late Mr. Geo. Shadbolt, for some years editor of this "Journal." From some examples of his work we have seen, we may say that nothing since has been done that eclipses, even if it equals them.

Although these minute pictures, which seem a mere speck on the glass, are looked upon more in the light of curiosities than anything else, they may at times prove exceedingly useful. For example, during the Franco-German war, when Paris was so closely besieged, the only way of communicating with the outer world was by means of the "pigeon post," which was placed in the hands of M. Dagron, who had long been identified with the production of microphotographs, mounted on the surface of a small Stanhope lens. The communications were written, with the addresses, boldly on paper. A number were then affixed to a board, or screen, and a negative made of the lot. From this a minute transparency was made on a wet collodion plate, and the film stripped off. A number of these films, which only weighed a few grains, were then rolled up and put into a small quill and attached to the carrier pigeon's wing. When the pigeon arrived at its destination the films were flattened out and the images projected on a screen by an enlarging lantern. The communications were then read and re-written, and afterwards forwarded in due course to those to whom they were addressed.

Now it is manifest that in order to produce microphotographs the particles of silver forming the image must be in an extremely fine state of division, otherwise it will not be readable under great magnification. By way of illustrating this, most persons have seen on the embankment at some railway stations the name of the place formed by large chalk flints in letters six or eight feet long, which are clearly readable; but if the same size stones were attempted to be used for letters, say, two feet long, the result would be failure, as they would be too large to form them legibly. So it is with a coarse grain in a very minute photograph. Seeing that for this work the reduced silver must be in the finest possible state of division, we shall now consider how that is to be obtained, for it is obvious that it is of no use to employ a high-class objective for the work if the definition it yields cannot be rendered by the photographic film.

At once it may be said that gelatine plates are useless for the purpose. It is true that with some lantern plates the reduced silver is in a comparatively fine state of division: but if a small micrograph, such as are now being referred to, be made on such plates, the grain will

appear very coarse under the microscope. This might well be expected when it is considered that with this process the particles of bromide of silver are practically held in mechanical suspension in the gelatine. In the collodion process, however, the fineness or coarseness of the particles in the developed image depends very much on conditions. For instance, a bromo-iodised collodion, sensitised in an acid bath, and developed with the usual iron developer, will not yield so fine a deposit as will a simply iodised one, without bromide, sensitised in a neutral bath, and developed with pyrogallie acid. The latter method of working is somewhat more difficult for the novice, because, to get the best results, everything must be almost in a state of equilibrium, which the slightest disturbance may upset.

It goes without saying that the collodion used must yield a film that is perfectly structureless. The sensitising bath should be neutral, and the developer freshly made. Under these conditions the reduced silver will be in an exceedingly fine state. One point, however, is essential, which is that the exposure must be full, and must be made in a good light, for it is found that under these conditions the image partakes more of the character of a stain than an actual deposit of particles of silver. The image then has a warm claret tint—that is, when the developer is acidified with acetic acid only; it has a colder tone if, in addition to the acetic, it contains a small proportion of citric acid. If the exposure is made in a bad light, even when an equivalent time is given, the character of the developed images is different—the colour is much colder: also the particles of reduced silver are coarser. The silver bath should be the usual thirty-grain strength, and must be saturated with iodide of silver. Before the developer is applied it is well to drain off the superfluous silver bath as closely as possible so as to avoid unnecessary density or hardness.

The most convenient size for the negative from which to make micrographs is, perhaps, 5 by 4, used in a small copying camera; but nothing need be said with regard to appliances beyond that the objective must be one that will give the finest definition and work to focus. An inch

and a-half or two inches is about the best for the purpose. The focussing of the image is best done by moving the negative, unless the exposure of the plate is made at the stage of the microscope, which is really the best way of working.

Although, as just said, an exceedingly fine grain is obtainable with the wet collodion process when employed under the best conditions, a still finer grain, however, can be obtained with the albumen process when it is worked at its best. It is a more troublesome process to work, and the exposures required are very prolonged compared with collodion, and it is doubtful if the extreme fineness secured is, in practice, worth that extra trouble, seeing that all the earliest micrographs, the excellence of which our older readers will well remember, were made by the collodion process. It may, however, be said that those now sold at bazaars in holiday resorts, in trinket form, are by that process, and are certainly very bad, and are not to be compared for a moment with those made some forty or fifty years ago as regards fineness of deposit.

With regard to the working of the albumen process for this kind of work, it will not differ from the usual method. The albumen is prepared and iodised in the usual way, but it may be as well to mention that the iodised collodion employed as the substratum, should be old, yield a clear film, and be quite free from structure. The silver bath should be thoroughly saturated with iodide of silver, and the time of immersion of the plate in it should be short—not more than half to three-quarters of a minute at the time of the year. The developer may be either a solution of gallic acid, or an acidified one of pyrogallie acid, with in either case, a drop or so per ounce of a twenty-grain solution of nitrate of silver added. The developer, whichever is used, is best employed at a temperature of 100 deg. to 110 deg. F. If, when the albumen picture is fixed, it is considered to be too brown or warm in colour, it may be toned in the old gold and hypo combined toning and fixing bath. If that is done it should not be overdone, the pictures dry up considerably darker than they seem while wet.

## THE PHOTOGRAPHY OF COLOURED OBJECTS IN PRINCIPLE AND PRACTICE.

[The following article, which is completed in this issue, is composed of several chapters from a book by Dr. C. E. K. Mees, to be issued under the title of "The Photography of Coloured Objects." Dr. Mees' treatise so well explains matters in the practice of orthochromatic photography that frequently present difficulties, that by permission of his firm we quote from advanced sheets of the book. The full text of the latter we would recommend to the perusal of our readers, for the sake of the chapters on portraiture, landscape, reproduction work, and the tri-colour process, all in relation to the photography of coloured objects. Messrs. Wratten and Wainwright will shortly publish the volume at a nominal figure.—Eds. "B.J."]

### Colour Contrast for Special Purposes.

The type of colour contrast which we have been describing is simply a concession from orthochromatism, in order to enable us to some extent to make up for the failure of monotone rendering when it is necessary to render colour. But there is another case of the photography of colour contrast which is to the technical worker of as great, if not greater, importance, and that is the photography of coloured objects *per se*, in order to obtain the best possible results, generally for reproduction purposes.

**General Principles.**—If a colour is to be rendered as black it must be photographed in its absorption band by light which is of such a wave length that it is completely absorbed by the colour. That colour then appears as black as it can be made.

A useful example is given by a photo-micrographic section stained with eosine. This section is pink; if it is viewed by blue light, owing to the fact that eosine does not absorb blue, it looks comparatively light. By green-blue light of wave-length about 4,800 to 5,200, which is completely absorbed by eosine (see Fig. 15), the section is entirely black, as is shown by Fig. 16, being blocked up in detail; this gives the maximum degree of contrast. Photographing at 5,700 on the border of the absorption band, we get a lessened contrast (Fig. 17) which for this particular section will give us the best result. There is plenty of detail in this section, while at the same time the contrast is sufficient for reproduction purposes. Photographing at 6,400 in the red, and in light which is completely transmitted by the section, the section has no contrast, is very



at, and results are useless (Fig. 18). So that for the maximum contrast we must photograph in the absorption band. Let us take two practical instances:—

(1) Given an engineer's blue print showing white lettering

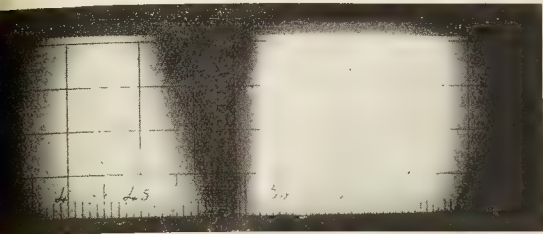


Fig. 15.

on a blue ground. We require to reproduce it for a line block. This blue print has a strong absorption in the red. If we photograph it through an A screen, the strong red screen used for tricolour photography, or better, through the screen made specially for this work, upon a process pan-

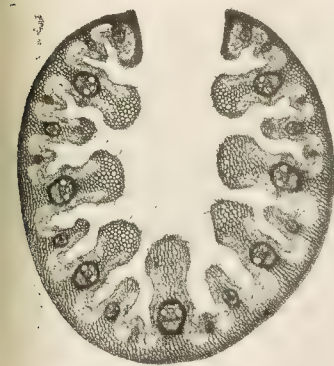


Fig. 16.

chromatic plate which is quite sensitive to this deep red light, when we shall get the maximum contrast which can be obtained, and, as a matter of fact, the blue will be to all intents and purposes an intense black, and there is no difficulty whatever in obtaining our negative.

In photographing typewriting, a green screen must be used, and if there are any red ink corrections the green screen will record these also. If, however, a red screen be used, the typewriting will record satisfactorily, but the red ink will disappear.

Fig. 19

Suppose, to take another example, we have a sheet of typewriting with corrections in red ink. The violet typewriting absorbs the whole of the orange and green, the red ink absorbs only in the green. If we photograph through the green filter of the tricolour set, B, we shall get both the typewriting and the red ink completely black (Fig. 19), and the greatest contrast which can be obtained. If, on the other hand, we photograph through the red A filter, the typewriting will appear plainly

visible, but the red ink will show so little contrast that it can easily be intensified out of existence (Fig. 20), and we can make a reproduction of the sheet showing the typewriting only.

By the application of this principle we can pick out, in fact, any colour from a combination of colours, and in two, three, or four printings obtain a facsimile result. For the application

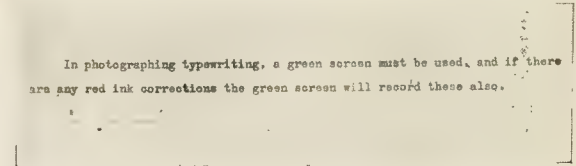


Fig. 20.

of this principle to photomicrography, in which it is of great importance, see a little booklet which I published some time ago called "The Selection of Plates and Filters for Photomicrography."

(2) The second principle of importance is that where a uniformly coloured thing is to be photographed and the best



Fig. 17.

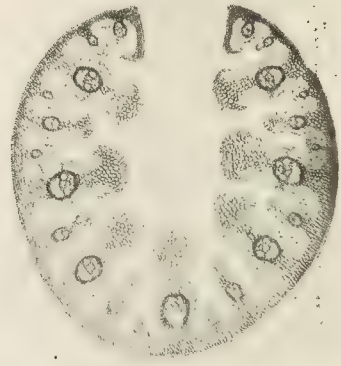


Fig. 18.

rendering is to be obtained, it must be photographed, not in its absorption band, but in the transmission or reflection region of the colour. That is, by using light of the same colour as that which is reflected by the object, not of that which is absorbed. For instance, in photographing the eosine-stained section we get the greatest contrast by photographing in the absorption region of the stain, but we obtain that contrast at the expense of the loss of detail in the section, and we get the greatest detail in the photograph where we used the red light. Owing, however, to the fact that we must keep contrast against the background in this case, our best final result was a compromise between contrast and detail, obtained by photographing on the border of the absorption band. A very good example, however, of the use of light such as is transmitted by the stain is shown by the Figs. 21 and 22 of a whalebone section, which are reproduced here from the little book on photomicrography. The upper one shows the section photographed for contrast by means of light which is absorbed by it; the lower one shows the same section photographed by the light which it transmits in order to show detail.

The most important instance of this method with which I am acquainted occurs in the photography of furniture, where the results obtained are simply startling to the uninitiated. If a piece of reddish mahogany is photographed on an ordinary

plate no trace of grain is usually visible. The photograph is made by blue light, to which both the red darker portions and the yellow light portions are black; to give an increased expo-



Fig. 21.

sure simply results in the photography of a plentiful crop of normally invisible scratches (Fig. 23). If, however, a panchromatic plate sensitive to the red is used, with a strong



Fig. 23.

yellow screen, the results are entirely different; the scratches disappear and the grain comes up in the most wonderful way; in fact, so startling is the difference that probably many of my readers will think that Fig. 24 herewith is faked, but I

can only assure them that if they try the experiment they will get similar results.

A useful example of this same principle of photography

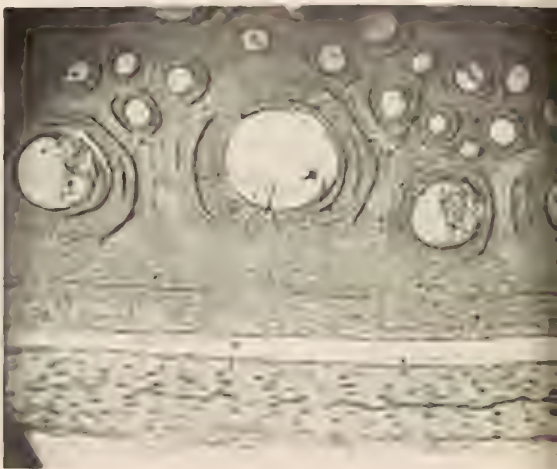


Fig. 22.

in the coloured light which is reflected from the object is given by the photography of prints for reproduction purposes. A warm sepia carbon print, for instance, if being copied for



Fig. 24.

photographic reproduction represents a most difficult object, the shadows invariably clogging, and the whole scale of contrast becoming greater in spite of any variations of exposure.



development. In the same way, a red silver print when photographed on wet plates for half-tone work is well known as a most difficult subject, requiring usually a large amount of fine etching. These and any other cases of the

same kind can be dealt with very easily by using panchromatic plates with a medium screen. The prints then become as easy to copy as any black-and-white subject.

C. E. KENNETH MEES, D.Sc., F.C.S.

## THE HALIDE CONTENTS OF P.O.P. AND OTHER SILVER IMAGES.

In the "British Journal of Photography" for February 21 of this year there appeared an article by me dealing with the question of the nature of the image on a P.O.P. print. Very soon after the publication of this article an experiment I was then conducting made me suspicious of the conclusion I had come to that the P.O.P. image contained much silver chloride. I printed out a very faint image on a piece of P.O.P., and then, after fixing and washing, found I was able to develop up a yellowish brown image of full strength by immersing the print in a dilute solution of silver nitrate to which a little metol and citric acid had been added. Here I got an image very similar in appearance to that produced by exposing P.O.P. to the light and then fixing it, which image could not contain much, if any, silver chloride. This developed image behaved on development just as the ordinarily produced image on P.O.P. does. I saw at once that I must re-examine the question of the P.O.P. image, for what had made me first accept the views put forward in the above-mentioned article was the difficulty of explaining the action of sulphide solutions on the P.O.P. image unless this image contained a large percentage—at least 20 per cent. or so—of silver chloride. I did not accept the views I expressed last February without examining (as I then thought thoroughly) the fixed P.O.P. image for silver chloride, and, as I then believed, finding it in very sufficient quantity. Much of the silver chloride I then found, however, I now know, produced by the silver as it passed to the solution acting on traces of sodium chloride left over in the paper from the fixing bath. The mass of the silver of the image so small that very small traces of a soluble halide are sufficient to precipitate a considerable portion of it. At the time I was examining the fixed P.O.P. image for silver chloride I was quite aware, of course, of the chance of traces of sodium chloride being left in the prints, and of the result such traces would have, but I thought the washings to which I subjected the prints were ample to eliminate all such therefrom. Moreover, on subjecting bromide prints to the same treatment as plainly fixed P.O.P. prints I found a less halide present in their case. It was this latter fact which made me less careful than I should have been to see to it that the washing of the prints experimented with was thorough and sufficient to eliminate the last traces of soluble halides, for it appeared to me at the time to be practically certain that if any trace of a soluble halide was left in the paper similar results would be given by bromide or gaslight papers and by P.O.P. This, however, is not the case. The explanation of the difference of behaviour of bromide or gaslight and fixed P.O.P. prints containing traces of soluble halides when exposed, as I exposed them, to a solution of ammonium persulphate is as follows:—The action of the ammonium persulphate is a good deal slower on the P.O.P. image than on the bromide or gaslight one, and so more time is given for the soluble halide to diffuse up to the dissolving silver. In the case of a P.O.P. print all the silver chloride is precipitated in the position of the image, but in the case of a bromide print it is precipitated partly in this position and partly elsewhere. While I worked with ammonium persulphate and did not properly wash the prints, I always noticed, on subsequent development, a stain produced behind the image in the paper of bromide prints. I thought at the time that this stain was due to combination having taken place between the paper and the dissolved silver, the concentration being greater here than elsewhere, and owing to the quicker action of the solvent, greater than in the case of a P.O.P. print. I now know that the stain was brought about by traces of halide which I had not properly washed out. Well, I need not go on with this story any longer, but can pass to the description of the proper method of examining a silver image for its halide content and the conclusions which experiments carried out in this way have forced upon me.

The last traces of sodium chloride and bromide left over from the fixing operation are only eliminated by very prolonged washing. In older text books of photography great stress was always laid on washing plates and papers for several hours in running water after fixation. Now, it is the fashion to advise that the final washing should be of less duration—an hour is generally about the time recommended. Of course, much depends on the method as well as the duration of washing, but certainly no matter how satisfactory the method be, an hour is not sufficient whenever any harmful substance has been brought previously into contact with the plate or paper.

In my later experiments, in investigating the halide contents of the images of prints, I worked with quarter-plate prints, and, after fixing, washed these singly in quarter-plate dishes. Water was allowed to run continuously into the dish at the rate of about 2 oz. in 10 seconds, and the prints were turned over every half-hour or so. I found it necessary to continue washing for five hours in order to get rid of all the soluble halide salts. Strictly speaking, of course, it is not possible to wash out all the soluble halides with tap water because this always contains a very small quantity of soluble chlorides, but this amount is so small as to be practically negligible, especially if the bath used for dissolving the silver is made up suitably. When the print has been thoroughly washed it should be immersed in

Ceric sulphate .....	90 grains.
Conc. sulphuric acid .....	150 minims.
Silver nitrate .....	3 to 4 grains.
Water .....	10 ozs.

The object of the addition of the silver nitrate is, in the first place, to get rid of any soluble chloride present as an impurity in the water used in making up the solution or in the other chemicals, and in the second to precipitate any small trace of soluble halide left in the paper in situ, and so prevent it from being precipitated in the position of the image. Ceric sulphate acts rapidly and readily on all silver images. After all the silver has been dissolved out of the image the print is thoroughly washed again in running water, and is then treated with a solution of pure crystalline sodium sulphide or sulphuretted hydrogen. This, by converting the halide content of the image into silver sulphide, renders them visible.

When examined in this way, it is at once apparent that the halide content of the images, both on plainly fixed P.O.P. and on bromide and gaslight papers, is very small—far too small, in my opinion, to account for any of the properties of these images. In fact, in the case of bromide paper, the halide content is almost invisible. No matter for however long I have washed a print or negative I have never failed to find some halide content in the image. I am therefore as convinced as before of the correctness of the "lake" theory, but I now regard the fact that the silver contains silver halide dissolved in it as one that is certainly interesting in itself, but not capable of explaining many of the phenomena which it has been alleged by myself and others to explain. Before going on to consider these phenomena, I must here add that I have lately several times repeated the analysis of the image on plainly fixed Barnet P.O.P., and find that owing to insufficient washing I greatly over-estimated the percentage of silver chloride contained therein. My later results show the halide content to be very small. My experiments were not elaborate enough to enable me accurately to determine the actual percentage of this halide content, so it would only be misleading to give the exact results. Let us now consider some silver images and see how far their properties can be explained by reference to their halide contents. It is well known that if the black silver image of an ordinary negative or bromide print be bleached and then redeveloped with a suitable developer an image showing marked increase in "body" results. If the halide content of the image on a negative

before and after redevelopment be examined by the method above described—and this can be done by cutting the negative in half and redeveloping one half—it will be found that the increase in halide content is very small. I am myself by no means certain that any increase really occurs at all, if the redevelopment is carried out to completion. It may well be that some bleached images can only be redeveloped to yield a lake containing a good deal more silver halide than the original image, but I can only say that, if this is so, I have not met with them. I find no difficulty in redeveloping an image bleached in a solution of iodine and potassium iodide to one containing very little silver iodide indeed, provided a powerful redeveloper is used and sufficient time allowed for its action. In every case of redeveloped image seems to me to be a molecular one. The results of density in the image. I have never found, however, that a second redevelopment gave further density. The only possible explanation of the increase of covering-power possessed by the redeveloped image seems to me to be a molecular one. The results of the experiments I have lately carried out appear to me to put aside altogether an explanation depending on an increase of the halide contents of the image. What the exact molecular change is which takes place nobody, of course, can say, but I may perhaps be not going too far in suggesting that if the spaces between the ultimate molecules forming the particles of which the image consists are increased an increase in size of these particles would occur. An increase in the size of the particles of the image does occur in redevelopment, and it is this increase in size of the particles which gives to the image its increased "body."

I, of course, admit that this theory does not give such a satisfactory explanation of the result of sulphuration as that depending on the increase of halide content, but we must abide by facts. If a bromide print is bleached and redeveloped, and then bleached again and sulphuretted, the silver sulphide formed has exactly the same covering power as that formed by bleaching and sulphuretting the original image. We must here assume that the intermolecular spaces are not so variable in extent in the case of silver sulphide as they are in the case of metallic silver.

Another fact about redeveloped images is that very often, but not always, they are acted upon quite readily up to a certain point by a solution of a soluble sulphide, and this phenomenon we must, I think, now ascribe to some molecular change rendering the image more easily open to attack.

Before leaving the subject of bromide and similar papers, I must mention a very interesting fact, and one which I personally think is of considerable practical importance, viz., the difference in colour produced by redeveloping from a chloride bleached image as opposed to a bromide or iodide bleached one.

Images redeveloped from a chloride bleached image by a redeveloper containing no potassium or other soluble bromide possess a beautiful blue-black colour. A similarly coloured image is also produced by properly carried out primary development of gelatino-chloride or gas-light papers, and those having certain chloro-bromide emulsions spread upon them. It may possibly be the fact that the silver chloride, although in extremely small quantity, affects the molecular state of the silver in some particular, but it seems more likely that the special molecular state of the metal on which the colour depends is regulated by the chemical and physical composition of the substance from which it has been developed. It is an interesting fact that an image developed out by primary development of a blue-black tone yields on sulphuration one of a rather yellowish brown. To come to the case of P.O.P., we must ascribe the fact that the image is so easily attacked by sulphide solutions and also the loss of density on sulphuration to causes depending on the molecular structure of the silver, for no other explanation seems available. If a P.O.P. print be plainly fixed and washed and then exposed to an atmosphere containing much sulphuretted hydrogen or else to a weak solution of a soluble sulphide, the image changes colour, passing from brown through red and purple to a dirty bluish brown, and finally becoming very faint in density. These changes in colour and density would appear to be almost certainly caused by the formation of a film of silver sulphide on the surface of the silver particles, which gradually gets thicker and thicker until at last all the silver is converted into silver sulphide. Now, I don't think it can be denied that the "lake" theory I previously advanced offered a more satisfactory explanation of the colour effects and the change of covering-power.

Reddish chloride-sulphide lakes are known, and the change of density seems very great for a purely molecular explanation. When bromide print which has had a "correct" exposure and full development is sulphuretted the covering power of the sulphide image seems to be quite equal to that of the original one, but this is the case where it is so. As an explanation depending on the halide content of the image is no longer available, we are forced to the conclusion that the molecular state of the silver sulphide of a photographic image is often very different from that of the silver from which it is derived.

It is curious that a film of silver sulphide of a certain thickness produces a red colour, but so it seems to be.

I believe that the red constituent of the tone of a finished P.O.P. print is always caused by sulphuration, and never by the deposition of gold. It is, of course, quite possible that a film of gold in a certain molecular state might give almost any colour to the image, but I have never been able to obtain any evidence of any effect caused certainly by the sole action of gold which gives any "warmth" to the tone of the image.

It is commonly stated that the permanence of P.O.P. prints depends on the kind of toning which has taken place. It is said that those prints which have been toned with gold are permanent, and those which have been "sulphur toned" are likely soon to fade. I think this is a totally wrong view of the matter. I don't believe there is any such thing as "sulphur toning," if by this is meant deposition of sulphur on the image. I believe, as stated above, that a film of silver sulphide is formed on the surface of the silver of the image, and that the toned image consists essentially of silver and silver sulphide. Generally, where gold is contained, as it practically always is, in the toning bath the image consists of a certain small amount of blue metallic gold as well, which causes the tone to verge away from red towards purple. We know also that certain gold solutions react with silver sulphide, and no doubt some of the products—probably aurous sulphide—of this reaction is also present under certain circumstances.

Silver sulphide is an extremely stable compound, and its presence cannot have any injurious effect on the permanence of the image.

I believe there are two causes of want of permanence in P.O.P. prints: (1) "Retained" silver or lead, (2) traces of unstable sulphur compounds left in the print through insufficient washing. I discussed the question of "retained" silver and lead in my article of February 21, and I need not again go into it.

When the image of a P.O.P. print fades the result obtained is exactly the same as when a solution of a soluble sulphide has been allowed to act upon it beyond the time necessary for reaching the purple-coloured stage. The conclusion seems irresistible that the fading is due to sulphuration.

Prints which have been toned in a "combined" bath have long been suspected, and undoubtedly a great quantity of such prints have possessed a very short life. I believe that this has come about because the "combined" bath is so often improperly used, and not because its use is necessarily dangerous. A "combined" bath must be made up properly and properly used, and the print must be washed very carefully after toning. But somebody will very likely say: "I have washed prints toned by the 'combined' method as by the 'separate' one in an exactly similar manner and have found that while those toned in the 'combined' bath did not last as long as the others have done so." Yes, undoubtedly many have had this experience. The reason probably is—leaving aside those who, by using a badly made-up bath or misusing a good one, have made the acquaintance of "retained" silver or lead—that neither lot of prints were properly washed, but that in the case of those toned and fixed separately the substances left in were not nearly so harmful as in the case of the others.

I ascribe the early fading of many P.O.P. prints merely to the fact that substances were left in the paper and gelatine film of an unstable nature, which decomposed and gave off sulphuretted hydrogen and so sulphuretted the image. But some one will want to know why bromide prints toned in the hypo-alum bath are so stable, for "surely," he will say, "you don't imagine that all such have a long and careful washing given to them after toning." No, most certainly I don't. However, in this case the liberated hydrogen sulphide will do no harm, for it cannot act on a complete



phuretted image. The case of negatives or bromide prints fixed in acid fixing bath is also interesting in this connection. I don't imagine that the residuum of the acid fixing bath is nearly so unstable as that of the much more strongly acid "combined" toning solution, still I should certainly say that it is more unstable than that of a neutral solution. The power of resistance to the action of sulphuretted hydrogen possessed normally by black silver images is very considerable, so that I can quite understand how the acid fixing bath proved itself innocuous.

If late there has been a reappearance of baths for toning P.O.P. prints from which gold is absent. I don't think there is any objection to the use of such provided they are made up properly and properly used. An ordinary hypo-alum bath, to which a little lead is added—not more than half a grain to the ounce—has been found to be apparently quite good; so, too, is a very dilute solution of pure crystalline sodium sulphide made distinctly alkaline by the addition of caustic soda solution, provided that silver can be obtained showing complete absence after fixing of combination between the soluble silver and the gelatine, but this, as stated in my previous article, I personally doubt.

Those who wish to use any toning bath containing unstable sulphur compounds must see to it that they not only employ a good bath and use it properly, but they must be careful to wash their prints in an efficient manner—i.e., the prints must be got to move properly in the washer—and they must continue this washing for five or six hours. While I firmly believe that there is nothing to take the place of really thorough washing, it would be interesting to know what effect treatment with an alkaline solution subsequent to toning would have on the permanence of prints toned in a "combined" bath and rejected afterwards to a moderately long washing. It certainly seems probable that where lead is absent from the toning bath a beneficial effect ought to be produced, and even where lead is present this effect should still show itself. I am at present conducting experiments on this point, and naturally some considerable time must elapse before any conclusions can be drawn.

In stating my belief that silver sulphide is present in the toned image of P.O.P. I am quite aware of the fact that some hold that a brown image of a sulphuretted bromide print consists of a gelatino-sulphide of silver. I do not, however, agree with this view. Those who uphold it point to the facts that (1) the colour of the image is brown and not black; (2) when the film containing the image is dissolved in hot water a brown solution-like liquid is obtained.

These facts do not seem to me to be worth much. In the first place, brown silver sulphide can be easily obtained. If we produce a film of silver sulphide, or get the substance in a fine state of suspension, we notice that it is brown in colour. The following experiments show this clearly enough:—

A) Put a drop of the solution of a soluble sulphide on a coin or other article of silver and a thin brown film of silver sulphide results.

B) Dissolve 1 grain of silver nitrate in 40 ozs. of water and add a few drops of a 20 per cent. solution of sodium sulphide and a brown suspension, due to silver sulphide in suspension, will result.

It is, of course, very well known that sulphides very often exhibit the phenomenon of suspension. I hold that the brown solution-like liquid that is formed by dissolving the film from off a sulphuretted bromide print is merely an emulsion of silver sulphide. Gelatine, as is known by everybody, has the power of holding in fine suspension or "emulsifying" various solids. It does not seem to me to be at all curious that a solution of gelatine should hold in very fine suspension a solid which even water can to a certain degree so hold. Much for the arguments of the gelatino-sulphide theorists. Now I ask them a question. How do they account for the fact that if a compound is formed no spreading of the image occurs? The fact that when a bromide print is sulphuretted a perfectly sharp image, showing no signs of "running," is formed in the same place as the original silver one, seems to me to upset altogether the compound view and to show that the image consists of pure silver sulphide. If, however, it should turn out to be the fact that a combination between gelatine and silver sulphide does occur in the sulphide toning of bromide prints, then it is very likely that such takes place in the case of P.O.P.

R. E. BLAKE SMITH.

## BIRMINGHAM PHOTOGRAPHIC SOCIETY.

### OPENING OF NEW ROOMS.

THE rooms recently acquired by the B.P.S. in Exchange Buildings, New Street, were inaugurated by the Lord Mayor on the 6th inst. At an early period of its existence the society held its exhibitions on the same premises, but for the last seven years the members have assembled in Norwich Union Chambers. The new home of the society is more convenient in many ways. There is a meeting-room 46ft. by 21ft., with lantern screen, as well as a reading-room and dark-room. In view of the important departure made by the society it may be interesting to review briefly its history. The present society was founded in 1884, but Mr. Harold Baker, in a paper read some years ago, traced the development of the photographic art in Birmingham as far back as 1790, when experiments were made with sun pictures by Boulton and Watt at Soho. One of the earliest Daguerreotypes made in this country was the work of the late Mr. Geo. Shaw, and Dr. Hill Norris, who became the first president of the society, patented a collodion dry plate as early as 1855. The first society was founded in Birmingham in 1856, with Mr. W. B. Osborne as hon. sec. One of its objects was to build a gallery for the exhibition of members' work, but before this was realised a heavy deficit on an exhibition brought the society to an untimely end. The society lived long enough, however, to develop considerably the art of photography in Birmingham, and one of its achievements was the raising of a fund to induce Pouncey to reveal the secret of his carbon process. Mr. W. Willis, a member of the society, was the inventor of the platinotype, and another Birmingham man, Mr. Alex. Parkes, made a substance which he called Parkesine, and which is now largely used as a basis for celluloid films. The present society began in a very modest way in a room at the Technical School. In 1887 the question of photo survey work was introduced by Mr. W. Jerome Harrison, and taken up by Sir J. B. Stone, who had been privately engaged in securing records for many years. The National Photographic Record Association was formed, and was instrumental in supplying the British Museum with valuable records of old customs and contemporary events. After holding several successful exhibitions in the Exchange Rooms, the society received artistic recognition by being invited to hold their exhibition at the Royal Society of Artists. Photographers from all parts of the world now send pictures to this exhibition. The society will continue to hold the annual open show in the rooms of the Royal Society, but it is intended to hold periodical exhibitions of members' work in the new rooms. The first of these minor exhibitions was held on the opening night, when some fine examples of members' work were shown. There was also a lantern display, the most striking feature being some fine Autochrome slides by Messrs. Baynton, Holder, Leeson, and Partridge. The programme also included some musical items.

Mr. Harold Holcroft (president) was in the chair, and there was an overflowing attendance. The president pointed out the advantages which members would have in the new rooms, and expressed the hope that they would use them in the daytime as well as evening. They intended to develop the social side, and it was possible that the subscription might be reduced in order to increase the membership. The society had a good reputation for artistic work, but its membership was not so large as it should be, considering the size of the city. In conclusion, he welcomed the Lord Mayor as a brother photographer, a former member of the society, and as a future subscriber.

The Lord Mayor congratulated the society on having moved into rooms so centrally situated and so well adapted for their purpose. He thought everyone should have some hobby in which he could take an active interest, and because photography fulfilled that requirement he had come to give the society the civic blessing. One could not look round those rooms without seeing that the artistic element was very much to the fore in the society, and he would rather have such photographs hung on his walls than an indifferent oil painting. He took a camera with him on his holidays and illustrated his diary with photographs, which in after years recalled pleasant memories as he turned the pages. There was also pleasure to be derived from the freemasonry which existed among photographers wherever they went. In conclusion, he wished the society all success, and would be only too pleased to do all he could to further its objects.

Dr. Hall Edwards, in proposing a vote of thanks, said photography

deserved a civic blessing, because it enabled the public press to give people a more accurate account of scenes and events than could be given in words. The pictorial side of photography had been developed to its limit, but its educational and scientific uses remained to be developed. Already the lecturer had to provide himself with slides in order to get a hearing, and the time would come when the same consideration would be shown to children in schools. He was glad to see that the scientific section of photographic exhibitions, which was formerly the darkest corner and used as a cloak-room, was coming into greater prominence.

## Exhibitions.

### SOUTHAMPTON CAMERA CLUB.

THE first of the triumvirate of southern exhibitions is now open in the Philharmonic Hall, Southampton, where, as usual, a strong collection of work has been got together. Hove and Portsmouth follow in the order named. A glance round the exhibition now under consideration reveals the fact that fewer frames than usual are on show, but the same glance will also show that the usual high standard of excellence is well maintained, even if there is no actual advance. Indeed, the standard of the work submitted this year is so high that the hanging committee have been able to exhibit every frame sent in, and it is not too much to say that there is no picture on the walls that can be considered bad. Three hundred and twenty-four frames in all are shown, composed as follows:—One hundred and thirty-two by members of the Southampton Camera Club, one hundred and forty-eight in the open competitive class, and the balance of forty-four represents an interesting loan collection.

Taking the members' classes first, we find that Miss E. Alder shows an interesting study in Hereford Crypt; E. E. Butler shows a good view of the "Wirtschaft Wasserfall," Switzerland; and O. P. Butler's one-frame "Hamble Marshes" is a good rendering of the subject, although we consider it somewhat low in tone; his slides, however, are better in this respect. C. H. Burr is best in "A Wee Burn," whilst A. D. R. Bacchus shows some fine technical work in "Pictures from Birdland," and his slides, also of technical subjects (snails, to be exact), are very nice indeed. Cecil Daw shows but one frame this year, and although it is a pleasing picture it is by no means up to his usual high standard. R. G. Vaughton Dymock shows sixteen frames, the best of which we consider to be "Evening in the Teign Estuary," with "Ships that Pass in the Night" a good second. H. Essex is one of the club's strongest workers, and "Rainy Day in a London Suburb" enhances his reputation, being one of the finest renderings of a wet pavement that we have seen. "Sunshine on the Old West Gate" is a little behind the other in excellence, and "Passion Flowers," a delicate floral study, shows the worker's versatility to advantage. Mr. Essex also takes an award for a set of excellent landscape slides. Mrs. Alan Francis exhibits three frames, of which "A Five Foot Jump" is undoubtedly the best. A. Gibbings has four frames, of which the best is "Evening," the sky of this picture being particularly well rendered, but the water is monotonous and the shadows somewhat heavy. The Rev. John Heath is best represented by "Oliver Goldsmith's Resting-place—the Temple," and this picture earns him an hon. mention, the sunshine and atmosphere being particularly well controlled. A. E. Henley shows ten frames, but it is evident that his opportunities for pictorial work in the past year have been fewer than usual. His best is a "Sunlit Lattice," but this picture shows signs of halation. "In a Tudor Room" is better in this respect, but the inclusion of the very modern figure is unfortunate, and green is not the best colour in which to have rendered such a subject. "The Pass of Llanberis," by the same worker, is a broad rendering of a somewhat hackneyed subject. C. D. Kay exhibits some very fine professional work "Not for Competition," which shows to splendid advantage the capabilities of the electric arc lamp for portraiture. His picture, "A Temple Half as Old as Time," is a good rendering of sunlight on an old stone muredo. W. R. Kay shows six frames, and takes an award and two mentions, and also an award for slides. S. G. Kimber, who is, of course, the pictorial leader of the club, as well as its mainspring in business

matters, is strongly represented, and the best of his frames, "A Portal," is certainly worthy to compare with his past successes, both in technical quality and pictorial excellence. "The Crypt, Hereford Cathedral," is not far behind, and "Sunny Lassie" finds general favour with all visitors at the show. We cannot help thinking, however, that it is perhaps rather heavy. The best picture exhibited in the name of H. W. Miles is "Green Grow the Rushes," and "Test at Greatbridge" will prove of more than passing interest. E. H. Plumptre's best exhibit is "Northam Bridge." The atmosphere is very fine, but the whole picture is too low in tone and an unpleasant colour; the framing also, we think, might have been more carefully done. R. E. Parson receives a well-merited hon. mention for "In Lowestoft Harbour," which is undoubtedly the best of his four frames. The picture somewhat lacks balance, but that is the only fault we can find with it. His slides are somewhat unequal in quality, but the best are very good indeed, and for these he has also received an hon. mention. W. P. Purvis shows "A Corner of Romsey Abbey" and "A River Landscape," but the architectural study is easily the better. H. J. S. Quilter takes an award for "Play of Sunlight," and would have received another in the same class for "Autumn," but the rules of the exhibition only allow him to take one. The former picture is a new rendering of that well-worn subject, sunlight on whitewash, and Mr. Quilter is to be congratulated on obtaining a satisfactory picture of this nature on his own. A. Rumsey receives an award for "Jews' Quarter, Rome," but equally good we consider is "A Corner in an Old Roman Garden." Mrs. Swainson receives a mention for "Spring Flowers," a delicate floral study. Another good picture by the same worker is "The Turn of the Plough," but the white inner mount is almost fatal to the tones of the print. Mrs. Tugwell also receives a mention for "April with its Changing Light," a bold rendering of a tree trunk against a strongly lit April sky. Guy C. Vachell is the strongest competitor in the club classes this year, and we cannot say but that he has earned the many awards he has received. Seventeen frames represent Mr. Vachell's work for the year, but his awards prove that quality, as well as quantity, has been the object before him. "Evening on the River Mole" we consider his best picture; "The Imposition" has been preferred by the judge. "Portrait of Colonel Heathcote" also receives an award (debarred), and "Study of a Girl's Head" is a particularly pleasing piece of work. In addition to the several awards already mentioned, Mr. Vachell receives the champion club award for the best collective exhibit in the members' classes. Smith Whiting is easily the strongest natural history worker in the club, and this year Mr. Whiting's five frames earn an award and three mentions. "A Story in Three Chapters" represents a pied wagtail feeding a young cuckoo whilst standing on his shoulders, and is of far more than mere photographic interest. This has been the judge's favourite, but "The Gannet" is perhaps quite as strong, and one of the best renderings of the subject that we have seen. C. H. Witt has four frames, of which the best is undoubtedly "On Southampton Common, April 26." F. Watson has a dog study in "Lionel," and Dr. Milner White shows three pictures, "Not for Competition." "Bayeux Cathedral" would have been the best of these if judicious use had been made of the trimming knife. As it is, we prefer "A Stormy Sunset." Dr. Milner White is one of the club's best friends, and members and public alike are always glad to see his interesting work.

The open competitive classes are exceptionally strong this year, but space will only permit us to mention a few of the most outstanding pictures. There are many others, however, with almost equal claims to consideration. A few of the exhibitors of past years are not represented on the walls. Some are new to Southampton, but the bulk of the work is by those who have exhibited year by year, and it is gratifying to find them showing this appreciation of the treatment they have received at other times.

Miss Gertrude Aitchison is best represented by "A Flemish Canal." Herbert Baird is especially good in "Around the Camp Fire," and Mrs. G. A. Barton, to whom the judge has made two awards as strong as ever—"Summer," in particular, strikes us as a most pleasing production. E. W. G. Burder shows good colour work, and receives a well-merited award for "Oranges and Bananas," and "Matter of Opinion" earns a similar honour for Bertram C. E. F. H. and Miss Crouch exhibit some good work this year, and Dan Dunlop follows up his previous successes at Southampton



taking an award with "Edinburgh Castle from Greyfriars." This we consider one of the best things in the class, and certainly the best rendering of this subject we have yet seen. Miss E. M. Gladstone shows distinct promise in "Three Score Years and Ten," and C. H. Hewitt, although he has failed to catch the judge's eye this year, has a particularly fine rendering of a strongly lit face in "The Mirror." The control of light and shade in the last-named picture is masterly, but we cannot help thinking that there should be more suggestion of the mirror. Oscar Hardee scores with "Isabella en Jan Wilden," perhaps actually the finest picture in the show—though "The Harvest that is to be" is but little behind it in excellence—and Heinrich Hinz takes an award and an hon. mention for fine, straightforward photography. Aubrey Harris is well to the fore with "After the Ball," and A. F. Hirschfeld's work is excellent, especially "The thoughts of youth are long, long thoughts," which, like the previous picture, receives a "mention." Ellis Kelsey and V. E. Morris are responsible for some of the best slides in the show, and H. W. W. McAnally, in "An Italian Hillside," is well represented. The Autochrome slides by Captain W. Stomm and P. D. Prior show to the full the possibilities of Messrs. Lumière's plates in careful hands.

Mrs. Ambrose Ralli's best picture is "Algeciras," the composition being pleasing and the general effect bright and sunny, as one would expect such a subject to be. Miss Dendy Sadler shows some delicate work; and another lady, Miss Hilda Stevenson, though not even quite at her best, has a fine oil print in No. 237, "A Portrait." A. Taylor receives an award for his series of natural history prints illustrating "The Life History of the Tawny Owl," although the "Domestic Habits of the Song Thrush," another series of absorbing interest, is practically as good. Miss F. C. Vandamm has a powerful figure study in "The Monk," and other exhibitors of fine work are Miss Agnes B. Warburg, A. W. Ward, and B. C. Wickham.

The most interesting work in the whole exhibition is undoubtedly the fine collection of loan exhibits, and this includes the work of most of the strongest men in the British School. The collection has been carefully arranged in panels, and consequently is shown off to the greatest advantage. The first panel includes four examples of Mr. Arthur Marshall's coloured oils. Chas. Job follows with four of his beautiful South Country landscapes, and in the next panel Alex. Keighley shows four of his strongest pictures. John H. Gear has three small but attractive prints, whilst Mrs. G. A. Barton and H. Blake show four and two respectively. F. J. Mortimer, W. Rooke, Harold Baker, Frederick H. Evans, and J. M. Whitehead each represented by four of their best works, whilst Archibald McPherson and Reginald Craigie are less prominent only in the number of their exhibits.

Thus it will be seen that a very fine collection of pictorial work on show at Southampton, and we can only hope that the financial results and the interest taken in the exhibition by the general public will prove equally satisfactory, and so encourage the committee to fresh efforts in the future.

In conclusion, it may be said that Mr. Arthur Marshall, A.R.I.B.A., Nottingham, has given general satisfaction to all concerned in the capacity of judge; and though his task must have been a difficult one, his efforts have but helped to enhance the esteem in which he has long been held by photographers of Southampton and neighbourhood.

Another feature at the Philharmonic Hall this week is Martin's photographic Stall, where there is a large display of apparatus and other items of interest to a photographic public. Recitals are given daily at 3 and 7.30 upon the Electrical Auxeto Gramophone, with records by Tetrizzini, Melba, Caruso, etc., and an excellent refreshment stall has been arranged by the proprietors of the Bungalow Café.

CAMBRIDGE AND DISTRICT PHOTOGRAPHIC CLUB.—The fourth annual exhibition will be held in the Guildhall from November 11 to 14, inclusive. There will be awards of specially designed bronze plaques for the open classes, with certificates for those exhibitors obtaining a mention, and a silver plaque for the best picture sent in. Entry forms are now ready, and may be obtained, together with full particulars as to fees, etc., from the hon. sec., Mr. T. J. Sowdon, Sunny Side, Guest Road, Cambridge.

## FORTHCOMING EXHIBITIONS.

- September 11 to October 24.—Photographic Salon. Sec., Reginald Craigie, 5A, Pall Mall East, London, S.W.  
 September 17 to October 24.—Royal Photographic Society. Sec., J. McIntosh, 66, Russell Square, London, W.C.  
 October 13 to 17.—Southampton Camera Club. Hon Sec., S. G. Kimber, Oakdene, Highfield, Southampton.  
 October 14 to 17.—Rotherham Photographic Society. Sec., H. C. Hemmingway, Tooker Road, Rotherham.  
 October 22 to 26.—Hove Camera Club. Sec., W. Chater Lea, Cransley Lodge, Dyke Road Avenue, Brighton.  
 October 27 to 31.—Heaton and District Camera Club. Secretary, George C. Urwin, 24, Tenth Avenue, Heaton, Newcastle-on-Tyne.  
 October 28 to 29.—Watford Camera Club. Entries close October 22. Sec., W. Branch, 100, High Street, Watford.  
 November 2 to 11.—Portsmouth Camera Club. Entries close October 24. Sec., F. J. Lawton, 20, Clarence Square, Gosport.  
 November 4 to 7.—Hackney Photographic Society. Secretary, Walter Selfe, 70, Paragon Road, Hackney, N.E.  
 November 11 to 14.—Cambridge and District Photographic Club. Entries close October 29. Sec., T. J. Sowdon, Sunny Side, Guest Road, Cambridge.  
 November 20.—Redhill and District Camera Club. Entries close November 7. Sec., J. Paterson, Ness House, Redhill.  
 November 23 to 26.—Lancaster Photographic Society. Sec., J. Holt, 11, Fern Bank, Lancaster.  
 December, 1908, to January, 1909.—Kiew International Photographic. Sec., S. T. Horovitz, Technical Society, Kreshtchatik, 10, Kiew, Russia.

1909.

- January 6 to 27.—Northern Photographic (Manchester). Entries close December 11, 1908. Sec., S. L. Coulthurst, Broad Oak Road, Worsley, Manchester.  
 February 13 to March 13.—South London Photographic Society. Sec., H. Creighton Beckett, 44, Edith Road, Peckham, S.E.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for Patents have been received between September 28 and October 3:—

- DEVELOPING.—No. 20,396. Improved method of and apparatus for developing exposed photographic plates and films. Felix Trüstedt, Johannes Wegener and Ulrich Wegener, 6, Lord Street, Liverpool.  
 LENSES.—No. 20,415. Improvements in telephoto lenses. Owen Edleston Wheeler, "Strathmore," Prince's Road, Weybridge.  
 SCREEN-PLATES.—No. 20,593. Improvements relating to screen-plates for colour photography. Ilford, Ltd., and Rowland Samuel Potter, 8, Quality Court, Chancery Lane, London.  
 DEVELOPMENT.—No. 20,803. Apparatus for determining the relative times of development of photographic plates or films for different temperatures. Alfred Watkins, Birkbeck Bank Chambers, Southampton Buildings, London.  
 COLOUR SCREENS.—No. 20,909. Improvements in and relating to the method of making polychrome screens for colour photography. Charles Louis Adrien Brasseur, 18, Southampton Buildings, London.

## COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

FLASHLIGHT.—No. 10,440, 1908. The invention consists of an improved form of flashlight apparatus in which a shallow tray is carried by a vertical plate. A barrel is attached to the vertical plate, a spring-pressed piston fitting within the barrel. There are means for raising the piston when required. There is a groove

around the piston and a spring-pressed pivoted trigger lever the nose of which can enter the groove and retain the piston in its raised position, which, when it is required to impart a blow to the striker, can be released from the piston by pressure of the thumb of the operator or by pneumatic pressure on its lower end. James Patrick O'Hea, 133, Rushey Green, Catford, London, S.E.

**PRINTING FRAME.**—No. 10,421, 1908. The invention has for its object a photographic printing frame which will print from a number of negatives all at once, and enable all the prints to be examined by the removal of a single backing. It consists of a frame with two, four, or more compartments arranged in pairs, a clip or flap at one side of each compartment, to retain the negative and the paper in each compartment, by one edge, and a single removable backing to cover the major portion of all the prints and rest on the edges of the flaps, so that by lifting the single backing, all the prints will be disclosed for inspection during the operation of printing. Alfred White, 15, Hillside Road, Wallasey, Chester.

**LADDER CAMERA STAND.**—No. 8,314, 1908. The invention consists of a ladder, or pair of steps which is self-supporting, and folds up when out of use, the camera being affixed to a vertical adjustable pillar mounted on the ladder. Wilfred Asa Fessenden, 240, 1st Street, Newaygo, Mich., U.S.A.

**TELEPHONIC TRANSMISSION OF PHOTOGRAPHS.**—The invention consists in obtaining a photographic record from an acetylene or gas light of variable intensity in unison with sound obtained by means of a gas-box with a vibratory side, actuated either directly or electrically, and a slot behind which is the moving sensitive film.

If a shallow gas chamber be fitted on an open side with a vibratory diaphragm capable of motion in unison with sound the pressure of the gas in such chamber is varied in unison with the sound affecting the diaphragm, and a jet of light supplied by such gas varies in intensity with the pressure of same in unison with the sound.

To obtain this result it is necessary that the pressure of the gas at the inlet to the chamber be greater than the pressure of the gas in the chamber, that is, the opening or inlet to such chamber be smaller than the outlet of the jet, compatible always with a suitable-sized flame; the pressure to exceed as little as possible the atmospheric pressure. The chamber is made shallow to make the gas capacity as small as possible so that the vibrations of the diaphragm may cause the greatest amount of varying pressure of gas in the gas chamber.

The action is as follows:—When the diaphragm is compressed, the pressure of the gas in the gas cavity is increased, and the flame at the outlet jet gives out correspondingly more light. When, however, the diaphragm is in the opposite position the pressure of the gas in the cavity is decreased and the flame loses some of its brightness.

The gas used is an illuminating one, such as coal gas or acetylene gas. When the varying light is allowed to fall on a selenium cell in circuit with a battery, a varying electric current is obtained in unison with the sound causing the variations of light, and if a telephone receiver be placed in the circuit, with or without an induction coil, the sound is reproduced. If an induction coil is used, all effect on the receiver of any continuous current through the selenium cell is obliterated, and therefore the sound obtained is of a clearer nature; but it must be understood that as the voltage of the electric current necessary to pass through a selenium cell, when illuminated, must be light, such induction coil should be made in accordance with such pressure and with a secondary coil suitable for the resistance of the telephone receiver to be used.

For permanently recording the variations of light, the phonograph may be photographed by allowing it to fall on a slot or opening behind which a sensitive photographic film is passing at a suitable speed. When the exposed film is developed, a continuous band of silver deposit is obtained, but of varying density according to the variation of the light.

The light may be used direct or passed through a condenser or focussed by means of a lens on the opening. A negative is thus obtained from which a positive is made.

On passing the positive before a steady light placed behind a similar slot or opening to that originally used, variations in the steady light are obtained exactly similar to the variations of the original light, and if this light be allowed to fall on a selenium cell connected with a battery, and telephone receiver, with or without an induction coil, the sounds which caused the original variation of the

light are reproduced. Josiah Frederick Child, "Clovell," 258, Rosendale Road, Herne Hill.

**THREE-COLOUR SCREEN-PLATES.**—No. 3,252, 1908. The invention relates to three-colour screens for colour photography and to an improved process for making, by which the coloured gelatine is reduced to an extremely fine granular state of equal sized grains advantage being taken of the great transparency of gelatine and the property it possesses when desiccated of expanding by the absorption of atmospheric or other moisture. A supporting sheet of transparent celluloid is covered with an even layer of dried transparent grains of gelatine in the three primary colours of the spectrum, the grains being arranged in close contact with each other. After being arranged on the sheet of celluloid the gelatine grains undergo expansion by absorption of moisture from the air under preferably normal atmospheric conditions, or expansion may be attained by the application of a solution of gelatine, then dried and when in such state the grains are forced preferably by rolling pressure into the surface of the celluloid sheet and afterwards coated with celluloid or other varnish, and when dry are again rolled, preferably under slight heat, and if desired may be used on a glass support also. The improved process is as follows:—

1. In dyeing, three separate portions of gelatine (preferably gelatin sheet) in the three principal colours of the spectrum—orange-red, green, and violet.

2. Soaking the dyed and dried gelatine in formaldehyde 15 per cent. solution, after which it is again allowed to dry.

3. The formalysed gelatine is then immersed in water and allowed to expand to its fullest extent, after which it is removed and the external adherent water shaken off. In this state the gelatine is in an extremely brittle condition, and can readily be reduced to a fine granular state by means of the ordinary grinding mill. Should the gelatine be allowed to lose much of the absorbed water during grinding it will regain its natural toughness, and cannot be reduced unless water is added in sufficient quantity to expand the gelatin again.

The finer grinding is most effective when conducted under temperature of about 200 deg. Fahr., when the powder may be allowed to gradually become dry, and the grinding continued until that condition.

The gelatine powder thus obtained is in grains of various sizes. The means employed to separate the grains into various grades of fineness—each grade being in grains of approximately equal size—is a process of elutriation.

The elutriation is done in petroleum spirit of about 700 sp. g., but any other suitable spirit (not absurd by gelatin may be employed. By this process coloured gelatine grains may be selected in batches of equal sized grains, from, say, 1-500 to 1-3000 of an inch in diameter, or plain undyed formalysed gelatin may be reduced to a granular state and then separated into various grades of fineness, after which batches may be dyed in the three primary colours, but the former method is preferable, as by greater transparency of the grains is obtainable.

Three dried batches of coloured gelatine grains thus obtained—orange-red, green, violet, of a size most suitable—are then intimately mixed in such proportions that by reflected white light the mass of combined colours presents the appearance of a neutral grey tint.

To prepare the screen, a sheet of transparent celluloid is thinly and evenly coated on one side with a solution of celluloid and resinous gum, which will remain in a tacky condition during the time necessary to form the screen.

The mixture of coloured gelatine grains, made perfectly dry at a temperature of 212 deg. Fahr., may now be applied (in a desiccator) to the tacky surface of the celluloid sheet by a suitable means, so that the grains are evenly distributed in close contact with each other over the surface in one even layer.

If the screen thus far formed, be now removed to a room under normal atmospheric conditions, each coloured grain will slightly expand by the absorption of the moisture present in the air, and will interlock with its neighbours. After the proper expansion, with the grains the screen is passed under pressure between polished metal rolls, which forces the grains into the surface of the celluloid and fixes their position. The screen may now be coated with celluloid or other varnish, and, when dry, again passed through



rollers. John Bamber, 56, Lansdowne Road, South Lambeth, London, S.E.

**DEVELOPING TANKS.**—No. 1,329. 1908. According to this invention a rack is provided having perforated ends adapted to support a number of plates on edge and out of contact with each other. The rack is used in conjunction with a fluid-tight receptacle or tank of greater depth than the corresponding dimension of the rack, within which the latter fits, and is adapted to slide in two directions, the openings through which the plates have been inserted being closed by a wall of the tank. The latter is filled with solution to a depth sufficient to cover the plates, and by reversing it at intervals, end for end, the rack is also inverted, the liquid flowing freely throughout its length by reason of the perforated ends of a special rack, and also forming a buffer to prevent the effects of a too severe impact of the rack against that wall of the tank towards which it is travelling. Further, as the usual rectangular form of a plate makes it convenient to construct both the rack and tank of similar shape, a suitable device, in no way interfering with the foregoing manipulations, is provided for effecting the fluid-tight engagement of the cover by a rectilinear rather than a rotary movement relatively to the receptacle. Kodak, Ltd., 57-61, Clerkenwell Road, London, E.C.

**COLOUR SCREEN-PLATE TRANSPARENCIES.**—No. 21,684. 1907. The invention relates to the production of continuous-tone three-colour prints and sets of negatives from screen-plate transparencies. It is found that, even if the positives be prepared by contact film to film with the colour negative (in which case such positives are markedly discontinuous in tone), sufficient continuity of tone may be obtained by preparing prints from the same by a process involving transfer of dye from a gelatine print, plate, or the like to gelatine-coated paper or the like, such as the pinatype process. The diffusion of the dye gives the required continuity of tone if the grain in the colour negative be fine enough. Satisfactory prints can be obtained in this manner from Autochrome plates with remarkably little loss of definition.

In obtaining prints in this manner the high-lights are kept clean, whilst the tendency to dilution of the shadows by white may be practically eliminated.

Substantially continuous tone-negatives can be prepared from screen-plate positives, and prints can then be prepared from such negatives by well-known processes. In order to avoid discoloration of the high-lights by black and by colour it is essential that the negatives should possess in a high degree continuity of tone in the parts corresponding to the high-lights. In preparing prints from coloured positives on screen-plates the requisite continuity of tone must be obtained in one operation—namely, in preparing the negative transparencies.

Furthermore, small errors in tone in the shadows are far less noticeable than impurities in the high-lights. It is therefore recommended to work from colour negatives. When preparing prints by the pinatype or other process there is no occasion to obtain continuity of tone in the positive transparencies, and it is preferable to use a stop having a much smaller aperture, such as one quarter inch or equal to one-thirtieth of the distance between the diaphragm and the colour negative, thus greatly improving definition. With screen-plates other than the Autochrome other stops may be used according to the grain.

When making enlargements the use of a heavily coated paper is desirable to assist the diffusion. Diffusion may be increased by heating the print whilst moist, also by retarding the drying. It will be found that each grain in the colour negative is represented in the positive transparency by a spot the size of which depends upon the diameter of stop used, but the centre of which is materially darker than the surroundings. By the use of a large enough stop the dark centres of adjacent spots may be made to blend, but in doing there is some loss of definition. Improved definition is obtained by the use of a diaphragm, screened so as to cut off some of the light at the centre, thus a stop having a star-shaped obstruction may be employed, or a graduated stop darkest in the centre may be prepared photographically. Such means are not required except when the grain is too large to be conveniently dealt with by diffusion in printing.

When employing symmetrical screens with spots in square formation a diaphragm should be employed with a square hole, shaded if

necessary as above described. In a similar manner a shaded rectangular stop may be employed with line screen-plates, and other forms with other formations, but where enlargements are not required it is preferable to adopt finely divided colour negatives and to employ diffusion in the printing process.

The invention also includes apparatus for the printing of the plates. Edmund Basil Wedmore, 167, Clifton Road, Rugby, Warwickshire.

**COLOUR SCREEN-PLATES.**—No. 23,812. 1907. The first claim is for "a process for the production of colour-screens built up of hexagonal elements, consisting in ruling parallel line screens with lines of suitable width, combining films produced from them in three layers, having the lines crossing at angles of 60 degrees to form clear hexagons upon a black ground, printing black and white screens from the combined film, and producing the colour-screen from the hexagonal black and white screen by successive printing and registration in the colours employed."

The starting point of the process is a transparent plate, such as that shown in Fig. 1, which is made photographically from a handmade original or by other means. It is found that an hexagonal screen, containing 100 to 150 cells per linear inch, produce as good

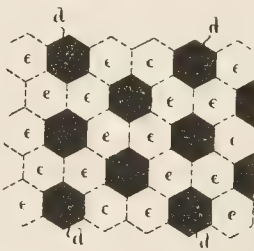


Fig. 1.

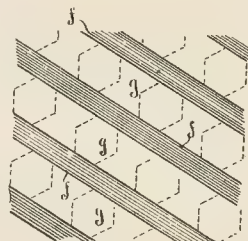


Fig. 2.

an effect, owing to the broken pattern, as line screens of 400 to the inch. The colour screens are printed in three operations in a registering frame, to be separately patented.

A less direct method of forming the hexagonal screen is illustrated in Figs. 2, 3, and 4, this process being based upon parallel line screens and giving a fineness of pattern limited only by the degree of fineness to which line screens can be made. The effect

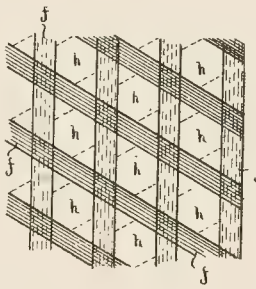


Fig. 3.

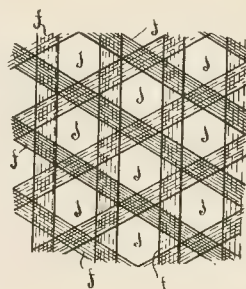


Fig. 4.

produced by hexagonal screens of such fineness as this greatly exceeds that of any present method. Fig. 2 shows a plate in which the thickness of the black lines *f* is exactly half of that of the clear space *g* between. Two films of this type are prepared from a negative having the black lines double the width of the clear spaces, and the films are prepared so that they strip easily if required from their glass supports. The films are cemented together face to face, with the lines exactly at 60 degrees to each other, and on stripping off one glass a plate is left of the type illustrated in Fig. 3, with diamond-shaped spaces *h* between the crossing lines. This plate is again combined with a film of the type shown in Fig. 2, set at an angle of 60 degrees, with both the lines in Fig. 3 producing the plate of Fig. 5, in which hexagonal spaces *j* are left uncovered by the three sets of lines *f*. A positive from this plate

gives the black and white screen of Fig. 1, forming an original from which printing blocks or coloured screens can be obtained on glass or other transparent support for negatives and transparencies, or paper or other materials for positives and enlargements.

The specification also illustrates the various ways in which screens of hexagonal formation can be made from ruled lines or

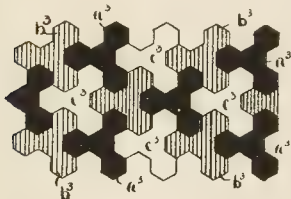


Fig. 5.

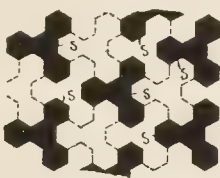


Fig. 6.

screens of different relation of line to space. Thus, Figs. 5, 6, and 7 show a system of cells each of four hexagons, forming an interlocking pattern. The colour cells are marked  $a^3$ ,  $b^3$ , and  $c^3$  in Fig. 5, and this type of screen is probably the most perfect for photographic purposes. It is produced in a very simple manner from ruled screens, having black lines of twice the width of the clear spaces, which are combined in the manner already described to form the plate indicated in Fig. 7, leaving clear cells  $r$  at the desired intervals. From this positives can be obtained. By combining these the black and white screen of Fig. 6 is obtained,

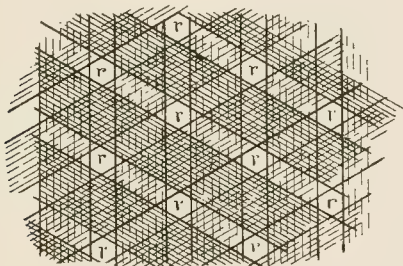
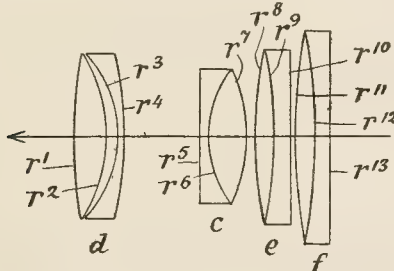


Fig. 7.

with cells  $s$  of four hexagons, forming the original for the final coloured screen of Fig. 5.

For enlargements the paper or plate is prepared with the same designs in hexagons of increased size and coated with emulsion. Registration is obtained by including registering marks in the original screen. Or the negative may be reversed, registered by sight, the positive printed, and the image of the print reversed. James Mark Child, B.A., B.Sc., 47, Harrington Street, Pear Tree, Derby.

CINEMATOGRAPH LENSES.—No. 5,504. 1907. The invention consists of "a projection lens, in which an increased effective power of the back member, as regards bringing the beam of light to a focus



sooner, is obtained by separating it from the front member a distance equal to at least half of the focal length of the front member."

Thus in the figure a Petzval lens of the type used in ordinary cinematograph lenses, consisting of a cemented front combination  $c$  of 9 cm. focal length and a non-cemented combination  $d$  of 15 cm. focal length is modified by slightly decreasing the separation and is reversed as shown, so that the more powerful combination  $c$  is nearest the film. At a distance (which may be varied from .1 to 4 mm.) from the front surface, an achromatic combination  $e$  of 15 or 10 cm. focal length is added. The variation of the distance may be used to give greater or less magnification. If still greater magnification is desired, the two achromatic combinations,  $e$  and  $d$ , of 10 and 15 cm. focal length respectively, are used as shown. The distance between these lenses may be made as small as possible but may be variable to alter the equivalent focal length. The achromatic combinations are each made of hard crown and dense flint glasses, and are made with one surface, which is nearest to the film. Robert Alfred Ives, 21, Melgund Road, Highbury, N.

## New Trade Names.

TENAX.—No. 299,170. Photographic cameras and lenses. Optische Anstalt C. P. Goerz A.-G., 44 and 46 Rheinstrasse, Friedenau near Berlin, Germany, manufacturers. December 30, 1907.

## New Books.

"The Adventures of Cock Robin and His Mate." By Richard Kearton. London: Cassell and Co., Limited. 3s. 6d.

Another gift-book of the hedge-row from the pen of Mr. Kearton and in good time for the Christmas season. And this time the reading is for children of a rather tenderer age than the whom the author has hitherto addressed. We cannot help compare these many printed pages, almost each illustrated, with those of certain "Walter in the Woods" which in our infant days were offered to us as a convenient and agreeable introduction to the study of natural history. A somewhat priggish Walter was there instructed on the Sandford and Merton system, and caused to assimilate truths of nature all ready digested for him. Mr. Kearton is more scientific in his method, more educative, and a thousand times more entertaining. He presents Nature from the point of view of the very humiliated and frightened robin, of whose adventures, not to say amours, he writes in 240 pages of autobiography. The photographs and the reproductions are quite up to the standard of the previous volumes by the same author.

"Das Photographieren." By J. F. Schmid and R. Herget. Vienna and Leipzig: A. Hartleben.

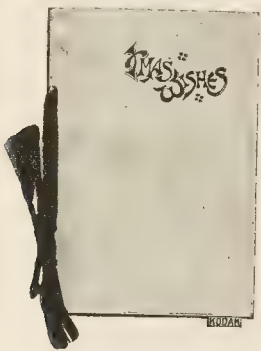
This is a second edition of No. 168 of the well-known technical library of the firm of Hartleben, and is issued, at the price of 6 marks. It is a very comprehensive treatise on amateur photography, well arranged and indexed, and evidencing a knowledge of his subject on the part of the author. As befits its place in the series the volume deals more particularly with the chemical side of photography, and gives full formulæ for the preparation of developing and intensifying solutions, etc.

CRIPPLEGATE PHOTOGRAPHIC SOCIETY.—In view of the success attending the series of lectures given by Mr. Coe during the season, the Committee of this City society have considered it in the interest of members to enter into an arrangement whereby all have the opportunity of further benefiting by Mr. Coe's practical experience and teaching. Another new feature of this session will be a series of "One Man" shows, when a number of pictures by well-known workers will be exhibited in the lecture hall once a month. The meetings commence at 7.30 as hitherto, but the hall will be open at 7 p.m., thus a profitable half-hour may be spent in company notes and chatting over difficulties with other members. An excellent opportunity is thus presented for members to become mutually acquainted. The hon. sec. of the society is Mr. H. S. Cuming, North End Road, West Kensington, W.



## New Materials, &c.

**"CHIC" CHRISTMAS MOUNTS.**—The series of mounts issued under this name by the Kodak Company reach us this year in pleasing variety, and form a tasteful setting for photographs intended to be sent as Christmas greetings. They are of both the slip-in and paste-in pattern. Among the former No. 274, as shown in the illustration,



is a nice example of the series. It is of marbled surface-linen paper, with an embossed greeting in brown, and has a thick white inset mount with pale green decoration. The prices vary from 3s. to 3s. 6d. per dozen, 34s. 6d. to 40s. 6d. per 1,000; and other numbers of the series, including some of the calendars, are equally dainty in style and moderately priced.

## CATALOGUES AND TRADE NOTICES.

**MOULDINGS AND FRAMES.**—A new large list of Messrs. J. Epstein & Co., of Rupert Street, Bristol, shows the up-to-date selection of mouldings and styles of frames made and stocked by this leading firm. Messrs. Epstein can offer a variety in all classes and prices of frames, and their list, fully illustrated as it is, is quite worth the trouble of being charged for it.

**PHOTOGRAPHIC ALBUMS.**—A very fine and well-illustrated price list of albums for photographs and postcards reaches us from the Deutsche A.G., 90, Ritterstrasse, Leipzig, by whom a copy will be sent to any reader of the "B.J." The list also includes particulars of the firm's other specialties, such as slip-in and other mounts, film storage albums, folder and portfolio mounts, passe-partout materials.

**WRATTEN PLATES AND FILTERS.**—The 1908-9 list of Messrs. Wratten and Wainwright, Ltd., Croydon, is much more than a list. It is a series of what the newspaper editor calls "pithy paragraphs." These Messrs. Wratten, presumably through their scientific director, Mr. C. E. K. Mees, speak of many things—of fog and how it may be caused at exposure or in development; of markings on negatives which are the fault of the plate-makers, and of others which are not; of emulsion, which no backing remedies; filters, and a test for optical flatness; in short, of matters of importance to any plate-user. The list, which does incidentally give the prices of the Wratten products, is sent free, and is worth asking for.

**SOUTHAMPTON CAMERA CLUB.**—The Members' Year Book for the year 1908-9, has just been published, and shows this active seacoast society to be still strong in its policy of "presenting" members drawn from the leading workers of the day. Mr. S. G. Green has our congratulations on the production of a most attractive fixture list. Our readers within reach of Southampton should certainly apply to him at Oakdene, Highfield, Southampton, for a proposal as members of the Southampton Club.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

#### SATURDAY, OCTOBER 17.

Blackburn and District Camera Club. Exhibition of Member's Work.  
Birmingham Photographic Society. Annual Meeting of Midland Photographic Federation.

#### MONDAY, OCTOBER 19.

South London Photographic Society. Monthly Competition—Prints.  
Bradford Photographic Society. "Some Mountains and Glaciers of Switzerland." A. E. Hassé.  
Stafford Photographic Society. "Printing, Developing and Toning of Velox Paper." W. F. Slater.

#### TUESDAY, OCTOBER 20.

Leeds Photographic Society. "Lumière Autochrome Plate." Thomas K. Grant.  
Birmingham Photographic Society. Annual General Meeting.  
Hackney Photographic Society. "Some Ancient Abbeys and Churches of South Essex." C. Forbes.  
Manchester Amateur Photographic Society. "Some Points in Picture Making." G. E. Mellor.  
Chiswick Camera Club. "Carbon Printing." T. A. Coysh and H. S. Hopkins.  
Wimbledon and District Camera Club. "Carbon." Demonstrated. D. H. Magnus.

#### WEDNESDAY, OCTOBER 21.

Leeds Camera Club. "Making and Toning Lantern Slides." Rev. Henry W. Dick.  
Wimbledon Park Photographic Society. "The Selection of a Printing Process." W. Cheeseman.  
Croydon Camera Club. "A Ramble Round London." H. Creighton Beckett.  
North Middlesex Photographic Society. "A Few Hints on Copying." S. H. Bentley.

#### THURSDAY, OCTOBER 22.

L.C.C. School of Photo-Engraving, Bolt Court. "Large Size Engravings and Illustrations for Publishers." F. C. Batter.  
Handsworth Photographic Society. "The Production of Christmas Cards by Photography." E. G. Collins.  
Liverpool Amateur Photographic Association. "Platinotype Printing." C. F. Inston, F.R.P.S.  
Richmond Camera Club. "The Humble Beauties of the Flower World." E. Seymour.  
North-West London Photographic Society. "Gower." J. S. Fairfoul.  
Blackburn and District Camera Club. "Swiss Scenery." Dr. C. Thurstan Holland.

**GLASGOW PHOTOGRAPHIC ART CIRCLE.**—At the last monthly meeting of the Glasgow Photographic Art Circle a lecture was delivered by Mr. J. Craig Annan on "Photography as a means of Artistic Expression." In reply to the question that was often asked if photography can be a means of artistic expression, the lecturer said he would most unhesitatingly reply in the affirmative. Each art describes some æsthetic quality, and in this respect photography was no exception. At first, photography was at a disadvantage, as it was taken up by those who were for the most part of a scientific turn of mind, and they are generally devoid of artistic imagination. Prints were made by them and shown, and the accredited artists looked askance at the productions of the scientist. Many of the same class at one time thought Whistler as a painter an impertinent charlatan. It is being realised now that a new art-craft is being evolved with pictorial photography, one that has not yet achieved any commercial status. One cannot, of course, expect the patron to anticipate the process, and collectors are to be excused until the artistic side of photography becomes established. One of the earliest photographers, D. O. Hill, while an artist, was for a time much engrossed in photography, and found it a medium capable of expressing his noble thoughts. Slides were shown illustrative of Mr. Hill's work, also of Mrs. Käsebieber, Steichen, Robert Demachy, Clarence White, and many other prominent artistic workers. One picture of considerable interest was Mr. George Davison's "Onion Field," which with some others contributed to the formation of the now famous London Salon exhibition, and the banding together of the body of artistic workers known as the "Linked Ring."

**BATH PHOTOGRAPHIC SOCIETY.**—On Thursday, October 1, the annual meeting of the Bath Photographic Society was held at the Royal Literary and Scientific Institution, when a fair number of members were present, the President, Mr. Mowbray A. Green, being in the chair. Mr. W. J. Hallett, the hon. secretary, read the annual report, which stated that the success achieved by the Society during the first session had been well maintained, and a

goodly programme of meetings had been well attended. The session commenced with a membership of 95, and this steadily grew until 114 was reached, but through resignations the number now stood at 98. Mr. Lewin, the financial secretary, then presented the financial statement, which showed a slight deficit on the year's working. The report was adopted, and votes of thanks were passed to Messrs. Chester and Gould for their services as auditors. Mr. Mowbray Green proposed as President for the ensuing year the Rev. James Dunn, who was the senior vice-president. Mr. Hallett was re-elected hon. secretary for the third time. The following were elected on the council: Messrs. Rossiter, Lewin, Cooling, Harbutt, Burgess, and Woodward, and Dr. Symons.

## Commercial & Legal Intelligence.

**THE FREE ENLARGEMENT AT NEWPORT PAGNELL.**—Before the Newport Pagnell Special Petty Sessions last week Max Wolff, reproducer, framer, etc., of 6, Somerset Terrace, Duke's Road, London, W.C., was brought up on a warrant charged with false pretences—viz., with unlawfully and knowingly, by a certain false pretence, obtained of, and from one, Sarah Lacey, at Great Linford, on October 2, a certain photograph.

Sarah Lacey said she was the wife of Thomas Lacey, and resided at Great Linford. On October 2 prisoner called at her house before dinner, saying that he came from Mr. Thorneycroft's (photographer, Wolverton), and produced a picture, remarking that Mr. Thorneycroft had a commission from a large firm in London to enlarge a certain number of photographs, and wished to get a dozen from Linford; also, that they had taken (rented) the old post office in Newport Pagnell, and that they would get proofs by the middle of the next week; if she approved of them, and thought them good enough for framing, he would bring frames for her to buy, and that that would be the only expense she would be put to, the other (plates) being paid for. Witness then gave him her mother's photograph, adding that if she liked them she would have some more later on. Defendant Wolff took the photograph, which she valued at 1s., away with him, and she never saw it after.

By Inspector Anthony: He made no arrangement as to when he would return the photograph.

By the Clerk: He did not say what the cost would be. The enlargement produced I have not seen before till in court. My own photograph was cabinet size, and the enlargement is a proof. He (Wolff) produced something like the enlargement and showed me, but nothing was said about the money.

Mr. Chantler: The point is that she thought the enlargement was to be done by Mr. Thorneycroft.

The Clerk was of opinion that that really did not matter, contending there was no false pretence at all.

In answer to Mr. Chantler (chairman), Wolff said, "I'm prepared to give her back the picture; it lies in London, at six, Somerset Terrace."

Inspector Anthony: I may say they have brought forty-eight proofs to the district. (In explanation of "they," there was a good-looking young lady "colourist," apparently accompanying Wolff.)

Defendant said he was staying at "Speedwell." Witness did not give him an order; it was merely a speculation; if they liked to buy they could; if not, there was an end to it.

By the Clerk: I will hand the photograph to Inspector Anthony. The enlargement is nothing, and the frame is 12s.

The Chairman said they had decided to dismiss the case, as there was not sufficient evidence, and, pointedly addressing Wolff, said, "But you are sailing very close to the wind, going about the country representing yourself as working for people you are not."

Mr. Thorneycroft (adds the "Bucks Standard") was present, and strongly wished to give evidence, but in the circumstances it was thought unnecessary by the ruling powers, a somewhat peculiar feature apparently, as we understood he was the prosecutor and really the aggrieved party.

**EASTMAN KODAK COMPANY OF NEW JERSEY.**—The directors of the Eastman Kodak Company of New Jersey have declared an extra

dividend of 5 per cent. upon the Common Stock of the company payable December 1, 1908, to stockholders of record at the close of business on October 31.

**AT THE KINGSTON COUNTY COURT,** on October 9, before his Honour Judge Harrington, J. P. Catford, photographer, of 2, Lansdown Villas, Hampton Wick, applied for his discharge. The Official Receiver's observations were to the effect that the public examination of the debtor was held in April, 1902, when the liabilities proved amounted to £950. The assets realised £99, and a first and final dividend of 1s. 2½d. in the £ was paid. Mr. G. Washington F. solicitor, for the debtor, in asking that the discharge at the expiration of the minimum of two years, said the debtor attributed his bankruptcy to the failure of two companies with which he was connected, and from which he was expecting to receive a substantial salary. His Honour granted the discharge, subject to the usual suspension of two years.

**FOOTBALL COUPONS AND PORTRAIT ENLARGEMENTS.**—George Wm. Moore, photographer, 31, Princes Street, and Andrew Taylor, gardener, 59, Blackscroft, the two men who were implicated in the recent football coupon raid, again appeared in Dundee Sheriff Court yesterday—before Sheriff Campbell Smith—to answer to a charge of having on and between August 22 and September 19, 1908, opened, kept, or used a house at 31, Princes Street, and a shop at 60, King Street, for the purpose of money being received by them or on their behalf as a consideration for an undertaking or promise to pay money thereafter on events or contingencies of or relating to games of football, contrary to Sections 1 and 3 of the Betting Act, 1853.

Superintendent-Detective Lakie was the first witness called in the prosecution. He stated that, acting on information he had received, he obtained a warrant to search the premises occupied by Moore. Moore had personally and through his agents been distributing coupons, and in consequence of this, on August 25, Superintendent-Detective Lakie sent for Moore and warned him against continuing to send these coupons out. On that occasion Moore promised to stop it, but shortly after this several anonymous letters were received by Chief-Constable Dewar saying that the football coupon system was again going on. In consequence of that information a warrant was issued on September 18. On the following day Moore's house was visited, and the two accused and Moore's wife were discovered counting the coupons. The coupons bore the name of Dundee Portrait and Enlargement Club, and proved to be an order for an enlargement of any portrait, the inclusive price of which was to be 21s.—this sum to be paid by weekly instalments of 6d. Each of the customers was entitled to take part in a football guessing competition. The names of four football matches were printed on order forms, and the customers were entitled to fill these up with the likely scores. From the house in Princes Street and the shop in King Street they collected altogether 2,825 coupons, the dates of matches on these coupons ranging from August 22 to September 19. They also found a bag containing £14 6s. in gold and silver and a few coppers. A receipt book with the names of the winners was also found and confiscated. Books containing the names of the customers, the names of agents, and lists of prize-winners were discovered. From the papers confiscated it appeared that agents were paid a commission of 3d. on every 1s. they brought in. The back room of the shop was empty, and in the house the photographic materials were packed away in a press.

Questioned by Mr. Strachan, solicitor, who appeared for the accused, Mr. Lakie said he did not believe any enlargements had been sent out at all. A sum of £12 in money was paid weekly for prize-money. Enlargements like those offered by Moore could be obtained in Dundee, said Mr. Lakie, for a sum of about 10s., whereas Moore was charging 21s. for his enlargement. Taylor, when charged with betting by the officers, said he had only come to help his son-in-law to count the coupons.

Corroborative evidence was given by the other detectives who took part in the raid on Moore's house and shop.

Moore, on his own behalf, stated that he was a photographer and a portrait enlarger. For the past 18 months he had carried on his business in Dundee, and for 12 months previous to coming to Dundee he had carried on business as a photographer in Edinburgh.

In reply to a question by Mr. Strachan, Moore said he found it better to send the photographs away to be enlarged. Q.



number of his customers, he said, were perfectly satisfied with the enlargement without taking part in the competition, and some of the older forms were returned without the competition form being filled in.

A number of persons who had had enlargements made by the accused gave evidence to the effect that they were perfectly satisfied with the enlargements, apart from the competitions altogether, and that they considered the enlargement cheap at 21s.

The Sheriff found Moore guilty, but acquitted Taylor, his reason for convicting Moore being that his system was a combination of the lawful and the unlawful. A fine of £5, with the alternative of 40 days' imprisonment, was imposed on Moore.

**LEEDS FAILURE.**—At Leeds, on Monday, the first meeting of creditors was held in the case of Henry Morton Pearce, carrying on business in County Arcade, Leeds, under the name of "Morton's Star Photo Company." The liabilities were set down at £448, and his assets at £59. Failure was ascribed to heavy rent of business premises and bad trade. No resolutions were passed, and the case remains in the hands of the Official Receiver.

## News and Notes.

**ROYAL PHOTOGRAPHIC SOCIETY.**—The following lectures will be delivered at the New Gallery, those illustrated with Autochromes at 7.30, the others at 8 p.m.:

Friday, October 16.—Autochrome lecture, "The Thames from Kew Gardens to the Sea." By J. McIntosh.

Saturday, October 17.—"Some English and French Gothic Churches." By Henry W. Bennett, F.R.P.S.

Sunday, October 19.—Autochrome lecture, "The Thames from Cirencester to Maidenhead." By J. McIntosh.

Tuesday, October 20.—"Flower Photography." By E. Seymour.

Wednesday, October 21.—Autochrome lecture, "The Thames from Windsor to Richmond." By J. McIntosh.

Thursday, October 22.—"Life and Work on the Panama Canal in 1908." By Vaughan Cornish, D.Sc., F.R.G.S.

Friday, October 23.—Autochrome lecture, "The Thames from Kew Gardens to the Sea." By J. McIntosh.

Saturday, October 24.—"The Camera and the Sea." By F. J. Mortimer, F.R.P.S.

**LECTURES AT THE NEW GALLERY.**—The lantern lectures at the New Gallery during the Royal Photographic Society's exhibition have been well patronised, although in several cases they had been previously delivered before the Society, and were therefore not fresh to a number of the frequenters of the Exhibition. One of the raciest of the lecturers was Mr. George E. Thompson, of the Liverpool Amateur Photographic Association, who told the story of a photographic tour a little-known but not remote part of the Continent—the region of Cevennes, between Lyons and Marseilles, in Southern France. In this district there are wonderful volcanic formations, and the gorges of the river Ardèche present a wonderful spectacle to which ordinary monochrome rendering does not do justice. Mr. Thompson followed the plan of colouring his slides, and although this work was excellently carried out, the chief point of interest in the lecture was its literary grace and impromptu poetry, and amusing descriptions of a life en pension in a French spa. Why should the MS. so often be a mere tag to a set of slides? In the small towns of this part of France, says Mr. Thompson, the people are invariably amused watching the photographer at work, but they are never obtrusive, the country lasses are very "posable." Among other lecturers the Gallery have been Mr. W. Bickerton, who demonstrated how useful is the exercise of guile in photographing wild birds, and Mr. W. Harvey-Piper, who suggested that those who are looking for a scene in which to photograph and sketch might do worse than go to Northwold, the tiny cathedral town of Nottinghamshire, where the view from the chapter-house is of a kind unexampled elsewhere in England.

**GOERZ LECTURES.**—Messrs. C. P. Goerz, 1 to 6 Holborn Circus, London, E.C., advise us that they have a series of six different lectures for loan to photographic societies. The slides and lectures are

lent without charge, but each society is expected to pay carriage one way. The series includes "Sports and Pastimes with the Goerz-Anschutz Folding Camera," an exceptionally fine collection of seventy-four slides of athletic and sporting subjects, with a commentary on the slides by a well-known athlete; also hints useful to the photographer on fast exposures and development, and a few remarks on the relative efficiencies of focal-plane and lens shutters; "Telephotography," illustrated by 79 slides; "Stereoscopic Photography," accompanied by a number of stereoscopic slides illustrative of points referred to in the lecture, and specimens of stereoscopic photography. For viewing the slides six stereoscopes are sent with the lecture. "Pictures with the Goerz Lens," a collection of 112 slides of instantaneous, architectural, pictorial, and general subjects. "The Photographic Lens," illustrated by fifty-three lantern slides and two models. "What can be Done with a Hand Camera," illustrated by 107 lantern slides.

**AUTOCHROMES AT THE POLYTECHNIC.**—The opening night and social reunion of the photographic school of the Regent Street Polytechnic took place on Tuesday evening last, when a full house of students and their friends assembled to witness a series of projections of Autochrome transparencies, the majority of which were contributed by MM. Lumière, of Lyons, and represented certainly the finest Autochrome results which we have yet seen on the screen. They were projected from a lantern placed behind a semi-transparent screen, to the front surface of which a heavy gold frame was fixed with the object of giving all the appearance of a picture to the projected transparency. It says much for the ingenuity of Mr. Howard Farmer and his assistants that in the great majority of cases the picture fitted the frame, although the actual slides, we were informed, were of various sizes. The fact, however, that, at any rate to those at some distance from the screen, the gold frame was practically invisible, largely discounted, in our judgment, the trouble involved in its use, although in other respects the projection of the pictures was excellent in every way. Yet we would have wished to have been spared the constant alternation of two illuminated signs, one in red, green, and violet and another in white, on a screen above the projected Autochromes; the effect became distracting after an hour of it.

On the proposition of Mr. Farmer, a resolution of thanks and congratulation was passed, and was communicated to Mr. T. K. Grant for transmission to MM. Lumière. Mr. Grant, in acknowledging the compliment on behalf of his Lyons friends, also spoke as to the technical methods of treating the Autochrome plate, and urged the audience to adhere to the makers' directions, which, despite the great amount of published matter relating to the process, were still the best for the purpose.

**EXHIBITION OF CHILDREN'S PORTRAITS.**—Messrs. Speaight, photographers of children, are organising an exhibition of children's portraits. The exhibition will be held in the company's New Bond Street galleries next season, and in many cases the mothers will be portrayed with their children. The Princess of Wales and the Crown Princess of Sweden have both given their approval to the proposal by honouring Messrs. Speaight with sittings from their children in order that the portraits may be included in the exhibition. The Queen of Spain's private secretary has intimated that special sittings from the Queen and her children will be given to Mr. Richard Speaight in Madrid. Mr. Richard Speaight has been summoned also to Berlin in order that he may have sittings from the Crown Princess of Germany and her children.

**ENTRIES** for the forthcoming Hackney Photographic Society's exhibition will be received up to Monday, October 26.

**DEATH OF PROFESSOR VON JAN.**—Herr von Jan, well known in photographic circles as a photographer of the female form, was drowned on Tuesday last at Scilly. The professor had been staying at Scilly for some weeks with a young lady friend, and intended spending the winter there. When walking at Penderennis about noon he left the young lady reading, and descended the rocks to take photographs. Anxious at his long absence, the young lady went to the edge of the cliffs and saw his hat floating in the water. In great distress she ran to the town, but being unable to speak English she could not be understood until an interpreter was

brought. The rocks and coast were thoroughly searched, but without result. It is presumed the professor slipped and fell into the sea.

## Correspondence.

- \**We do not undertake responsibility for the opinions expressed by our correspondents.*
- \**Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*

### THE RECENT EXHIBITION NUMBER OF THE "B.J."

To the Editors.

Gentlemen,—Just cannot resist writing to say how much the issue of the 18th inst. was appreciated. The accounts of the R.P.S. and Salon exhibitions were excellently done, the sprinkling of gentle sarcasm gave them spice.

It would be impossible to write about the "Links" in a style as serious as they take themselves, so the alternative is to treat them humorously.

The groups of the selecting committees were extremely interesting, for the reason that the names of Major-General Waterhouse, Beck, Wall, Newton, Lewis, Mees, and Mummery are well known in the U.S., and it was almost like meeting them socially to see them in the easy attitudes in which they were shown.—Yours sincerely,

S. H. HORGAN,

Ed. "Process Engraving Notes," "Inland Printer."

602, River Street, Hoboken, N.J., U.S.A.

September 29, 1908.

### RETOUCHER'S THUMB.

To the Editors.

Gentlemen,—I shall be glad if you or any reader of your paper can recommend any treatment which may benefit me. My thumb has almost become powerless through, I presume, retouching. The doctor recommends me to massage it, but that does not appear to be producing much improvement. Perhaps some of your readers have been in the same predicament, and will be able to give me some advice, for which I would be extremely grateful.—I remain, respectfully yours,

ARTIST.

### THE 6 x 4 PLATE.

To the Editors.

Gentlemen,—We notice in your "Answers to Correspondents," of your issue October 9, that a gentleman is inquiring whether cameras are obtainable to take plates 6in. x 4in., which he notices are now being listed by some plate-makers. The size in question is very little different from the size 15 x 10 cm. (actually 5½ x 3 15-16), which size is being introduced on the Continent as a substitute for the present so-called postcard plate. As you know, the latter is either 5½in. x 3½in., or 5½in. x 3½in., and, although for certain subjects it is a very pretty and pleasing size, it is not large enough to print on the standard size postcard without the use of a mask. The 15 x 10 cm. plate preserves the shape of the postcard plate, but has the great advantage of printing right out on to the standard size of postcard without the use of a mask, and leaves no white margin on the card. When the whole of the plate is printed from, the size is very little smaller than cabinet, but the camera is very much less bulky than a ½-plate.

Of course, in practice it is very little use speaking of the advantages of particular sizes of plates unless cameras of the same size are readily obtainable. The "Pocket Tenax," which we introduced this year, is made to take this size of plate, and we expect we shall be able to deliver early in December the "Goerz-Anschutz" folding camera for 15 x 10 cm. plates also. It may be pointed out that if the worker at any time experiences a difficulty in obtaining plates of this size, that the slides will, by means of the adapters which are

supplied, take the 5½ x 3½ plate, and the film pack adapters take the regular Premo film pack 5½in. x 3½in. The information given in this letter may perhaps be of use to your correspondent, and that is our excuse for addressing you.—We are, dears Sirs, yours faithfully  
1 to 6, Holborn Circus, London, E.C. C. P. GOERZ.  
October 12, 1908.

### THE THAMES COLOUR PLATE.

To the Editors.

Gentlemen,—Your friendly little criticism of the above in last week's issue, raising the question as to whether transparency in colour screen plate might be to the detriment of the delicate tints and half-tones, is worthy of a little discussion.

Is it not time for colour-screen workers to recognise that the plate which on close examination gives delightful half colours and tints is not and never can be the best suited for lantern work? The artist who paints the small picture would, if called upon to reproduce for a poster, sacrifice much of the detail and go for broad and striking essentials. And the poster in art is the projected image in photography. It seems to me that the worker should make up his mind which of the two he wants, and expose and develop accordingly. If this is not done, there is another course, a sort of half-way house. Most of the rooms used for lantern work are not so large that a smaller display on the sheet would be a drawback. I remember some Autochromes of Mr. Malby's that were beautiful on a circle about 3ft., but which caused him to tear his hair when they got a circle of about 8ft.—Yours faithfully,  
OLIVER S. DAWSON.  
254A, High Holborn, London, W.C.  
October 13, 1908.

## Answers to Correspondents.

- \**All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.*
- \**Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.*
- \**Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & CO., 24, Wellington Street, Strand, London, W.C.*
- \**For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24 Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, Two unmounted copies of each photograph must be sent with fee.*

### PHOTOGRAPHS REGISTERED:—

- A. Dimberline, 3, Mission Street, Marsh, Huddersfield. Photograph of *the Opening Ceremony, Gladholt Wesleyan New Schools, October 3, 1903.*
- J. L. Stephens, 97, Freemason's Road, Custom House, E. Photograph entitled *"Making for Port."*
- W. A. Sawyer, Westfield, Dover Road, Walmer, Kent. Photograph of *R.M.L.I. Depot Band, Walmer.*

COPYRIGHT.—A local chemist has taken to having portraits copied and enlarged, and underselling us, and is now showing an enlarged copy of a local celebrity copied from a card which we have issued from a copyright group of ours. What is our course to pursue to put some check on this sort of thing, which is a serious matter for us, as a large proportion of our business the result of many years' experience, is in pictures where copyright is valuable. This is a small town, and the offender is intimately connected with us socially. So we feel that if we allow him to play fast and loose with our work it will damage our prestige and encourage others to do the same. At the same time we do not wish to appear arrogant and make bad friends. "OXON."

You appear to be over-indulgent and to be paying a high price for peace. Your best course is to register the copyright.



in subjects which you think are liable to be pirated, and you can then deal firmly with a case of infringement and teach the offender a lesson. The reproduction of one portrait from a group is equally an infringement.

**MICROGRAPHS.**—Can you very kindly help me in the following matter? I have been endeavouring to produce some of these tiny micro-photographs, which can be purchased at the makers of microscopic slides, etc., and which are viewed through a microscope. I have been using iodised collodion, sensitised as usual, and developed with pyro. The results have been fairly good, but are not at all equal to what it is certainly possible to produce. Some years ago, a well-known microscope expert, the late Mr. Dancer, produced exceedingly perfect slides, which would stand great magnification without displaying a coarse grain, and it appears that the really fine slides still sold were produced by him. Those made by others show a coarse grain when magnified to a considerable extent. There is, of course, no secret in the procedure of photographing a negative by the aid of a microscope on to a tiny wet plate, but the difficulty seems to be to produce slides of the exceedingly fine grain referred to. I have heard that it is possible to produce these slides by the aid of the albumen process, and that it will give finer results than collodion. Can you give me any particulars as to its preparation, the proper developer, and the relative speed as compared with collodion? I shall be very grateful for any such help, as you may imagine.—BROMIDE.

See article on another page.

**PHOTOGRAPHS ON IVORY.**—Will you kindly let me know how photographs are transferred on to ivory?—MINIATURIST.

See article on another page.

**H. COLLINS.**—Other things than iron specks in the water will give rise to such spots, e.g., dust of developer, such as pyro or amidol, settling from the air on to the prints. This may occur from spilt developer drying up on the floor or bench. A suitable white spotting medium is that sold for process use as "Ullmanine" by Penrose and Co., 109, Farringdon Road, London, E.C., in bottles from 1s. upwards. Such spotting is not being generally done. If we can be of further assistance write us again.

**ARTIST.**—We can only advise you to consult another doctor and obtain a letter to a good hospital in your part of the country.

**H. S. BURTON.**—The publisher is Otto von Holten, Berlin. We do not know the price. Perhaps you had better address the publisher, c/o Herr R. Dührkoop, 10, Unter den Linden, Berlin.

**A. A.**—Try Philip G. Hunt, 332, Balham High Road, London, S.W.

**MR. BURTON.**—The author writes: "I can only say—at any rate for the present—that the plates I had in mind were the 'Royal Standard' and 'Mawson,' but since writing I have tried one or two other makes and find very little difference in length of time for full development. I may remark, however, that when the same make of plates is used and varying exposures are given on the same subject a remarkable difference is the result in point of time of development and density. The correct exposure should be given as far as is possible to do so."

**COPYRIGHT.**—I am about to take a sitter whose portrait will be copyright. Do I require to get him to sign an agreement giving me full legal right to publish his portrait? If so, would you please give a simple form of words which will answer the purpose, and which I can get him to sign when he sits.—AXME.

Better adopt the following, which is that recommended by the Professional Photographers' Association:—

To Mr. A. Darkslyde, Photographer,  
22, Cathedral Street, Canterbury.

In consideration of your allowing me a reduction from your usual terms for taking photographs of me, or on my behalf, this day, I hereby agree that the copyright in such photographs shall be reserved to you, and that I will not deal in any way with the photographs to prejudice your interest in the copyright.

Dated June 30, 1902.

WM. WIGGINS.

Witness: Lucius Light, Sunlight Villa, Canterbury, Clerk.

**AGAINST THE LIGHT.**—I should be pleased with a little advice on the following:—I have by me some very pretty and effective

photographs which are perfect renderings of seascapes and river scenery, with evening or night effects. The supposition is that they are taken by moonlight; but they are really sunlight pictures taken against the source of light. In some, the sun is visible, in others where the sun is behind the clouds, an additional charming light and shade effect is obtained. In each, there is a pretty effect by the reflected light on the water; full of sparkling ripple and detail, the beauty of which is well marked by its contrast with the surrounding, almost detailless, shadow. The shadows, although nearly black in places, are not weak and wanting, and show just that certain amount of details which gives such charming realism. (1) Would it be necessary to fix a tube in front of lens to prevent the plate from being fogged? (2) Would a backed plate be necessary—rapid or slow? (3) For a crimson sunset what brand of "Isochromatic" plate would be to advantage? (4) Would a very rapid shutter exposure be necessary, so as not to lose the sparkle of the reflection? (5) For developing, which would be best—a pyro-soda developer with a trace of bromide but well diluted, or a fast working pyro-soda developer with no bromide, but rich in both soda and pyro? My idea is to obtain sufficient detail and strength in the shadows without the brilliant high-lights becoming too dense.—C. WILLIAMS.

(1) With almost every lens it will be advisable; with some, indispensable. (2) Yes. We should take a medium speed. (3) Any iso brand of plate would be suitable. (4) Not more rapid than 1-50th of a second. (5) We should prefer the latter, but any developer which does not easily give a very hard negative would be suitable.

**YOUNG ARTIST.**—(1) We should say your predecessor received only the usual circulars, etc., from the trade houses, and as these will, of course, continue to come to you we cannot see that it is necessary for you to advertise. In any case the mediums which would most benefit you would be those in your own neighbourhood, but money spent in this way is largely wasted if the advertising is not done systematically. (2) Re Christmas trade you should apply to Messrs. Walter Pearce and Co. for their circular or booklet, produced with the object of creating trade in this direction. (3) There is scarcely a subject which is not at some time or another, and in some journal or other, available for reproduction. Your question as you put it is too general for us to answer.

**DIAMIDOPHENOL.**—I am a fairly large user of diamidophenol, chiefly for bromides, my formula being: Soda sulphite, 1 oz.; diamidophenol, 1 drachm; water, 1 pint; potass bromide, q.s. (1) This is so easy to remember, but I find that it stains my finger-nails quite black after a few days' use, and should like to know a way of preventing this. I was interested in the recent articles, but was rather bewildered by so many formulæ. I thought possibly an acid formula might prevent stains. (2) The acid bisulphite of M. Balagny is presumably the lyé, but I cannot get it easily or cheaply here. Would a saturated solution of sodium bisulphite answer the same purpose? Potass. metabisulphite is so much more expensive. (3) I should be glad to know which of the many formulæ would best answer my purpose (if any), and what are the other advantages of adding acid. A professional can hardly make the various proportions for exercising control as in M. Balagny's article, but wants one reliable all-round formula.—D. B.

(1) The stains produced by diamidophenol are very difficult to remove—in fact, we know no way of removing them quickly. The best way to prevent them is to use plate-lifters and finger-stalls for handling the plates. The acid formula is, we think, rather less liable to stain than the old formula, but it is still capable of giving very effective stains if you give it the chance. (2) Bisulphite solution is supplied in this country by the Lumière Company, or by Clarkson, of Colchester. It is a saturated solution of sodium bisulphite, but one of probably greater purity than you would be likely to reach by dissolving the commercial bisulphite. (3) You can judge better than we can which of M. Balagny's formulæ would best suit your purposes. We use the following formula for bromide work, intensification, etc.:—

Soda sulphite .....	1 ounce.
Potassium metabisulphite .....	1 drachm.
Diamidophenol .....	40 grains.
Potassium bromide .....	5 grains.
Water to .....	20 ounces.

The acid developer gives cleaner results when used several times

in succession, and can be used for a longer time. One of the principal advantages is the fact that the bisulphite preserves the sulphite, so that a strong stock solution containing all the ingredients, except the diamidophenol, can be kept for a very long time.

E. J. E.—(1) A and B. For distant views you can use long focus lenses if you have a long base and no near objects, but there will be no relief with a separation of 3½ in. Very distant objects may require a separation of half a mile or so. If near objects are also included a small separation is necessary, so that it is impossible to get relief in all planes of a long-range view. For objects three miles away a separation much under 100 yards will be useless. Seven and a half inches is a somewhat long focal length for ordinary stereoscopic work. We regard it as about the maximum focal length of use with ordinary separations and plates of the usual size. (2) (A) It would be absurd to expect an anastigmat to give as good definition as an anastigmat, or a cheap anastigmat to be quite as perfect as one of the highest quality; (B) we should prefer  $y$  or  $z$ , though  $x$  is very good, but with a reflex more rapid lenses would often be serviceable.

REPRODUCED NEGATIVE.—In a recent issue I saw you recommended for the reproduction of negatives the plan given on page 838 in Almanac, 1908. This is probably rapid. I should like to hear if you think it better or as good as making an ordinary positive in contact and then from it printing a negative in contact, or doing the same by transmitted light in the camera. I have often found that a good positive made by transmitted light has brought out details better than a P.O.P. print.—NEGATIVE REPRODUCTION.

We should certainly prefer the positive and second negative method, particularly if a carbon positive transparency be made.

ARTIFICIAL LIGHT AND COPYRIGHT.—Some months ago I called at a studio to inspect a certain artificial light. The proprietor kindly took me a double negative and made me a present of same, which I brought away with me. Upon calling at a wholesale firm who sell a similar light, I showed them the negative, which I thought might interest. They then offered to dry it and send by post the following day, but I had to write for same and did not receive it until a fortnight later. I have lately learnt, through my friends who have seen them, that untouched prints from the double negative were printed by this firm and used for business purposes without my knowledge or consent. Is this legal? Can I take any steps, if so, what? I might add they now inform me that the gentleman who took the negative is in their employ. I do not credit this, as he was not using their light, and no mention was made of the fact.—NEGATIVE.

The legal position, as regards copyright, is that the copyright has lapsed altogether in the subject, the negative having changed hands without registration of the transfer of the copyright. The firm, we fear, cannot therefore be proceeded against for infringement, though their action does not seem to be justified by the circumstances you have described.

SPOTS ON PRINTS.—Please state what may cause the small yellow spots on enclosed photograph, which has been taken some three years. Salt bath used before toning (sulphocyanide bath), prints fixed in hypo 9 oz., water 3 pints, for ten minutes, prints being turned all the time, and were washed in running water for 1½ hours. The overflow of washer was at the top. I may mention about thirty prints were fixed in above quantity of hypo. I have had postcards with same spots appear in about six months: postcards fixed for fifteen minutes. Please say how much hypo is required for, say, fifty postcards fixed in same dish, and how long for fixing. Do you recommend salt bath before toning?—F. C. D.

The spots appear to be due to chemical dust that has settled on the prints at some time or other. Possibly hypo dust. A salt bath is certainly advisable. Fix for ten to fifteen minutes. An amount of hypo solution sufficient for fixing a dozen or so prints simultaneously should contain quite enough hypo salt for fifty, but in any case it is a mistake to economise hypo. About a pint of 15 per cent. solution should be enough in theory.

D. M. EDWARDS.—Your lens does not seem to be of quite sufficient focal length to cover a postcard properly. In No. 1 the light patch may be caused by uneven development due to pouring

developer on centre of plate. Nos. 4 and 5 strike us as being prints from foggy negatives, while 3 is either over-exposed or under-developed. No. 2 is stained, probably owing either to use of partly exhausted developer, or to neglecting the use of an acid fixing bath. We will return postcards on receipt of 1d. stamp for this purpose.

WOODBURYTYPE.—I want to make some gelatine reliefs, so as to obtain an image in high relief when finished, though not for the Woodbury process proper. I made the tissue strictly according to a formula published a few years ago, using "Nelson's Amber Gelatine." The tissue looked all right when it was dry, though the drying took quite three days, as the film is so thick. I was quite unable to develop it when printed, even after soaking for an hour or more in water as hot as the hand could bear. Three or four lots have behaved in just the same way. Can you, through the "Journal," tell me the cause, or get me over the difficulty?—CONRAD.

The trouble is due to the tissue becoming insoluble during drying. Woodbury films should be dried in a drying box over chloride of calcium, so that they become dry in from eighteen or twenty-four hours at longest. It is very little use attempting to dry these thick films in an ordinary room.

F. SIMPSON.—If the carbon tissue has become spotted with mildew through being stored in a damp attic it will be a waste of time to attempt to use it. It is true that the mould can be wiped off and leave no mark behind, but it would show in the finished print. The only thing to do with it is to consign it to the dustbin.

N. S.—If when you purchased the business there was no agreement made that the previous owner of it was not to open another in the neighbourhood, you can do nothing. As it is, he can start another next door to yours if he likes, and you cannot prevent him. The fact that he represented to you that he was going abroad goes for nothing. Persons in buying a business should bind the outgoer, under a penalty, not to open another within a certain area, and within a certain time, or they may find themselves in the same position as you are.

A PAGEANT SOUVENIR.—Messrs. Debenhams, of the County of Gloucester Studios, have recently completed a remarkable photographic souvenir of the historic pageant recently held in Gloucester. It is a picture 96 inches by 50 inches of the massed Episodes. Each of the figures in the enlargement has received individual treatment and been coloured by hand, the work in this connection occupying several weeks. In regard to their work as official photographers to the Pageant, Messrs. Debenhams write us:—

"Only those who have experienced the responsibilities of the post can have any idea of the work entailed in order that the event should have a permanent record, which should be a credit to any professional photographer who takes an interest and pride in this work. In our case, our staff during Pageant time numbered over 70 hands. We would mention that if our experience would be of any benefit to any brother professionals, with pageantry work in view, it is entirely at their disposal."

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## SUMMARY.

The "free portrait" canvasser has now been prosecuted by the Inland Revenue, not for fraud upon the public, but upon the Government in using to take out a pedlar's licence. The case is important, and we trust that photographers have everything to gain by bringing our case on page 808 and the report of the case (on page 819) before the eyes of their local Police and Inland Revenue officers.

Lantern-slides and Bromide Prints direct in the Camera. Mr. Douglas Carnegie gives working details of a method for producing satisfactory lantern-slides and bromide prints without the intervention of a negative. He employs a bichromate reversing solution, but takes advantage of certain facts to avoid the general procedure on re-development of the positive silver image. (P. 811.)

Rev. F. C. Lambert, in "Photographic Scraps," has advised a permanganate method of reversal for enlarged paper negatives direct on small negatives. (P. 815.)

In "Photo Notes" a modified reversal process is recommended by Mr. W. Morison. (P. 813.)

Mr. C. Welborne Piper, in discussing the use of a swing back for reflex cameras, suggests a movement in which the front and back of the camera are linked together. (P. 809.)

Both the Salon and Royal exhibitions close to-morrow (Saturday), October 24, as does also the exhibition of photographs in colour by T. and O. Hofmeister and H. W. Müller, at the house of "British Journal."

The awards at the Franco-British Exhibition in the photography are given on page 814.

Some of the precautions necessary when using a focal-plane shutter with a very narrow slit in order to avoid markings on negative are mentioned on page 808.

M. Lumière and Seyewetz have published the results of tests extending over a number of years) of prints toned in the combined "other baths," and have confirmed their previous views that when used properly the combined bath gives permanent results. (P. 810.)

The use of cellulose as a means of printing from wet negatives has been patented. (P. 816.)

## EX CATHEDRA.

### A Reversal Process for Lantern Slides and Paper Prints Direct.

We may direct special attention to the article by Mr. Douglas Carnegie which we publish on another page, since it describes a technical process of photography which many workers have already aimed at bringing to a successful issue. The use of the process in the making of a lantern-slide direct from a drawing or other original without the intervention of a negative must surely be a gain to the lecturer and commercial slide-maker, whilst the facility of carrying out the process in the case also of bromide paper suggests new opportunities for portraiture of the while-you-wait order. The most rapid bromide paper is still rather slow for portrait exposures, but not so slow that the process cannot be used in good indoor daylight for portraits direct on any paper of the bromide class.

\* \* \*

### The "B.J." Almanac.

As briefly announced last week, the pages of the "British Journal Almanac" for 1909 are now closed so far as concerns the writing or acceptance of copy. The remainder of the present month is occupied by the make-up and actual printing of the volume, operations which have to be got forward with all possible expedition in order to leave time for the most lengthy process connected with the production of the Almanac, namely, the binding. The actual work of folding so many sheets, large and small, each to a total number of 25,000, is no light task, to say nothing of the pasting and stitching which complete the processes of the binder. Our publishers would, therefore, once more call the attention of all advertisers to the fact that insets to appear in the Almanac should be delivered to the offices of the "B. J.," 24, Wellington Street, London, W.C., not later than Monday, November 2.

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### Distant Stereoscopy.

A correspondent last week set us the impossible task of determining the proper separation of the lenses in a stereoscopic camera to give a stereoscopic effect when photographing a scene including both near objects and also distant mountains five miles away. Naturally, to show stereoscopic effect in the mountains a very big separation is required, but the same near objects cannot be included on the two plates excepting when the separation is small, therefore it is impossible to obtain a stereoscopic effect throughout the whole picture from the foreground to the distance. A compromise is essential, and as a rule we consider the near objects and let the distant ones take care of themselves. If we use a wide separation we can obtain considerable relief in the distance, but then the foreground becomes confused; if, however, we adopt a small separation suited

to the foreground objects there is no confusion anywhere, and it will be found that the distant mountains recede to their proper distance, even though they themselves show no more relief than would be observable in the natural scene. On occasion we may want relief in these distant mountains, even at the expense of a confused foreground, and then we can arrive at approximately the proper distance of separation by applying the rule given by Dr. Porter in his paper on Stereoscopy read before the R.P.S. a year or so ago. The distance is governed by that at which stereoscopic relief ceases to be visible to ordinary vision. This is a somewhat debatable distance, but Dr. Porter fixes it at 43 feet. If then we want the separation that will be necessary to show relief at 5 miles we work out the following rule-of-three sum:—As 43 feet is to 5 miles, so is  $2\frac{1}{2}$  inches to the distance required. The distance of  $2\frac{1}{2}$  inches is the normal separation of the eyes, which is another factor that concerns the problem. The rule is approximate only, and we need not be particular to a few inches in the result, which is about 108 feet. It is sufficient to say that less than 100 feet will not be enough to show full relief; and that it will be best to keep well over that dimension. We regret to see that in our answer to our correspondent we wrote yards instead of feet. If 100 feet is the minimum then 100 yards would be more than necessary.

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#### Lantern Slide Binding.

Some little time ago we made some suggestions with regard to the precautions necessary to prevent the dewing of slides in the lantern, and we pointed out that the sources of moisture in the slide were the gelatine and the paper mask. We have recently received suggestions on this matter that seem worth consideration, even though we have not as yet tested their efficacy. The trouble is the condensation of moisture upon the cover glass, and it is suggested that if the cover glass is coated with gelatine on the inside the moisture will not condense into drops and therefore will not obscure the slide. That is to say, a fixed, washed, and dried lantern plate will make the best cover glass. The second suggestion is that a painted mask would be a good substitute for the paper mask, and that the paint can very well be applied on the inside of the cover glass. It certainly seems likely that a slide made up in this way should be immune to the dewing effect, but considering that the quantity of gelatine is increased and with it the source of moisture, we may doubt if the permanence of the slide itself would be increased. Possibly, however, if both slide and cover glass were dried and varnished an ideal method of construction would be arrived at. Moisture

may condense on the glass of the cover, even when slide is varnished, if a source of moisture is near, but would be much less likely to do so on a varnished gelatine surface. The painting of a mask is not a difficult operation if a simple rectangular opening is required, and we have frequently had to make such masks when rebinding clear daguerreotypes. On a gelatine surface the task is easier, and the varnish is far less likely to flake off. A very good varnish for mask painting is made of fine lac black and celluloid solution, but "Photopake" would be effective in the case of a lantern slide, and possibly more simple in use.

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#### Printing Processes Old and New.

A writer in the lay Press has recently given a description of the salted paper process for the benefit of those of our readers who are ambitious to make their own materials. No doubt it is interesting to try the processes, but it is as well to remember that in many cases their disuse has been the result of progress, not of regression, and that very few, if any, of the abandoned printing methods are really worth reviving. So far as effect is concerned, modern methods give as much variety as can be wished for, and at the same time they enable us to more or less repeat the effects attainable by the old processes. In carbon printing, for example, by simply varying the quality and texture of the transfer paper used and the nature of the pigment, we can obtain an infinite variety of results, including some that are practically the same as salted prints, so far as appearance goes. There is, therefore, nothing gained by going back to the salted paper process, and we think that modern photographers would be wiser to increase their experience with the permanent carbon process rather than waste time over obsolete methods, the defects of which were well known to early workers. About the only one of the old processes that cannot be rivalled by modern methods is the daguerreotype, and though this gives quite unique results and has certain qualities lacking in more modern methods, its defects are so obvious that no one is likely to try to revive it. Surely carbon, platinotype, bromide, gum, and oil offer enough possibilities in the way of results. Perhaps the only modern process in general use that is not quite satisfactory is the useful P.O.P. with its numerous varieties. We cannot get on without a paper of this class, but one of more certain permanence would be desirable, and we are therefore not surprised to hear that of late albumen has shown signs of revival. This is a good printing process, and in several respects it is a worthy rival of P.O.P., but it appears to us to be about the only one of the

### THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC FOR 1909.

Edited by GEORGE E. BROWN, F.I.C.

The forty-eighth annual issue of THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC will be published on December 1. This year's ALMANAC reached a total of over 1,000 pages, and the entire edition of 25,000 copies was sold out immediately. Of no other photographic book ever issued can two such unique facts be recorded. The edition for 1909 will also consist of 25,000 copies.

The editorial article will deal very completely with the important subject of

#### REFLEX CAMERAS,

and the systematic review of the work of the year under the title "Epitome of Progress" will be a strong feature of the volume.

The lines followed in the previous editions of the

ALMANAC will be maintained in general, but in a number of particulars the arrangement of the volume for 1909 will be modified to make it more than ever the book of universal photographic reference.

The ALMANAC for 1909 will appeal to photographers all over the world as a daily reference guide in practical work. The standard matter and formulæ will be revised and added to where necessary, and, wherever practicable, new features of an informative nature will be added.

NOTICE—IMPORTANT.—Our publishers ask us to inform agents that it is advisable to place their orders for copies immediately, as considerably over half the issue is already booked, and a second edition will not be printed.



silver processes really worth consideration at the present time.

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**German English.** Here is a copy of a letter sent out by a firm of German moulding manufacturers, verbatim et literatim:—"Dear Sirs,—By looking through our book at the end of the year we find, to our regret, that we miss your agreeable orders since sometimes. By the present we allow offer our services again, and hope you could give to us a new order again. Please assure we will do our best to serve you at your satisfaction." Our amusement is somewhat tempered by the reaction that were we to attempt to write a letter in German would be still more amusing to the Germans. "Have you seen the penknife of your mother's aunt?" We wonder youthful Germans acquire their knowledge of English by such methods as seem to be the rule in language teaching in most English schools.

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**Packing Up Photographs.** It is a commonplace that a man is taken at somewhere near his own valuation of himself, and if we except cases of gross exaggeration there is much truth in the remark. We may certainly say that the man who does not respect himself does not command respect. This may be applied to the work produced in the commercial studio: if the producer has no respect for his own work he need not expect an educated up-to-date clientele to have any. One of the most effectual methods of showing how much respect he has for one's work is to despatch it to the customer, packed up neatly and securely in such a way, in short, that its delicacy and value are at once suggested by the adequate protection afforded to it in transit. Expensive wrappers are not necessary. A few large sheets of yellow cardboard, or the rigid corrugated packing, some white tissue paper, or the thin, smooth paper used by printers known as "white demy"; some smooth, tough, brown paper, and white twine of two thicknesses are all that is necessary, though the addition of a stick of parcels wax sealing, and some neatly printed labels will give additional finish. The actual parcelling up demands some care, for the paper must be drawn sufficiently tightly round the package to prevent its contents slipping about. The photographs—we are now referring to the larger mounts, for which ordinary postal wrappers are not so suitable—should be wrapped up in the tissue or white demy, and then placed between the strawboards, which must both be of the same size and truly rectangular. The whole is then enclosed in brown paper, the edge being sealed down in a couple of places before the ends are turned in and folded over. If the twine is passed round the parcel at each end and once round its length a secure package is made, and any friction on the surfaces of the prints is avoided.

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**Dark Light the Dark-Room.** From time to time we meet photographers who find the ruby light commonly employed in the dark-room not only inadequate in illuminating power, but productive of considerable irritation to the eyes after working for a short time. It is well known that lights of different colours exert varying influences on the brain, the effect of red, for example, on certain animals having given rise to the saying, "It's like a red rag to a bull." Whether the difficulty of working in a developing room illuminated with red light, arises from the influence of red on the brain, or whether from the fact that the retina is in some individuals very insensitive to red rays, the unpleasantness remains, and such workers would find a green light much more convenient and pleasant. Of course, the right

sort of green must be employed—a very deep cathedral green, very much nearer to yellow than to blue, being what is needed. Such green safe-lights are on the market, and one firm supplies a filter specially adapted for use, with plates sensitive to orange and red light, from which, however, one sheet of green paper may be removed if it is desired to employ such a light for the development of ordinary plates. Further than this, if workers would give attention to getting their exposures correct within reasonable limits, and adopt the method of developing with a constant or standard developer for a fixed time, keeping the dish covered during development, more light might be used, except during the few seconds needed for the placing of the plates in the dish, and the pouring on of the developer. In short, a little knowledge thoughtfully applied will very materially enhance the pleasure of work in the dark-room.

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**Considerations when Enlarging Portraits.** We recently discussed at some length the question of the size of head in so-called "life-size" portraits, this being a matter simply of the degree of magnification when making the enlargement, but there are other points which must be carefully borne in mind, not only when enlarging, but when taking the original negative from which the enlargement is to be made. It is not at all an uncommon thing to see harsh, crude-looking portraits, with excessive contrast, biting definition, and that peculiar outlining of the shadows with a line of light which has never been definitely accounted for, though it occurs generally in negatives erring slightly on the side of under-exposure, and, it has been suggested, is due to the developer absorbed by the film spreading from the slightly exposed shadow to the fully exposed high-light which utilises its activity. While it is usually accepted that all portrait negatives should be soft in contrast, this is an absolutely necessary condition in those intended for enlargement if pleasing results are to be produced, and, further, it is necessary to have a full scale of tones or perfect gradation from shadows to high-lights. Many workers over-develop their negatives to such an extent that, though fairly good contact prints may be obtained, in enlarging, the lighter half-tones become more or less lost. Skilled handwork will, of course, remedy such a defect, but this increases the cost of production beyond what, in many cases, is possible. More may be got out of the original if an enlarged negative is made, and where this is not worth while the negative may be reproduced same size, taking care to keep the new negative much softer in contrast. This is a simple matter, especially if a carbon transparency is made to work from.

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**Price Lists.** We are continually seeing the price lists issued by our professional friends, and are frequently surprised to find errors which should certainly never have been allowed to pass had the printer's first proof been carefully read. As an example, we have before us a price list which gives the following information with regard to imperial portraits:—

One Copy .....	1	1	0
Six copies .....	2	12	6
Extra copies, each .....	0	5	6

Many people, at first glance, may not notice much amiss here, but our experience is that when money comes to be spent, calculations are made, and it would soon be found that at this particular establishment it was decidedly less expensive to purchase one copy and then five extra copies at a total cost of £2 8s. 6d. than to go straight away for the six copies at £2 12s. 6d. The usual idea is that the price falls slightly as the quantity ordered increases, but

in this instance, to buy an odd copy as required is actually a more economical method than to get half a dozen straight off. Price lists must necessarily be somewhat confusing to the lay mind, understanding little of the various processes and of the difference in the amount of labour per print when making one or two prints only, and when producing several dozens from the same negative; but errors, and this is presumably such, can only increase confusion or necessitate subsequent explanation or correction.

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#### **Narrow Blind Slits and White Lines.**

When using a very narrow slit in a focal-plane shutter the resulting negatives often show white parallel streaks and lines passing right across the plate in a direction at right angles to the slit. The cause of these streaks is much the same as that of the black longitudinal lines often seen in a spectrum. That is to say projections exist on the edges of the slit, which projections are generally due to dirt in the case of the spectro-scope, and to fibres of the blind material in the case of the shutter. Inexperienced workers often fail to realise the importance of having a perfectly sharp-edged slit, and the fact that a very slight irregularity on the edges of, say, a  $\frac{1}{8}$  in. slit will produce lines on the negative is somewhat of a surprise to them. With metal-edged slits the trouble should never occur, it can always be prevented by simply keeping the slit clean, but with cloth-edged slits the defect is often serious, and the remedy is not so simple when the edges are slightly frayed. One expedient is to run a little varnish, say celluloid or shellac, along the edge and smooth the fibres down. A better remedy is to re-cover the edges with new material, but if this course is adopted, of course the old binding must be removed, otherwise the slit will be still further narrowed. Generally the blind material is a rubber cloth, and rubber solution is the adhesive used. In this case the old binding can readily be removed and replaced by fresh. But if this work of repair is found to be really necessary, we should strongly advise widening the slit a little. Of course, if the slit is adjustable this is not necessary, but many modern shutters are fitted with a series of fixed slits of different widths, and when this is the case we prefer to widen the slit and so save a recurrence of the bother. With a slit of  $\frac{1}{4}$  in. or  $\frac{3}{8}$  in. width a little irregularity is of very small consequence, but with a  $\frac{1}{8}$  in. slit it is not only important, but a difficult thing to avoid, and in our experience such a narrow slit as this can very generally be dispensed with. Of course, if the slit is doubled in width the speeds are halved, but even then it will probably be found that as high a speed as is likely to be required is easily attained. As a matter of fact a  $\frac{1}{8}$  in. slit is of little use at all unless an extremely rapid lens is available. With a reflex fitted with an  $f/4$  lens it may be very useful, for exposures of one-thousandth of a second then become feasible, but in a hand-camera with a lens working at an extreme aperture of, say,  $f/5.6$  or  $f/6$  such high speeds are usually out of the question. With an  $f/6$  lens we have found that a shutter intended to give one-thousandth of a second with a  $\frac{1}{8}$  in. slit will still give as high a speed as is practically useful, even though we have enlarged that slit to  $\frac{3}{8}$  in.

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#### **Black Lines in Focal-Plane Exposures.**

As already pointed out, white parallel lines on a negative situated at right angles to the slit indicate that the edges of the slit are either dirty or frayed out. Black lines similarly situated may indicate notches or nicks in the edge of the slit if a narrow one was used, but more often they are caused by pinholes in the blind. An old shutter frequently shows such holes, and they should

be looked for when the camera is under inspection in preparation for work; they can easily be stopped out with a small piece of blind cloth stuck on with rubber solution. This is the best remedy, as the patch is flexible and rolls up nicely with the blind, but in an emergency we have resorted to a small patch of black court plaster with perfect success. If the black lines prove to be due to a damaged slit, the remedy is much the same as before described in the case of the white lines. The damage must be repaired by rebinding the slit, while widening will prevent the lines appearing again.

### **INLAND REVENUE PROSECUTION OF PHOTOGRAPHIC CANVASSERS.**

It will be seen from the report which we publish on another page that the Inland Revenue authorities have recently instituted prosecution of a canvasser in Worcestershire who was found to be plying his business without a pedlar or hawkers licence. It was brought out at the Police court that a man coming from Clapton, London, took up his residence at St. John's, together with four other men. They were in the neighbourhood for about two months during which time they were accustomed to work the "free enlargement" fraud on the timeworn lines which unfortunately appears to have lost none of its ancient power in deceiving a gullible public. One of the gang first travelled round the district calling on publicans and other persons and offering to make, free of charge, an enlargement of any photograph, the enlargement to be hung up where it could be seen so as to serve, it was alleged, as some sort of advertisement. The visit of this first representative was followed by one from another of the party, who called with the enlarged photograph and with specimens of moulding for frames. Canvasser No. 2 exhibited the enlargement and intimated that it might be had on purchasing a frame for it. On the owner of the photograph objecting and maintaining that he was to have the enlargement free, Canvasser No. 2 explains that No. 1 must have made a mistake and usually a frame was supplied at a price sufficient to remunerate the vendors for the gratuitous inclusion of the photographic enlargement.

It will thus be seen that the method adopted by the canvassers in no way differs from that which is being practised by unscrupulous and dishonest persons in all parts of the country. No actual articles were offered for sale; the canvassers offered their work in frame-making for purchase, and thus brought themselves within the scope of the Act which specifically mentions the need of a licence by the hawkers "offering for sale his skill in handicraft." We may surmise that a disregard of this provision led these particular pedlars to refuse to take out a licence. Moreover—and this is a point upon which we would lay special stress—these canvassing gentry have the best reasons for not putting their names on any document which will bring them into relations with the authorities. As we have already pointed out, a year or more ago, the Pedlars Act of 1871, which is that now in force, contains certain provisions which make it very awkward to carry out a fraudulent game like the "free enlargement" swindle. In the first place, the canvasser who proposes to carry on his trade in a certain district must first show that he has been resident in the district for one month, and that he is a person of good character. His application, accompanied by evidence on these points, is made to the Chief Officer of Police who (or whose representative) is a person whom the canvassing swindler prefers not to meet.

Further, the pedlar's licence, according to the Act, is only available for the district for which it is granted. True, the holder of the certificate, on paying the sum of sixpence,



have it made available for another district, but in that case he must have it endorsed by the officer of the new district, again a meeting which the canvasser will avoid if possible.

Thus, two things are clear:—(1) That the obligation to take out a licence hampers the "free enlargement" canvasser; and (2) the nature of the business—the offer for the retail of his skill in frame-making—does actually bring a canvasser within the scope of the Act. We pointed out in our latter fact a year ago in our article,\* but it has not been until now that we have heard of a prosecution of the itinerant enlargement swindler by the Inland Revenue authorities, and therefore we would strongly advise every professional photographer to prepare himself for a possible visit to his town of a gang of canvassers by acquainting his local police with this decision of the Worcester Petty Sessions. The point which must be brought out is that the portrait canvasser is not only defrauding the public; he is also defrauding the Government by trading as a dealer without having paid the sum of five shillings, which

is exacted by the Inland Revenue Department. The present prosecution, therefore, does not represent simply a chance decision of the "Great Unpaid," or some officious act of Bumbledom, but is the outcome of proceedings instituted by Somerset House. The canvassers have made their trade so notorious that there is no likelihood of the most uninformed police officer denying the fraudulent character of the business. This he knows full well, but what he may not know yet will be very glad to be told, is the legal ground on which the movement of the canvassers can be nipped in the bud. The virtue of the Pedlars Act in this respect has now been confirmed by the authorities, and therefore a photographer can point out to his local police:—

1. That the portrait canvassers (sellers of frames) come under the Act.

2. That the necessity of one month's residence and of proving good character would usually make it impossible for them to carry on the business.

It is to the advantage of photographers, and particularly of those who rely on the poorer class of trade, to familiarise their local police authorities with these facts.

\* "The British Journal of Photography," August 9, 1907.

## THE MOVEMENTS OF A REFLEX CAMERA.

The most important peculiarity of the reflex camera is the fact that focus can be adjusted right up to the moment of exposure, and a study of the results of this characteristic fact shows several possibilities that manufacturers up to the present have neglected. For one thing, it renders possible movements of a kind that would be practically useless with a hand-camera of the ordinary type. Swing front and swing back can both be brought into play and taken the fullest advantage of, yet, if any, reflex cameras are at present provided with either movement.

Two of the main advantages of the reflex over the ordinary camera are that we can use a lens of far greater rapidity, and so a lens of much greater focal length. An eight-inch lens of  $\frac{1}{4}$  is almost useless in a  $\frac{1}{4}$ -plate hand-camera with which focusing is effected by scale, yet experience shows it to be a most valuable type of lens with the  $\frac{1}{4}$ -plate reflex. With the reflex, however, the size of such a lens limits the use of the rising front, and the great intensity renders the depth of field very small. Both these troubles can be got over to a certain extent with the aid of suitable movements, and it is therefore desirable to consider how the reflex camera can be modified to provide the necessary adjustments.

### A Suggested New Movement.

It stands to reason that the ordinary rising front movement of a reflex cannot be increased without a material growth in bulk. We must make the camera higher to get more rise, yet greater rise is distinctly desirable, for the long-focus anastigmat commonly used both requires and permits the use of a very considerable amount of vertical movement. What is wanted is clearly the substitute for a rising front that we sometimes employ in stand cameras. That is to say, if we tilt a hand-camera upwards, and then swing back and front until they are vertical and parallel, we can obtain all the effect of a rising front without using the actual sliding front movement at all, and by using the sliding movement as well we can gain a very big rise. Now, a reflex camera, like a stand-camera, can be fitted with either a swing back or a swing front, in addition to the usual rising front. If we have both swing movements, and also a means of linking front and back together, so that they will always be parallel, then the rising front difficulty

disappears. Such a parallel swing movement would be of no use in a hand-camera, because, when brought into play, the lens is nearer the plate, and focus is disturbed; but this trouble is of no consequence in the reflex, in which focus is adjustable up to the moment of exposure.

If, now, a swing back and swing front are both provided, we can get over the difficulties attending the photography of very high buildings, and we have also two ways of compensating for the want of depth possessed by the large aperture lens. To bring near and distant objects into sharp focus we can use either the swing back or the swing front. If the former, we may introduce distortion; but if the latter, we can avoid distortion altogether: therefore, the swing front is obviously the best movement for the purpose. To be able to effect this correction of focus, and also to obtain the big rising front movement, we must, therefore, arrange the swing front and swing back movements so that they can either be linked together for parallel movement or disconnected and used independently. This may seem a great complication, but there would be no great constructional difficulties, so far as I can see, and no very great increase in weight need be involved.

No doubt it may be argued that the one swinging movement alone should be sufficient; but if we consider the two cases of swing back alone and swing front alone, I think it will be evident that either movement by itself will be of small advantage in the particular case of a reflex camera, with which a very rapid lens is an essential feature.

The two difficulties we have to cope with are the inclusion of high buildings on a vertical plate and the compensation for want of depth.

With a swing front alone we can get over the depth difficulty quite effectively; but for taking a high building this movement is quite useless unless we also have a big rising front, which latter movement we cannot possess in the reflex. The high building difficulty is therefore unconquered if we have the swinging front alone. Next suppose we have a swing back alone. With this we can get over the depth difficulty, but at the expense of distortion. We can also get a high building on to the plate, but only at the expense of stopping down the lens, and generally this is the last thing we want to do with such subjects.

Of the two movements the swing back will do more than the swing front—that is, it will do two things, both imperfectly; but, while the swing front will do only one thing, it will do that well. On the other hand, the combination swing movements, that can be used either linked or separately, will do all that can be wanted as well as it possibly can be done. With them we can take the fullest advantage of a flat field lens of large aperture and great covering power, or we can humour the idiosyncrasies of a narrow-angle lens. The proper method of use would be somewhat as follows:—

#### Use and Construction.

Ordinarily the front and back should be linked together, so that both always move parallel, and the two should be actuated by one piece of adjusting mechanism. A single lever or knob could work both. In the case of a high building the ordinary rising front will be used first. If required, the parallel swing movement will then be brought into play; and if this proves inefficient, owing either to the extreme height of the building or the lack of covering power of the lens, the linking can be disconnected and a little extra movement given to either back or front as required: to the former if great height is the trouble, and to the latter if the lens is at fault. The amount of stopping down then wanted will be at a minimum, so the fullest advantage can be taken of the rapidity of the lens. In the other

case, of want of depth, the first thing to do is to disconnect back and front, and then adjust the front alone.

As regards construction, it is obvious that front and back can be kept parallel and yet separable for focussing purposes by parallel rule or lazy-tongs methods of linking. Any swing imparted to one will then affect the other. The front can be given an independent swing on the linked-up framework, and a similar independent swing can be given to the back. I think, however, that in practice it might be found that the independent swing to the back could be dispensed with, as the parallel swing movement would probably give sufficient rise to meet all cases of high buildings.

It is, of course, obvious that when a swing back is used in a reflex modifications must be introduced to ensure that the focusing screen shows the exact image that will ultimately fall on the plate. The mirror must always bisect the angle between plate and ground-glass; therefore either all three must remain always in the same relative position, or two of them must be automatically adjustable. It should be clear that a linked parallel movement of back and front is precisely equivalent to a big rising front. If this latter movement can be provided, then, with it, and a swing front, all the requirements are met. I very much doubt, however, if this can be managed without a great increase in bulk.

C. WELBORNE PIPER.

## ON THE ALTERATION OF PRINTS ON P.O.P. TONED AND FIXED IN THE COMBINED BATH.

In a previous paper<sup>1</sup> we have shown that the alteration in positive prints on gelatino-chloro-citrate paper toned and fixed at one operation in the combined bath appears to have been wrongly attributed to the presence of lead salts in the toning solutions. Prints toned in combined baths containing gold and lead, or even lead only, have proved to be as permanent to light and moisture as those toned with gold alone. We have shown that the indispensable condition for this permanence is the complete elimination of every trace of hyposulphite of soda. The presence of small quantities of this unstable body certainly gives rise to the speedy alteration in damp air of prints which have been toned with gold either with or without lead salts. The alteration of prints toned in the combined bath (with aid of lead salts) has seemed to us to be favoured by the acid reaction of the bath, but this cause can prove an active agent of the destruction of the prints only when the print is not completely freed from the hyposulphite.

The above experiments have so far not been confirmed by the test of time. The prints have been exposed to light and to air only for about twelve months, and therefore we have been able to draw from these experiments only provisional conclusions. But we have had under observation for several years past a number of prints, toned under the most diverse conditions and freed from hypo, which have resisted for one year the action of air and damp. We have examined these prints after their storage for seven years in cardboard boxes placed in damp cupboards. The following were the results of the examination:

1. No prints toned and fixed in a combined bath containing gold, either *with or without a salt of lead*, have suffered any change. All the prints washed free from hypo have retained their original vigour, whether the toning had been much or little.

2. On the other hand, all the prints toned in baths which contained no gold, but only a lead salt, have suffered more or

less severely. The toned prints, both those made with the toning bath containing lead pentathionate (no gold), which we have described as giving tones resembling those given by gold, and those made with the toning baths containing nitrate of lead, have equally shown strong yellowing.

3. The presence of lead in the toning baths, in the case of separate toning and fixing, has not detracted from the permanence of the prints.

4. The substitution of tin for lead in the combined bath containing gold (giving a bath which tones as well as that containing lead) has had an unfavourable influence on the permanence.

5. Lastly, prints fixed in a bath of hypo free from gold or lead, and to which has been added alum either with or without boiling, or to which a little alkaline sulphide has been added, have shown no alterations: the dull tones have been preserved.

In short, the presence of lead in some form or other in the combined bath containing gold, hitherto often considered to have been the cause of the fading of prints on P.O.P., does not appear to exert any unfavourable influence on the permanence.

The active factor is, as we have shown, the hypo retained in small quantities in imperfectly washed prints.

On the other hand, the use of lead salts alone in some form which, in the absence of gold, gives good results at the time of toning, should be abandoned in consequence of the change which such prints so treated afterwards undergo.

These results appear to confirm those which we have obtained by analysis,<sup>2</sup> and which have shown the complete absence of lead in prints toned in combined baths containing both lead and gold. Toning mixtures of this kind may therefore be employed with the same prospect of permanence which are given by separate toning and fixing.

A. AND L. LUMIÈRE.  
A. SEYEWETZ.

<sup>1</sup> Bulletin de la Société de la Française de Photographie, 1902.

<sup>2</sup> Bulletin de la Société Chimique de Paris, t. 27, p. 148, 1902.



# POSITIVE LANTERN-SLIDES AND PAPER PRINTS DIRECT IN THE CAMERA BY A SIMPLE PROCESS.

A process which would materially lighten the labour and greatly shorten the time required for the production of diagram lantern slides has long been a desideratum with the lecturer who aspires to infuse personality into his work; that is to say, with the lecturer who adjusts his slides to illustrate his theme instead of adopting the Procrustean method of compelling his treatment of the theme to fit the stereotyped slides purchasable on the market.

The most obvious way of shortening the procedure in lantern-slide making is to obtain the required positive transparency directly from the plate exposed in the camera.

My first essays in this direction, in which I applied methods of reversal similar to those adopted in Autochrome work, met with no success. On theoretical grounds I must confess I did not anticipate success for this mode of procedure, but practical trial so often confounds our theoretical anticipations that it seemed inadvisable to dismiss the matter without bringing it before the tribunal of experiment.

The plates chiefly experimented on in this connection were the "Kristal" gas-light plates—chosen because they appeared to me (whether rightly or wrongly) to carry a very thin coating of emulsion. In the preliminary experiments the plates were not exposed in the camera, but negatives were prepared by giving all exposures behind positive transparencies of line subjects. The exposed plates were developed, placed in a so-called reversing solution, re-exposed, and then re-developed. In no case, however, was the reversal of that complete character that the Autochrome-work looked up black and vigorous on a perfectly clear background, as should be the case with a satisfactory lantern-slide. The background was always fogged to a quite impossible and inadmissible extent, ring the changes of conditions and procedure as I would; and the only melancholy satisfaction accruing to me was that my anticipations of failure were fully justified.

The reason of this failure is not far to seek. Development is what chemists (of the older school, at any rate) would call an incomplete or balanced interaction, in the sense that however powerful the developer, and however prolonged development may be, there is still developable (unreduced) silver haloid present in the film when effective change has ceased. In other words, an equilibrium is finally established between reducible haloid and developer on the one side, and reduced haloid (silver) and oxidised developer on the other, so that moieties of the original factors of the change are necessarily represented in the final equilibrium system after effective development has ceased. It is impossible by means of a developer to reduce the whole of the exposed, and therefore reducible, haloid in a film to metallic silver.\* Consequently, after primary development and the application of a silver solvent—be it acidulated permanganate or persulphate—there is always, no matter how complete the exposure to which the plate has been subjected, some silver haloid left on the parts of the slide corresponding to the background, i.e., on those parts of the transparency where, after the application of the silver solvent, we desire to have clear gelatine. This residual haloid, of course, darkens during the secondary or reversing development, and gives a dirty slide.

\* It may be asked how, in view of the incomplete nature of the developmental reaction, satisfactory results are obtained in the reversal of Autochrome plates; for mere thinning of the film cannot alter the inherent incompleteness of the developmental process. I presume that, even in the case of the thin Autochrome film, reversal is not, speaking academically, absolutely complete. The following experiment would be informative. With the film towards the lens, fully expose on a white sheet of paper half of an Autochrome plate, the other half of the plate being meanwhile shielded from the light. Then develop, reverse, expose, and re-develop. If the reversal has been absolutely perfect, the exposed half of the plate should be quite free from veil and of precisely equal transparency with the unexposed half. It would be of much interest to know the result of such an experiment.

The incompleteness of reversal of the background in these experiments cannot be ascribed to the failure of the light during exposure to penetrate right through to the very back of the films, for when two plates in super-position were exposed behind the positive transparency the plate furthest removed from the source of illumination gave a strong negative on development—the light which produced this negative image having, of course, passed right through the film and glass of the first plate still in possession of strong photographic activity.

It follows that after treatment with the silver solvent the whilom negative is essentially a cameo in silver haloid. The portions of the plate, corresponding to the lines of the positive transparency employed, retain their original film density of silver haloid, while the background from which a considerable amount of silver has been first reduced and then subsequently dissolved away, is only more or less thinly veiled by residual silver haloid. This suggested the experiment of placing the plate in weak "hypo," after treatment with the silver solvent and prior to re-development, in the hopes that the thin background veil of haloid might dissolve completely away, while yet a sufficiency of the thicker haloid deposit representing the lines remained to give good opacity on re-development. But the hope was vain. The hypo has to penetrate the gelatine to reach the background veil of haloid, which is necessarily in the lower reaches of the film, and *pari passu* with this penetration the haloid representing the lines is dissolved away. Such a differential solvent action of the hypo as is here desired could only be effectively realised in the event of the background veil of haloid being situate in the upper portions of the film.

To turn now to a description of the modus of reversal that I have found suitable for the preparation of lantern-slides direct from the camera negative. The plates used in the experiments were backed "Imperial Process Plates." The plates were exposed on black and white drawings illuminated by limelight. The plates were developed in a metol-hydroquinone developer containing bromide, observing all the conditions necessary for the production of strong, hard negatives of a character suitable for the customary method of preparing lantern-slides by contact printing. It is better to over-expose the plate than to under-expose it; in fact, any considerable degree of under-exposure is absolutely fatal to the success of the process. After development the plate is washed in three or four changes of water, and then placed in the silver solvent which has the composition:—

Potass bichromate .....	5 drachms.
Nitric acid (puriss) .....	3 drachms.
Water .....	40 ounces

All the operations subsequent to the rinsing away of the primary developer from the film may safely be conducted in a comfortably bright yellow light.

In very warm weather it is advisable to dilute the above solution with once or twice its own volume of water, else opalescence, due to a curious pitting of the gelatine, is apt to supervene. A pitted plate may, of course, be made presentable by varnishing; but the drying of varnish is always a very slow process, and time is saved by making a fresh negative. After about two minutes in the "reversing" bath the silver from primary development is all dissolved; the plate is given a momentary rinse under the tap, and its surface lightly stroked with a mop of wetted cotton wool. (The bichromate solution is not washed out of the film.) The plate is now returned to the already used developer, rocked therein for half a minute, and then, while still under the developer, exposed to light.

From 20 to 30 seconds to the flame of an ordinary number 4 flat-flame burner, held about a foot above the developing dish, is a suitable exposure. The portions of the plate protected during primary exposure by the rebate of the dark-slide are the first to turn black; then the positive image appears and slowly gains density. It is essential that this secondary development of the plate be not pushed to the point of fogging of the background, for any background veiling that may form in this process is not (as in contact printing) on the surface of the gelatine, but deep buried within the film, and it is almost impossible to remove it without at the same time wiping out the more superficially disposed positive image. To avoid the possibility of stains, it is essential that the plate should not be fingered between the several stages of the process. The plate should either be manipulated with a plate-holder, or preferably all treatments and rinsings up to the final hypo bath should be performed with removal of the plate from the dish, which, for safety's sake, should be made of a dead-black material. After removal from the developer the plate is plunged forthwith into an acid fixing-bath, cleared by momentary immersion in a *very dilute* Howard Farmer reducing bath, and then washed.

It will be gathered from the fact that no intermediary thorough washings, sulphite baths, etc., are involved, that the process is a very rapid one. If there is urgency, the final washing out of the hypo may be hastened by placing the plate for a few minutes in 10 per cent. formalin solution, washing with four or five changes of boiling water, and then drying on a whirler.

It may be convenient here to tabulate the stages of the process in their proper order.

1. Primary development.
2. Rinsing.
3. "Reversing."
4. Return to developer, re-exposure, and re-development.
5. Fixing.
6. Clearing.

The positive resulting from this process is, of course, reversed as regards left and right, and due allowance must be made for this in spotting the mask and binding on the cover-glass, so that a rectified picture may be obtained on the screen.

It will be noticed after removal of the plate from the fixing-bath that the background exhibits a slight milky-white opalescence, due, I presume, to an oxide of chromium precipitated in the film from the acid bichromate silver solvent. This opalescence (which as a matter of supererogatory refinement I have vainly attempted to dissolve out of the film) is, however, of no practical consequence, as on drying the film it becomes quite imperceptible in transmitted light, and its presence can only be discerned in very obliquely reflected light. Consequently, it does not detract at all from the brilliance of the screen picture formed by directly transmitted light.

I found that this opalescence can be avoided if the nitric acid of the silver solvent be replaced by an equivalent quantity of sulphuric acid; but for reasons which will be given shortly in suggesting the *rationale* of the process, the substitution of nitric by sulphuric acid cannot be recommended in the preparation of line-work slides where "hard" effects are in demand.

If the secondary development is by misadventure carried too far, and incipient silver fog appears where clear background is desired, the slide may be reclaimed by careful reduction with the Howard Farmer reducer, followed, if necessary, by the now well-known rapid method of chromium intensification. The reducing-bath is made up as follows:—

Potass ferricyanide (saturated solution).....	1 dr.
Hypo solution (ordinary fixing strength) .....	1 dr.
Water .....	2 ozs.

Since the fog is buried in the depths of the film, the slide must not (as is the usual procedure in clearing) be immersed bodily in the reducer, but the solution should be repeatedly applied to the fogged areas with a pledget of cotton-wool, wash-

ings under the tap immediately following each application of the reducer.

As regards the *rationale* of the process, I am not prepared to speak otherwise than tentatively and suggestively. I believe that the failure of the background to develop up on secondary development is due to a combination of several causes. The action of the bichromate solvent results in the formation of a reddish-coloured, actinically opaque compound, which is adsorbed by those portions of the film (the background) from which silver has been removed. This adsorption-held compound (ultimately acted on by the developer during secondary development) behaves as a screen or safe-light, protecting the underlying haloid from the effects of the exposure of the plate prior to secondary development. The compound afforded by the sulphuric-bichromate solvent is nothing like so deeply coloured as that resulting from the nitric-bichromate solvent. Hence general background fog is much more likely to supervene when sulphuric acid is used as acidifying agent, and here is the reason why, in spite of the freedom from opalescence that the employment of sulphuric acid affords, I do not recommend it as the acidulating agent of the solvent bath when the production of hard black-and-white results is in question.

Again, since the bichromate is *not* washed out of the film before secondary development, and since the picture in silver haloid lies on the surface of the film while over the background the upper portions of the film are haloid free, it is easily seen that mere diffusion must also play an important rôle in the differential development accruing. While over the background portions the developer has to diffuse through a film of haloid free and bichromate-saturated gelatine before it can get into touch with silver haloid, elsewhere developable silver haloid permeates the film to its very surface.

Lastly, there are indications that the gelatine film is less permeable in those portions where there has been reduction of silver followed by subsequent removal thereof.

It will be noted that the method here described differs only in details of order of procedure, omissions of sulphite baths washings, etc., from methods which are already in use for the production of reversed negatives. But it is just the rigid observance of these apparently insignificant alterations of procedure that transmutates the character of the end product from a reversed negative to a reversed positive. There can be a novelty in procedure just as truly as in the reagents used.

Mr. George E. Brown has reminded me that there are occasions often occurring in the practice of the itinerant photographer where only a single copy (on paper) of the subject photographed is in demand. He therefore suggested that I should try whether the process described would work satisfactorily in the case of negatives of a general character obtained by exposing bromide paper in the camera. Clearly the applicability of the process to such practice would greatly economise not only time but also cost of production. The suggestion came just on the eve of my departure from home, but the few experiments I was able to make proved its practicability and promise. The paper experimented on was "Wellington" brand; the highly glossed "Enammo" variety proved the most suitable. I tried exposures which were obtained by multiplying the exposure given by Wellington's calculator for a plate of speed  $\frac{1}{4}$  by factors varying from 20 to 40. The smaller factors give darkly printed positives showing but little contrast in the shadows; the larger factors give lighter (weaker) positives showing greater contrast in the shadows. If, by inadvertence, too great an exposure is given, resulting in a very soft negative, it is advisable to use as silver solvent a bichromate solution acidulated with sulphuric acid and composed as follows:—

Potass. bichromate .....	1½ drachms.
Conc. sulphuric acid .....	20 minims.
Water .....	10 ounces.

In the case of bromide papers the illumination before secondary development must be less intense than in the case of black and



te lantern-slide work. I used a gas flame of about one candle. er placed thirty inches above the developing dish. Expo- s to this light was continued till the portions of the paper eected by the rebate of the dark-slide began to darken. ol-quinol developer was used of the same composition as e, saying that no bromide of potassium was added to it. prints will be found to be of a greyish colour when taken n the developer; they darken considerably when placed in fixing-bath. The tones on bromide paper resulting from the ndary development of this process are for some reason or er not at all pleasing, hence recourse was always had to sul- e toning. The procedure described by Mr. C. W. Piper the "B.J." for August 14, 1908, gives, in my opinion, the e results.

he pictures thus obtained are, of course, laterally reversed,

a matter of little consequence in portrait work, where the sub- ject is (more or less) symmetrical. With a view to the attain- ment of rectified positives of non-symmetrical subjects, trials were made in which the bromide paper was exposed film side away from the lens. Preliminary experiment showed that the exposure under these abnormal conditions must be increased thirty times. The results were as satisfactory as could be expected. Naturally the definition of these non-reversed posi- tives could not compare with the crisper definition of the re- versed ones, for the light must necessarily be scattered and diffused in its passage through the non-homogeneous paper sup- port to the film. Even so, the definition was still quite good enough for the purposes of portraiture, in which a certain amount of diffusion of focus is not an unqualified evil.

DOUGLAS CARNEGIE.

## ENLARGED PAPER NEGATIVES DIRECT BY REVERSAL WITH PERMANGANATE.

Appos of the above method of Mr. Carnegie's, the following article by the Rev. F. C. Lambert, M.A., may be quoted from the current issue of "Photographic Scraps."]

a reversal of an image by permanganate has been revived by use of a similar method in the Lumière Autochrome process, the procedure may now be more widely adopted. Iford slow bromide paper (or an Ilford "Ordinary" plate) is ex- posed (by contact or through the lantern) and developed—but not d—in the dark-room. The positive image is next dissolved and moved. The paper or plate is then again flooded with developer exposed to strong gaslight at the same time; finally it is fixed, shed, and dried.

strongly advise the beginner to be content with making a few tact experiments just at first, using bromide paper and a quarter- e original negative. A bright and plucky negative, but not too use, should be chosen. Put it in an ordinary printing-frame. In tact place a piece of Ilford smooth slow bromide paper. Make pencil-cross on one corner of the back of the paper. As a rough e give an exposure of 15 seconds at 4 feet from an ordinary 4 or 5 gas burner.

For development dissolve 8 grains of potassium bromide in one ce of water, that is one grain of bromide to each 60 minims of ution. Of this take 30 minims ( $\frac{1}{2}$  gr. bromide), 25 minims of inal, and water to make 1 oz. The positive picture should be ly developed, that is to say until a suspicion of the highest lights e be just seen on the back of the paper; very full development is ential to the success of the process.

The positive obtained will look too dark and too dense for any inary purpose. The print is rinsed and put into a saturated ution of common (potash) alum for a few minutes. It is then ed out, laid flat in an empty dish, and the alum bath is converted o a reducing bath in the following way:—To 2 ozs. of the satu- ed solution of alum add 1 drachm of a 20 per cent. solution of phuric acid and 10 drops of a solution of potass. permanganate, hich should give the whole a fine, full port-wine colour. The print immersed in this mixture and the image steadily dissolves. The print should be turned over once or twice and plenty of time owed for the bath to act thoroughly.

This bath should be made up fresh for each print, otherwise the e becomes badly stained. In any case it is probable that there ll be a little stain, but this can easily be removed by washing in weak solution of oxalic acid. Dissolve say 10 grains or so of oxalic cid in half a pint of water; immerse the print in a couple of ces of this, rock and turn over, empty the dish of solution, take other 2 ozs. and so on. Two or three such washings are usually ough to remove the stain.

The print is next washed in a gentle stream for about five minutes, turned over several times, and then drained, laid flat on the bottom of a dish, and the dark-room gas turned up. The print is held up to the gas for say half a minute at a distance of 1 ft., and the developer that was first used is again applied. If nothing is seen at the end of a minute, the developer is poured off into the graduate, the print exposed again to the gas flame, and the developer again applied.

For this second development plenty of time must be allowed as it is slower. Of course it is understood that the naked gas flame is kept alight all the time during the second development. But as soon as the negative image once starts to develop, it will probably not be necessary to pour off the developer and give any more exposure near the gas flame; the developer being practically colourless, the rocking of the dish in the room, with the ordinary gas flame burn- ing, will give enough light to urge on the image-formation. For the second development we must go on developing until the shadows of the picture, that is the light parts of the second negative, are just visible on the paper. When looking through the paper negative, we must bear in mind that we have the paper itself, as well as the negative image and silver to allow for.

For fixation I advise an acid fixing bath, as this helps to keep the paper clean and stainless. The following proportions are con- venient:—

Water .....	20 ozs.
Hypo .....	3 ozs.
Soda bi-sulphite (acid sulphite) ....	$\frac{1}{2}$ oz.

Let one of these negatives, after well washing and drying, be printed on bromide by contact. It will be found (1) that the paper negative requires about 1 min. exposure at 2 ft. as compared with 15 seconds at 4 ft. in the case of the glass original negative, a differ- ence of say 16 to 1. (2) It will be noticed that the second negative is reversed as regards right and left. Therefore, when we are making an enlarged negative (with enlarging lantern) and want our large negative to print the picture the same way round as the original little one, we must remember to put the small negative in the enlarger, with its glass side towards the bromide paper used for its enlarge- ment. Otherwise the procedure for the enlarged negative is exactly like that just described. The exposure of the enlargement must be sufficient to penetrate the densest parts of the negative, and develop- ment should be full with ample time allowed.

REV. F. C. LAMBERT, M.A., F.R.P.S.

## MAKING ENLARGED PAPER NEGATIVES FROM NEGATIVES.

The following method of making paper negatives direct from negatives is described in "Photo-Notes" for October. The process is very simple, and there is no very apparent reason why it should not be adapted to the production of a ready-toned positive enlargement from a lantern slide, or the production of duplicate negatives on glass. Possibly some slight modification of Mr. Morison's methods may be necessary in such cases, and a good deal will no doubt depend on the first exposure.]

ATTENTION has often been directed to the making of a negative from negative by printing and developing a positive, then dissolving

away the reduced silver image, exposing the remainder of the silver bromide to light and developing it. The new negative is thus built

up from the silver salts that in the ordinary process of making a positive are fixed out in the hypo bath. The following process is more or less the reverse of this one, and while perhaps not new is rather more easily carried out.

Various densities of negative can be secured by varying the first exposure. Generally from two to three times the exposure required for a good positive should be given. Proper time, however, varies somewhat with the paper employed.

The working instructions for paper negatives are as follows:—Exposure is made by contact or through the lantern, and the print is developed as far as it will go without fog. It is then rinsed in water and placed in a chrome alum bath, after which it is flooded with the usual sulphiding solution employed in sulphide toning until the action of the sulphide is complete. The paper must then be well washed free of all sulphide and the original developed image is then bleached out with any convenient bleacher, such as ferricyanide and bromide, and dissolved by a fixing bath of hypo.

The result is a finely graduated negative and the printing density is good owing to the colour of the deposit. This density can be regulated by the first exposure, during which also any local shading or the insertion of clouds can be effected. A long exposure gives a thin negative, and vice-versa.

Lantern slides can also be made by this process direct from lantern slides, and the resulting image is of course a toned one.

WILLIAM MORISON.

#### SIR BENJAMIN STONE ON PHOTOGRAPHY.

THE current issue of "M.A.P." presents in its series of autobiographical chapters, "In the Days of My Youth," Sir Benjamin Stone, M.P., who contributes an interesting account of his career as a collector and maker of photographs.

"My first collection of photographs," says Sir Benjamin, "was such as I could buy. The pictures were poor and small, but I contented myself with them until the time when I had to go to the middle of America and to South Africa, when I was compelled to make myself a photographer, for I could not get the pictures that I wanted, either for love or money. My collection now embraces records in every part of the world. It numbers something like 30,000 photographs, fully half of which are my own work. They are all catalogued and arranged in boxes according to the geographical positions they illustrate, so that I can refer to any of them at a moment's notice.

"While photography has been a hobby with me, I had very definite objects in view, and these induced me to pursue the course I have done. I should like to emphasise this point, and to say that in my opinion photography is the most perfect means we have of conveying any kind of knowledge in the easiest and most comprehensive manner. No description, however well written, will enable one to describe a given object at a glance. A photograph does this absolutely, and is at the same time the most perfect form of picture one can have, always provided, of course, it is made by a man who is skilful. It thus becomes an absolute record of the object which can be conveyed at once to the intelligence of people, who are made to realise the truth concerning that object. There are photographs, however, which are not truthful. Some of these are cinematograph pictures which are made up of untruthful elements, and therefore are not truthful. Something of the same character applies to the pictures which are printed in the daily papers. They are not only poor in their work, but inaccurate in that they convey the wrong idea. Others, however, are worse still, for they are manufactured pictures which are photographed in order to convey the idea that they have been taken on the spot. These are not only untrue, but are purely imaginative, and the attention of the House of Commons has actually been called to some of them. This happened in connection with a certain picture supposed to represent scenes which had occurred in Ireland.

"My first chief aim in photographing is to record history. My next is that, having provided these records of the best possible kind, they should be multiplied in a cheap form to be used in teaching in schools. In other words, that there should be a magic-lantern in every school in the land, to be used not merely for purposes of amusement, but for purposes of instruction. My third aim is that there

should be some central authority—a Government Department, in—which should provide sets of pictures to be supplied to the teachers for their classes in all the elementary schools in the country. I would have the Universities to distribute, from the central authority, technical subjects to teach history, like Assyrian history, for example, which should be placed by the side of the real objects in the museums, so that they might easily be compared. Next, I would have pictorial representations of every country to teach the child what those parts of the world were like, and, lastly, all the treasures in all our museums should be photographed, and photographed cheaply, to be exchanged with similar institutions all over the world. In this way the vast treasures which are not even known to us by hearsay would become available for exhibition to the pupils of all the schools, and could not help producing a salutary effect on their intelligence and taste."

#### AWARDS AT THE FRANCO-BRITISH EXHIBITION.

The following are the awards of the British exhibits in Class 11.—Photography: Materials, appliances, processes and products. Awards to French exhibits are not yet announced.

##### GROUP 3.—DIPLOMA FOR GRAND PRIZE.

British Pictorial Photography.	Senior, Edgar.
Oxford University Press.	Butler, Chas. P.
Ilford, Ltd.	Cambridge University.
Burroughs, Wellcome and Co.	Waterhouse, Major-General.
Dallmeyer, J. H., Ltd.	Watts, W. W.
Valentine and Sons (1907), Ltd.	Stoneyhurst College Observatory.
"Daily Mirror."	
Public Works Department (Sydney).	Jones, Chapman.
Government, South Australia (Australia).	Lockyer, W. S.
Government, New Zealand (New Zealand).	Stead, J. E.
Lafayette, Ltd.	National Physical Laboratory.
McClellan, W. M.	Tarrant, Kenneth J.
Hartley, Prof. W. M.	Cornish, Vaughan.
	Mauder, Mrs.
	Solar Physics Observatory.
	Beilby, G. J.

##### DIPLOMA FOR GOLD MEDAL.

Savory, E. W., Ltd.	Macnaughten, Mrs. Ellen.
Greenham and Evans (Australia).	Poulsen, P. (Australia).
Schmidt Studios (New Zealand).	McGann, Terence (Australia).
Beattie, Mr. (Hobart, Tasmania).	Le Faivre (Fiji, Colonies).
Guggisberg, Major J. G., R.E., C.M.G.	Lawrence, Captain (Colonies).

##### DIPLOMA FOR SILVER MEDAL.

Kinora, Ltd.	Brown, E. Styant.
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##### DIPLOMA FOR BRONZE MEDAL.

Gray, John.	Gentil, J. G.
Rehaut, G.	

In Class 11.—Typography and drawings reduced by mechanical or photographic processes—diplomas for grand prize are awarded to Bemrose and Sons, Ltd., Carl Hentschel, Ltd., Valentine and Sons (1907), Ltd., and others.

PHOTOGRAPHS OF THE FRANCO-BRITISH EXHIBITION.—An exhibition of photographs of the exhibition or of photographic work done in the exhibition grounds will be held in the Congress Hall, October 27 to 31. The exhibits will be divided into the following classes of architecture, figure studies (prints) and lantern slides (any subjects). Gold silver and bronze medals will be awarded in each class, and there are also supplementary prizes offered by the Kodak Co. for the best photographs taken with a Kodak, and Messrs. Ilford, Ltd., for the best photograph on Ilford plates and papers. All prints should be sent in by October 23, addressed to the Secretary, Photo-Competition, Franco-British Exhibition, London W.



## Exhibitions.

### ROTHERHAM PHOTOGRAPHIC SOCIETY.

THE Rotherham Exhibition, promoted by this local society, has been held during the past week (October 14 to 17), and has received liberal support from exhibitors, and a large share of patronage from the townspeople. With a persistency which has had the best results, the promoters have gone forward until the effort is regarded as one of the features of the year. It was the nineteenth annual appeal, and in various directions indicated growing interest. In the open section there were 188 exhibits, the most attractive class being landscape, with the others well up in numbers. A section of colour work received fifteen entries. Members made a much braver display, and particularly in still life and flower and fruit studies good advancement was noticeable. Messrs. Dallmeyer lent their series of American portraits; the Rotary Photographic Co., examples of colour work; and Messrs. Lumière and Captain W. J. Stomm, Harrow-on-the-Hill, Autochromes. A department of much interest was a loan collection of transparencies by members. The opening ceremony was performed by Miss Mary L. Egerton, of York (a former member of the society), Mr. C. H. Moss, J.P. (president), presiding. The company, which was a large one, included the Mayor and Mayoress (Dr. and Mrs. Lodge). This ceremony was followed by afternoon tea at the invitation of the Ladies' Committee. Each evening there were animated pictures and prize lantern slides, and a musical programme. Messrs. C. Barrow Keene, F.R.P.S., and T. A. Scotton, of Derby, were the judges. Their awards were as under:—

#### OPEN SECTION (AMATEUR OR PROFESSIONAL).

Class A—Landscape, Seascape, and River Scenery—Bronze Plaque.—"A Sussex Cottage," C. H. Hewitt, London; "Shields' Harbour," John Walton, Sunderland; "Sunlit," Edwin Marks, Stoke-on-Trent; "A Landscape," James W. Gallimore, Sheffield. Hon. Mention.—"Near Brockhurst," C. H. Hewitt, London; "A Peaceful Evening," Francis A. Tinker, Sheffield.

Class B—Portraiture, Figure Studies, and Animals—Bronze Plaque.—"Chaffinches," George A. Booth, Preston; "A Study," Joseph Bell, Sunderland; "The Captain," B. B. Mewburn, Sunderland. Hon. Mention.—"Portrait," R. M. Vaughan Evans, London; "The Village Blacksmith," James A. Martin, Loughborough; "A Stranger in the Village," Norman Blake, Bedford.

Class C—Architecture—Bronze Plaque.—"Through an Ancient Gateway," F. C. Boyes, Ilford; "A Flood of Sunshine," Alfred Roffey, Birmingham. Hon. Mention.—"Morning Light, Wells Cathedral," John Dunlop, Motherwell.

Class D—Flowers, Fruit, and Still Life—Bronze Plaque.—"Pinks," Mrs. S. S. Laurence, Wembley, Middlesex; "Gooseberries," Geo. A. Booth, Preston. Hon. Mention.—"Lily of the Valley," W. T. Hebburn, Hamilton, N.; "Eggs," John Maddison, Middlesbrough; "Fungi," A. E. Peck, Rotherham.

Class E—Photographs in Colours (Autochrome or other colour transparencies included)—Bronze Plaque.—"A Group of Cupids" (from the original painting by Boucher), Captain W. J. Stomm, Harrow-on-the-Hill; "Oranges and Bananas," Eric W. G. Burden, Loughborough. Second Bronze Plaque.—"Strawberries," G. and D. Smith, Sheffield.

Class F—Lantern Slides. Sets of four. (Autochrome or other colour transparencies excepted).—Bronze Plaque.—Francis A. Tinker, Sheffield; Richard Hancock, Stechford; Alfred Taylor, Whalley, Lancashire.

#### MEMBERS' SECTION.

Class G—Landscape, Seascape, and River Scenery—Bronze Plaque.—"In a Derbyshire Dale," F. G. Blackshaw (1); "Leafy June," F. A. Jordan (2). Hon. Mention.—"Lynmouth," F. W. Crookes; "A Hive of Industry," F. A. Jordan.

Class H—Portraiture, Figure Studies, and Animals—Bronze Plaque.—"Skilled Work," G. W. Gulliver (1); "A Pensive Maiden," W. C. Briggs (2). Hon. Mention.—"A Cat Study," F. W. Thomlinson.

Class I—Architecture—Bronze Plaque.—"Here they Dwell no Longer," W. Firth (1); "Doorway," Ely, A. E. Rawson (2). Hon. Mention.—"From the South Choir Aisle," Ely, A. E. Rawson.

Class J—Flowers, Fruit, Still Life, and Miscellaneous—Bronze Plaque.—"A Study," F. G. Blackshaw (1); "There's Pleasure in Crime," W. C. Briggs (2).

Class K—Lantern Slides (sets of four)—Bronze Plaque.—Ralph Chislett (1).

Class L—Board of Exhibits—Bronze Plaque.—H. Rushforth (1); A. E. Peck (1). Hon. Mention.—A. S. Pye; G. Froggatt.

### FORTHCOMING EXHIBITIONS.

September 11 to October 24.—Photographic Salon. Sec., Reginald Craigie, 5A, Pall Mall East, London, S.W.

September 17 to October 24.—Royal Photographic Society. Sec., J. McIntosh, 66, Russell Square, London, W.C.

October 22 to 26.—Hove Camera Club. Sec., W. Chater Lea, Cransley Lodge, Dyke Road Avenue, Brighton.

October 27 to 31.—Heaton and District Camera Club. Secretary, George C. Urwin, 24, Tenth Avenue, Heaton, Newcastle-on-Tyne.

October 28 to 29.—Watford Camera Club. Sec., W. Branch, 100, High Street, Watford.

November 2 to 11.—Portsmouth Camera Club. Entries close October 24. Sec., F. J. Lawton, 20, Clarence Square, Gosport.

November 4 to 7.—Hackney Photographic Society. Secretary, Walter Selfe, 70, Paragon Road, Hackney, N.E.

November 11 to 14.—Cambridge and District Photographic Club. Entries close October 29. Sec., T. J. Sowdon, Sunny Side, Guest Road, Cambridge.

November 20.—Redhill and District Camera Club. Entries close November 7. Sec., J. Paterson, Ness House, Redhill.

November 23 to 26.—Lancaster Photographic Society. Sec., J. Holt, 11, Fern Bank, Lancaster.

December, 1908, to January, 1909.—Kiew International Photographic Sec., S. T. Horovitz, Technical Society, Kreshtchatik, 10, Kiew, Russia.

1909.

January 6 to 27.—Northern Photographic (Manchester). Entries close December 11, 1908. Sec., S. L. Coulthurst, Broad Oak Road, Worsley, Manchester.

February 13 to March 13.—South London Photographic Society. Sec., H. Creighton Beckett, 44, Edith Road, Peckham, S.E.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for Patents have been received between October 5 and October 10:—

COLOUR PLATES.—No. 20,971. Improvements in or relating to the manufacture of colour plates or screens for colour photography. Jens Herman Christensen, 111, Hatton Garden, London.

PROJECTION LANTERN.—No. 20,069. Insulated projection lantern. Charles Marshall Lungren, 52, Chancery Lane, London.

COLOUR SCREENS.—No. 21,097. Improvements in or relating to the manufacture of colour screens or plates for photography. Jens Herman Christensen, 111, Hatton Garden, London.

CINEMATOGRAPHS.—No. 21,098. Improvements in or relating to cinematographs and like apparatus. Benjamin Jumeaux, 111, Hatton Garden, London.

CONTINUOUS PHOTOGRAPHS.—No. 21,186. System for taking continuous photographs for panoramas, cinematographs, and for circular ordinary or stereoscopic photographs. Auguste Saunier, 116, High Holborn, London.

BACKGROUND SUPPORT.—No. 21,245. Improved support for optical

lantern screens and photographic backgrounds. Frank van Neck, 1, Cursitor Street, Chancery Lane, London.

TRIMMING APPARATUS.—No. 21,266. Improvements in apparatus in cutting or trimming photographic and drawing papers, and other thin materials or substances. John Merritt, 36, Chancery Lane, London.

CINEMATOPHGRAPHS.—No. 21,308. Improvements in or in connection with light cut-offs for cinematographs and the like apparatus. John William Harris, 30, Park Row, Leeds.

OPTICAL LANTERNS.—No. 21,328. Improvements in optical lanterns for enlarging and the like. William Pollock, 121, West George Street, Glasgow.

SLIDE CARRIERS.—No. 21,422. Improvements in slide carriers for optical lanterns. Walter Joseph Coles, 27, Bass Street, Derby.

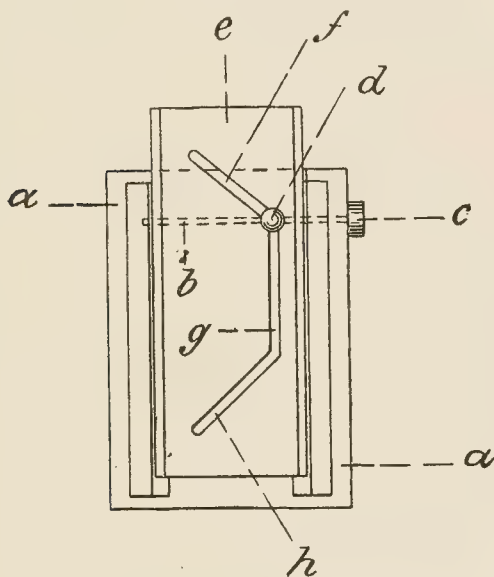
CINEMATOPHGRAPHS.—No. 21,495. Improvements in and relating to disc cinematographs and talking machines. Ferdinand von Madaler, 18, Southampton Buildings, London.

#### COMPLETE SPECIFICATIONS ACCEPTED.

These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

PRINTING FROM WET NEGATIVES.—No. 22,244. 1907. Protection is claimed for the method of laying a sheet of transparent celluloid upon a negative in order to print from it while in a wet state. After use the celluloid may be stripped off and used again, but if preferred it may be left on the film, in which case it will protect the film. Reference is made by the inventor to Specifications to Letters Patent, Nos. 24,750\*, of 1898, 25,942 and 28,793, of 1902, and 1,367, of 1877. Spence Lees, 57, Portman Road, Wavertree, Liverpool.

FOCUSING ADJUSTMENTS.—No. 11,835. 1908. For moving the focussing slide on the base board of a camera hitherto a single or double rack gear has been used. Apart from the increase in cost of making the camera, this gearing has the disadvantage of requiring a special device for fixing it in position, which was felt to be very troublesome, especially when taking photographs in winter and during tours on high mountains, where the work has to be done with chilled



and stiff hands. The invention consists in a novel device for adjusting the focussing slide without rack and wheel gearing. In the drawing a form of construction of the device is represented for a camera with two lengths of focus. For a single length of focus naturally only one side of the adjusting device is required.

In the base board *a* of a photographic camera a screw spindle *b*, which is represented on the drawing by dotted lines only, has its bearings. A small knob *c* serves for turning this spindle. Above the spindle a transverse slot is formed in the slideway, in which slot a nut *d* on the spindle can travel. The objective lens or the focussing screen itself is carried in the known manner on a slide *e*, and fixed according to the length of focus of the lens. In this slide *e* an inclined slot *f* is cut, through which a flat-headed pin on the nut *d* passes. If the knob *c* is turned in one or the other direction, the nut *d* is moved to and fro, and the slide *e* pushed forward or backward thereby.

When using the apparatus with two lengths of focus the slide *e* is drawn out for the longer distance, during which the flat-headed pin of the nut slides in a longitudinal slot until it arrives at the second inclined slot *h*. By turning the knob *c* in the reverse way, the setting of the focussing slide is again effected.

Naturally, only one inclined slot is required if the device is to be used only for one length of focus of the lens. The form of the slot is optional, it may be either straight or variously curved, according to the special object aimed at. Emil Wünsche, Actiengesellschaft für Photographische Industrie, Reik, near Dresden.

The following complete specification, etc., is open to public inspection, before acceptance, under the Patents Act, 1901:—

COLOUR SCREENS.—No. 20,909. Method of making polychrome screens for colour photography. Brasseur.

### New Trade Names.

WINGED SHIP (device).—No. 302,236. Chemical substances used in manufactures, photography, or philosophical research, and anti-corrosives. Paul Ruben, 56, Leadenhall Street, London, E.C., general merchant. April 13, 1908.

## Analecta.

Extracts from our English weekly and monthly contemporaries.

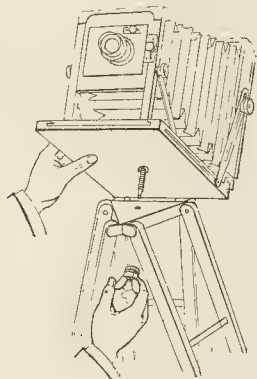
### Two Tones on the same Gaslight or Bromide Print.

The first operation (says a writer in "Photography and Focus" for October 20) is the production of the postcard, which is carried out in the usual way, the card being properly fixed and washed, and then allowed to get thoroughly dry. While the card is drying the necessary materials for the after operation may be got together. These consist of the toning bath, which may be of any of the recognised formulæ, copper, uranium, iron, etc., a small pot of vaseline, and the mask through which the "picture" portion of the card was printed. The card is laid face upwards upon a clean surface, and the mask is adjusted so that the view or portrait appears through the opening. The finger is then dipped in the vaseline, and this is lightly smeared over the picture, care being taken not to shift the mask. When the smearing process is complete the card is lifted by the edges and is placed in the toning-bath, which will, of course, be repelled by the vaseline, and will operate only on the border portion of the postcard, leaving the picture portion in its original condition. As soon as the toning operation is finished, the necessary washing is carried out in the usual way, and the card is once more dried. It only remains to remove the vaseline. Most can be wiped off with a soft duster, but if this is not sufficient for the purpose the print can be finished off by placing over it a piece of clean blotting-paper and pressing it down with a hot iron. This will be found to absorb the last traces of the vaseline. If it is the view that is to be toned, the border being left untuned, it is, of course, the blank which was left when the mask was cut that must be placed over the card, the vaseline being then smeared over the border. The great thing is to be careful that the whole area to be protected receives the coating of vaseline, and that none gets on the part that is to be toned, or patchy results will be inevitable.

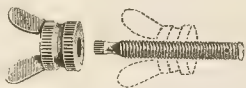


## New Apparatus, &c.

**A NON-IRRITANT TRIPOD SCREW.**—How many times has one wished for a tripod screw that one could insert into the camera board while the latter could be held up to the light of day, and then effect the attachment to the tripod head. Instead, one has had to fumble with the tripod screw under the top until a propitious moment arrived when the bush in the camera coincided with the aperture in the tripod



head. However, the firm of Mr. James H. Sinclair, of 54, Haymarket, W., has now issued a tripod screw which is so made that it can be first attached to the free camera, and the latter then placed upon the tripod and made fast with the fly-nut supplied with the screw. The screw allows of the camera being moved in the usual way on the tripod head, and is constructed in such a way that it will go into the camera only a sufficient distance to hold it. It is made



of quarter-inch Whitworth thread, suitable for nearly all British and American cameras, at the price of 1s., and should be a boon to the hand-camera worker. Mr. Sinclair might well bring out a stronger pattern for large cameras, whole-plate and over, which are rarely provided with a turntable head on account of the difficulty experienced in erecting such weighty instruments on a tripod secured to the camera one leg at a time.

**A STUDIO COMBINED TABLE AND SEAT.**—A studio accessory which very excellently serves two purposes is sold by Messrs. Houghtons



under the name of the "Carved Oak Monk's Bench." It serves as a table or bench, as shown in the drawing, but the table-top

swings back, forming a seat. The lid of base lifts up, and a handy box is thus provided. The accessory measures 2ft. 6in. in length, is 1ft. 3in. deep, and stands 3ft. 3in. high. The price is £2 12s. 6d.

**PLATE-MARKING POSTCARDS.**—A very simple and inexpensive attachment for the impression of a plate-mark on postcards is submitted to us by the firm of J. Billcliff, Richmond Street, Boundary Lane, Manchester, S.W. It consists of a die and template, each mounted in wood, and fitting within each other in such a way as to provide for the insertion of the postcard. The attachment is sold at 2s., and is intended to be worked by hand pressure, though it can be used in any press, such as a dry-mount. The apparatus works very effectively, and produces a strong impression. Messrs. Billcliff supply a screw press at 7s. and a lever press at 10s. 6d.

## New Materials, &c.

**"CAMEO" CHRISTMAS MOUNTS.**—The Tress Co. issue under this title a series of mounts of the slip-in pattern in dark green or brown, with gold lettering and an embossed profile of a head on the front cover. The mounts are of very tasteful appearance, and are sold at 4s. 11d. or 6s. 11d. per 100, according to size.

**TINTO BOARD MOUNTS.**—Under this name a novelty in mounting boards has been placed upon the market by Messrs. J. and W. Mitchell, Bordesley Paper Works, Birmingham, in the shape of a mounting paper which is differently coloured on its two sides. This duplex character is given to it with a nice regard for the requirements of the amateur photographer, the choice of tints being among those of quiet and unpronounced colour. The tints run in browns and greens, and the new mounting boards are put up in sizes from 5 x 6½ in. for quarter-plate prints to 7½ x 9½ in. for half-plate prints, in shilling packets; or they may be obtained in sheets up to 22 x 32 in. in size. Messrs. Griffins and Messrs. Kodak, Ltd., are agents for the supply of the boards.

**MOUNT STRUTS.**—A new line with the Tress Co., 4, Rathbone Place, is a strut which can be attached to any mount in order to permit of the latter being stood up on a table or in a window or showcase display. The strut is supplied all ready gummed, so that it is only necessary to moisten it and affix it to the mount. The price of these useful accessories is sixpence per dozen.

**DISPLAY OF SPECIMENS.**—The Tress Co., of 4, Rathbone Place, W., have added to the many specialties of theirs for the professional photographer that of mounting and displaying a set of specimen prints supplied to them for the purpose. The prints may be from six upwards in number, and are mounted by the Tress Co. with decoration of an appropriate character. The work is one which a photographer often feels himself unable to perform with success, although such work, intended as it usually is for display in show-cases and similar positions, is of great importance.

**"LINGRAIN" BROMIDE PAPER.**—A bromide paper with a surface which is something distinctive despite the almost innumerable brands of paper on the market is supplied by Messrs. John J. Griffin and Sons under this name. The paper has a surface resembling that of a very fine linen, with the result that while it gives a commendable softness of outline, the effect is not sufficiently pronounced to destroy the detail in the picture. We find "Lingrain" to be in other respects a bromide paper which gives excellent results with amidol and metol-hydroquinone developers, and also tones well by the sulphide process. It is sold at a price based on twelve half-plate pieces for 1s.

**EASTMAN PLATE COMPETITION (£240 IN PRIZES).**—Kodak, Ltd., announce that, in deference to the wishes of many intending competitors, prints for the third section of the competition will be received up to Monday, November 16, instead of October 20, as provided in the prospectus. Full particulars can be obtained from Kodak, Ltd., 57-61, Clerkenwell Road, London, E.C.

## CATALOGUES AND TRADE NOTICES.

**SECOND-HAND APPARATUS.**—A 56-page list of apparatus shop-soiled and guaranteed to be as described has just been issued by the Westminster Photographic Exchange, Ltd., 119, Victoria Street, London, S.W. It gives particulars of a great variety of hand and field cameras, lenses, enlarging shutters, and sundries, a total of more than 700 different lots, which are offered at substantial reductions on the "new" price. The list includes many excellent bargains, and the Westminster Exchange makes a very fair offer as to sending on approval.

**ARC LAMPS.**—A catalogue of arc lamps for portrait and process photography has been issued by the Electrical Co., Ltd., 121-125, Charing Cross Road, London, W.C. This firm supplies both open and enclosed arcs and the necessary electrical accessories.

**THE PRISM.**—The current number of this little magazine (sent for one penny stamp by Messrs. A. E. Staley and Co., 19, Thavies Inn, London, E.C.) deals with the manufacture of the microscope.

**THE PRIMUS LANTERNIST'S POCKET-BOOK AND DIARY.**—The 1908-9 edition of this useful pocket-book, edited by Mr. W. F. Butcher, is issued as before at 6d., and contains data as to electric and other lights, including description of the current obtainable in the chief provincial towns, a diary of engagements, and directory of dealers in lantern apparatus, with also an abridged price list of Messrs. Butcher's leading lantern apparatus.

**CRITERION PAPERS.**—A new list has been issued by the Birmingham Photographic Co., Ltd., Stechford, Birmingham, giving the full prices of their manufactures and including the "Nonstress" gaslight and bromide papers. The list is sent free on application.

## Meetings of Societies.

## MEETINGS OF SOCIETIES FOR NEXT WEEK.

## FRIDAY, OCTOBER 23.

Aberdeen Photo Art Club. "Bromoll and Rawlins' Oil Process." W. L. Dunn.  
 Ilkeston Arts Club. "On the Printing, Developing and Toning of Velox Papers." W. F. Slater.  
 Sutton Photographic Club. Annual General Meeting.

## SUNDAY, OCTOBER 25.

South London Photographic Society. Excursion to Epping Forest. G. Brown.

## MONDAY, OCTOBER 26.

Cripplegate Photographic Society. "Exposure for the Subject." C. W. Coe.  
 Bourneville and District Photographic Society. "On the Printing, Developing and Toning of Velox Papers." W. F. Slater.  
 South London Photographic Society. "P.O.P. Toning and Finishing." E. W. Taylor.  
 Southampton Camera Club. "Afar in the Fatherland." W. L. F. Wastell.  
 Bradford Photographic Society. "Some Photographic Attempts to Get Out of the Beaten Track." A. Houghton.

## TUESDAY, OCTOBER 27.

Bootle Photographic Society. "On the Printing, Developing and Toning of Velox Papers." W. F. Slater.  
 Manchester Amateur Photographic Society. Lantern Slide Testing Night.  
 Hackney Photographic Society. "Westminster Abbey and its Place in English History." A. H. Hester.  
 Birmingham Photographic Society. "Some Picturesque Midland and Cotswold Villages." W. A. Clark.  
 Kinning Park Camera Club, Govan. "Cycle, Camp, and Camera." Robert Gracie.  
 Leeds Photographic Society. "The Fringe of the Austrian Alps." C. B. Howitt.

## WEDNESDAY, OCTOBER 28.

Everton Camera Club. "On the Printing, Developing and Toning of Velox Papers." W. F. Slater.  
 North Middlesex Photographic Society. "An 'Autochrome' Tour, Torquay and District." A. J. Woodway.  
 Wimbledon Park Photographic Society. "Defects and their Remedies in the Negative and Print." W. J. Randall.  
 Croydon Camera Club. "Toning Bromide Prints." H. W. Bennett.  
 South Suburban Photographic Society. "Yesterday and To-day in Photography." E. G. Price.  
 Leeds Camera Club. "How to Make a Bromide Enlargement with an Ordinary Lantern." H. Crossley.  
 Edinburgh Photographic Society. "Development." T. Drummond Shiels.  
 Borough Polytechnic Society. Summer Outings' Print Competition.

## THURSDAY, OCTOBER 29.

New Mills Camera Club. "On the Printing, Developing and Toning of Velox Papers." W. F. Slater.  
 Richmond Camera Club. Paper by F. P. Cembrano, F.R.P.S.

Melbourne (London) Camera Club. "The Choice and Use of Apparatus, with Short Treatise on Lenses." The President.  
 Rugby Photographic Society. "How to Make and Manipulate an Enlargement." G. B. Morgan.  
 Blackburn and District Camera Club. Whist Drive and Dance.  
 Liverpool Amateur Photographic Association. "By Battlement, Wall, and Tower." James Shaw.  
 Redley, Farsley, Calverley, and Bramley Photographic Society. "Large Pictures from Small Negatives." H. Crossley.  
 Handsworth Photographic Society. "The Naturalist and his Camera." Herbert Thompson.  
 Chelsea Photographic Society. "Ozobroma." T. Manly.

**LEEDS PHOTOGRAPHIC SOCIETY.**—The opening meeting of the session was held at the Leeds Institute (the new quarters of the society) Cookridge Street, on October 13, and took the form of a social evening and exhibition of members' work. Ninety-one prints were sent for exhibition, contributed by the following members:—Miss Edith M. Scholes, Messrs. Banks, Denham, Fielding, Edwards, Jackson, Mackay, Morfitt, Rodwell, and Walker. Mr. J. H. Gash showed a splendid selection of Autochrome photographs, which were well displayed and greatly admired, as were also a collection of prints from "The Guild" and a small loan collection by the members of the Leeds Camera Club. Coffee was served during the evening, and a really splendid programme of music was contributed by Miss Florence Carter, Mr. Arthur Wheelhouse, and Mr. E. P. Stead. Miss Carter possesses a contralto voice of very fine quality, and her highly cultivated style and the beautiful rendering of the songs "Beloved, it is Morn" (Aylward) and "Good-bye" (Tosti), were much appreciated. The programme concluded with an exhibition of lantern slides by Mr. J. Allen and Mr. Godfrey Bingley. The usual votes of thanks brought to an end one of the most enjoyable evenings in the annals of the society.

**EDINBURGH PHOTOGRAPHIC SOCIETY.**—The forty-ninth session of the society has opened promisingly. The rooms in Castle Street have been re-decorated in a most pleasing manner, and are now admirably suited for pictorial exhibitions, as well as for supplying the other wants of the large membership, which amounts to nearly four hundred. A syllabus of more than ordinary interest has been prepared for the session by the energetic hon. secretary, Mr. J. S. McCulloch, W.S., and informal meetings for the discussion of difficulties and for practical demonstrations are to be a prominent feature of the winter work. The president's opening address was given on October 13 by Mr. J. F. Duthie on "High-Speed Photography." Many beautiful examples were shown by lantern, and enlargements from small negatives of moving objects were exhibited. Mr. Duthie spoke of a large aperture lens and a focal-plane shutter as being almost indispensable and he favoured the reflex camera as being the best for high-speed work. While admitting that time development was convenient and reliable, Mr. Duthie advocated individual treatment of negatives as giving the best results. An interesting discussion followed the reading of the paper.

**FLASHLIGHT PHOTOGRAPHY.**—Lecturing to some forty members the South Suburban Photographic Society at Plough Hall, Lewisham, on Wednesday evening, the president (Mr. F. J. Mortimer, F.R.P.S.) expressed surprise at the unnatural results obtained by the professional photographer when he took a stage photograph, and said he should like to have an opportunity of trying whether it was possible to get in a photograph the exact effect which one sees from the front row in the pit. The professional, he guessed, from the stage pictures published in the illustrated papers, disposed his flashlight so as to give top and side lighting, as if he were taking an ordinary interior. He forgot that the stage, as we see it from the front, is lighted from the footlights and from the wings. To secure a natural effect then the photographer should dispose his flashlights at the footlights and in the wings, so as to give the same lighting as that we ordinarily see from the auditorium. By means of diagram lantern slides, and apparatus, he explained and illustrated the whole mystery of obtaining soft results in flashlight photography, and avoiding the harsh soot-and-whitewash appearance of the flashlight photograph one so often sees, and he offered a prize for the best flashlight photograph in a competition, to be judged at the end of the session.

**CROYDON CAMERA CLUB.**—Mr. A. C. Braham, F.R.P.S., of the Autotype Company, an old friend at Croydon, gave a demonstration of the carbon process last week. There was little new to chronicle.



but a process which may almost be regarded as having reached state of splendid finality, but the string of questions which the lecturer encountered bore testimony to the interest evinced. At onset some amusement was caused by the suicide of a small colony of ants in the cold-water tank. Mr. Braham objected to his presence, and whilst fishing them out one by one somewhat suspiciously enquired how they had got in. "You must blame the lecturer company," said a member. "I shall do nothing of the sort," retorted the lecturer, "and, moreover," he added, glancing reflectively at the many signs of liquid sustenance around him, "I do not regard any member of this club as an authority on water gardening." This was a case of "the pot calling the kettle black" with a vengeance, for with delightful irony Mr. Braham was holding a "bibulous board" in his hand at the time, and must have been aware that the many fine Autotype pictures scattered about rested purely by suction.

In answer to a question, the lecturer said that the appearance of backing paper when stripped was no indication of correctness of exposure, though many thought it was. It seemed a pity that the backing-papers, with their oozing pigment attached, were in cases thrown away. Several of these showed distinct signs of a future which in these days of "salon impressionism" might usefully have been spared. Irrespective of qualities open to debate, there was sufficient diffusion of image, together with a sort of automatic originality of treatment, which should appeal strongly to modern combined judge and exhibitor. Replying to another question as to the alleged necessity for collodionising the tissue when making transparencies on substratumed glass—an operation which most amateurs fight shy of—Mr. Braham said its adoption was not compulsory years ago if fine details in the high-lights were to be preserved and reticulation of the film avoided. The present Autotype tissues, however, worked well without it, and failure would rarely be met with, owing to its omission. Among the many useful "tips" furnished was one to the effect that if the tissue is dry or somewhat horny perfect contact might be secured between it and the negative by the simple expedient of warming the paper pad. This should invariably be done with large prints.

## Commercial & Legal Intelligence.

**INLAND REVENUE PROSECUTION OF THE "FREE-ENLARGEMENT" VASSER.**—At the Worcester County Petty Sessions last week (Friday) Brown, 21, Clarence Gardens, Clarence Road, Lower Clapton, London, was charged with trading without a hawkers' licence at the sale of enlarged photographs. Mr. Shaw prosecuted for the Inland Revenue. He said defendant and four other men took up their residence at Bedwardine House, St. John's, for about two months. The procedure adopted by them was that one man travelled round, calling upon publicans and other persons, showing to them an enlargement of a photograph, and offering to execute, free of charge, a similar enlargement of a photograph, which could be hung up as a sort of advertisement. Then, a second person (in this case the defendant) called with the enlarged photograph and some specimens of moulding for frames, and the person who desired the enlarged photograph was then told that he must purchase a frame before he could have the photograph. The first person took any objection, and said he was told he could have the enlargement free, he was told that he must have made a mistake. In most cases the persons desiring the photograph selected a moulding and bought a frame. Of course, added the advocate, the price of the frame was amply sufficient to pay for the photograph.

Mr. Shaw, referring to the legal aspect, said defendant had refused to take out a licence. The case clearly came within the definition of the Act. Defendant travelled with a horse and trap, and carried specimens of moulding. There were certain exemptions under the Act, but none of these applied to defendant's case. Mr. G. F. Bradley, Inland Revenue officer, said that he saw defendant hawking enlarged photographs at the New Inn, Sinton Green. Defendant had an enlarged photograph of Mr. John Evans' daughter, and offered to do another

on Mr. Evans paying for a frame. Mr. Evans, in his evidence, said he paid £1 15s. 6d. in all for the two photographs and frame. Defendant, who did not appear, was fined £1 1s. and costs, £3 12s. 6d. in all.

**A FOLKESTONE BANKRUPTCY.**—Under a failure of Benjamin Knight, of Fairmeade, Lyminge, carrying on business as a photographer, at Ben's Studio, 58, High Street, Folkestone, under the name of "Ben's Studio" (formerly of Dover), the Official Receiver has issued a statement showing the indebtedness to be £219 16s. 9d. and the deficiency £212 17s. 11d. The causes of failure, as stated by the debtor, are bad trade, competition, and ill-health. The Official Receiver's observations are as follows: The debtor (aged 21 years) was compelled to file his petition owing to pressure by creditors. He first started in business in October, 1905, as a photographer, in Biggin Street, Dover, with a free capital of £25. In the following February he opened a branch business at 46, Tontine Street, Folkestone, where he attended daily at certain hours. He contends he was doing fairly well, and towards the end of 1906 he removed from Biggin Street to larger premises—namely, 4, Snargate Street, Dover. Subsequently he found that having to work the Dover and the Folkestone businesses was more than he could manage, and a year ago he disposed of the Dover business for £68, out of which he paid the rent, rates, and taxes and local creditors. He then devoted the whole of his attention to the Folkestone business, which he continued at 58, High Street, Folkestone, having formerly given up the rooms in Tontine Street. He states that when he left Dover he was over £100 in debt, but continued to trade hoping to recover his position. He admits he discovered his insolvency about a year ago, and although he alleges his deficiency at that time was only small (as shown by the above deficiency account), by continuing to trade his affairs have become more involved, so much so that in February this year practically the whole of his furniture and effects were seized and sold under an execution. Since that time, he alleges, he has done a little work, a camera being lent to him. The debtor has not kept any cash-book or an accurate record of his receipts and payments. Of the 30 unsecured debts, seven, amounting together to £162 17s. 7d., exceed in amount £10 each, including a loan by a friend of £35 17s. 6d. All the debts appear to be for trade and domestic purposes contracted during the last three years. This bankruptcy has no connection with the business now conducted under different proprietorship at 4, Snargate Street, Dover.

**THE UNITED ARTISTS' GUILD.**—At the Maidenhead County Court, on October 14, Mrs. Ethel Mary Williams sought to recover 14s. 6d. from the United Artists' Guild, a London company. The action was not defended, and there was not a representative of the Guild present. Mr. J. E. Mason appeared for the plaintiff, and at the outset he stated that it was a case in which the money was paid under a misrepresentation of facts. A representative of the firm brought the picture to him on Tuesday, but he refused to accept delivery of it. Plaintiff stated that on August 10 last a lady agent of the firm called upon her and asked her if she would care to have an enlargement of her portrait, her husband's, or that of any other member of the family. She told her she could not afford it. "Oh," said the agent, "it's not a case of afford; it is simply to advertise our work." After some persuasion, she handed the lady a photograph of her husband, and she left. Some days later a man called and said that there was 14s. 6d. to pay, and that when this was paid the enlargement would be sent on. Plaintiff was dumbfounded, and told him she understood from the lady who first called that there was nothing to pay. "You knew different," the man replied, rudely. "Why did you take notice of that girl? She was for getting custom." Proceeding, plaintiff said that she asked the man to call again, as she had no money and her husband was not at home. He said he could not be bothered with that; he must have the money there and then, or he would "County Court" her. Being frightened, she borrowed the money from her lodger and gave the man the money. She had not received the enlargement.

Mr. Mason said the same thing had happened in several houses in the neighbourhood. The case, he added, amounted to one of duress.

His Honour said it was quite clear that Mrs. Williams was induced to pay because she was frightened by the demeanour of the man, and from her evidence it seemed that she was entrapped into paying

by something in the nature of a threat. He was surprised that if the claim was a genuine one there should be no one there to represent the company. He ordered the return of the money, with costs against the company, payment to be made forthwith.

We are glad to see that a local photographer, Mr. H. Southgate, of Station Road, Maidenhead, has taken the opportunity of drawing attention to this case. He has issued a circular, reprinting the above particulars and adding the paragraph:—

"There are several reliable photographers in the town of Maidenhead who are always ready to supply first-class enlargements which, both in quality and price, will compare favourably with those offered by outside canvassing firms. It will be to your interest to place your orders with local professional photographers, who pay the local rates and taxes, and on whose honourable and straightforward dealing you may safely rely."

Mr. Southgate informs us that he is agreeable to supply copies of the complete circular at cost price to other photographers who may be desirous of using it as an exposé of the "free portrait" fraud.

#### NEW COMPANIES.

**SCREENLESS PHOTO-ETCHING, LIMITED.**—Registered September 30. Capital £10,000, in 9,900 ordinary shares of £1 each and 2,000 deferred shares of 1s. each. Objects: To carry on the business of printers, publishers, photo-etchers, etc. Minimum cash subscription, 20 ordinary shares. Registered office, 5, Henrietta Street, Covent Garden, W.C.

**SOUTH LONDON PHOTOGRAPHIC COMPANY, LIMITED.**—Registered October 1. Capital £2,000, in £1 shares. Objects: To carry on the business of photographers, photographic enlargers and reducers, art dealers, dealers in photographic materials and scientific and optical instruments, etc., and to adopt an agreement with F. G. Waghorne. Private company.

**EUROPEAN BLAIR CAMERA COMPANY, LIMITED.**—Registered September 30. Capital £15,000, in £1 shares. Objects: To adopt an agreement with L. Devillaine, of Grenoble, France, and to carry on the business of photographic film or plate manufacturers, manufacturers of cameras and other photographic apparatus, etc. Private company.

## News and Notes.

**GUIDE BOOKS TO WINTER RESORTS.**—Those about to select a seaside town in which to pass the winter months may be glad to know that a postcard sent to the Town Clerks of Bournemouth and Falmouth will bring them, post free, an illustrated booklet, giving particulars of these two favourite winter resorts. The little books, which are edited by Mr. George W. May, and published by the Health Resorts Association, 29, John Street, Bedford Row, London, W.C., contain a large amount of information in a small space, and are worth a careful perusal.

**LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.**—Thursday, October 29, is to be a ladies' night at the L. and P. On this occasion Mr. A. H. Blake will lecture on "London in the Eighteenth Century."

**THE SALON SMOKER.**—Mr. Reginald Craigie writes us that the members of the Linked Ring much regret that, owing to the large amount of space occupied by the apparatus for the display of the colour photographs in the gallery, it has not been found practicable to hold the usual Salon smoker this year.

**THE DUNCAN RESEARCH LABORATORY.**—Mr. F. Martin-Duncan, F.R.P.S., whose photographic work in photo-micrography and cinematography and colour photography has been so successfully applied to educational and natural history purposes, has, we learn, established a laboratory for research work, which is to be fully equipped for the production of photo-micrographs, biological and natural history photography, photography in natural colours by the Autochrome and

trichromatic processes, and for all work in connection with the various applications of photography to science.

The photo-micrographic department is equipped with the latest and most perfect apparatus for the production of high-class photo-micrographs. Every care is taken of all microscopical preparations sent to the laboratory, and that the best possible photographic record of the preparations are obtained. A special feature is made of the photographing of serial sections and of serial photographs, to demonstrate growth, change of form, etc.

For the convenience of private practitioners, hospital X-ray departments, etc., Mr. Duncan will make a specialty of the developing of X-ray negatives and printing therefrom. He will give expert advice on the most suitable plates and apparatus for X-ray work. Those needing expert help in any of the above directions can feel confident in placing themselves in Mr. Duncan's hands.

**THE L. AND P. SUPPER.**—Thursday evening in last week found the members of the L. and P. in a rather frivolous mood, it being the occasion of the annual supper. A large party of members and friends gathered together, and voted the evening a big success. The following toasts were gone through: "The L. and P.," by Mr. Haddon (chairman); "The Visitors," by Mr. Charles Greenwood, who coupled with it the names of Mr. Date and Mr. Woodland, these two gentlemen afterwards responding; "The Press," by the hon. secretary, Mr. Ernest Human. Mr. Freshwater proposed the health of the chairman, which was taken with musical honours, and thus a pleasant evening was brought to a close at a late hour.

**ROYAL PHOTOGRAPHIC SOCIETY.**—The following are the two closing lectures to be delivered at the New Gallery:—  
Friday, October 23.—Autochrome lecture, "The Thames from Kew Gardens to the Sea." By J. McIntosh.  
Saturday, October 24.—"The Camera and the Sea." By F. J. Mortimer, F.R.P.S.

**THE RAJAR CAMERA,** offered monthly by Messrs. Rajar, 1907, Ltd., Mobberley, Cheshire, for the best print on "Rajar" P.O.P., has been awarded to H. Ridge, London Road, Newport Pagnell, his print having been judged the best sent in during September. The paper on which the print was made was purchased from Mr. Hogson, Church Street, Wolverton.

**LYCEUM CLUB PHOTOGRAPHERS.**—The photographers' section of the Lyceum Club held its first annual meeting on Friday, October 16, when the following members of the section were elected to serve on the Advisory Board for the coming year:—Mrs. George Arbuthnot, Miss Gertrude Bacon, Mrs. Bulstrode, Mrs. Aubrey Le Blond, Mrs. Carine Cadby, Miss Chadwick, Miss D'Espaigne Chapman, Mrs. Reynolds, Mrs. W. N. Shaw, Miss Lizzie Caswall Smith, Miss Susett Taylor, Miss E. L. Turner, Mrs. Victor H. Veley, and Miss Agnes B. Warburg.

**VICTORIAN PHOTOGRAPHIC AFFILIATION.**—The Victorian Photographic Affiliation's first open exhibition will be held in the Victoria Artists' Society's Galleries, Melbourne, in February next. The "Affiliation" is the governing body in connection with amateur photography in Victoria, all the leading clubs in the State being affiliated with it. Exhibits are being invited from England and other parts of Europe and from America, as well as the other States, and according to information received the committee have every reason to believe the exhibition will be a thoroughly representative one. Every care will be taken of the exhibits, and immediately on the close of the exhibition they will be returned to their owners.

**BOROUGH POLYTECHNIC PHOTOGRAPHIC SOCIETY.**—Mr. A. G. Buckham is now the hon. secretary of this society.

**THEFT OF PLATINUM FROM THE FRANCO-BRITISH EXHIBITION.**—After the public had left the Machinery Hall of the British section on Tuesday two ingots of platinum, technically known as "wire ingots," were stolen from the case of exhibits of Messrs. Johnson Matthey, and Co., of Hatton Garden. The following is a description of the property: Length, 20in. to 24in.; square section measurement about  $\frac{1}{16}$ in.; weight, about 100oz. troy each; value, £500 each, or £1,000 in all; exhibits insured by the owners. Immediately on the discovery was made the firm was notified. An examination proved



that, serious as the loss was, the owners had reasons for congratulation in the fact that a large ingot of platinum—weighing about 100oz. troy, and valued at £3,500—had not been taken. The firm supply practically the whole of the high-class dentists with platinum. The wire made from the ingots is used for the fastening of the more expensive false teeth to the plate, platinum being best able to resist the action of acids. The stolen metal, when once its outline is destroyed, will find a ready market. Indeed, but for the fact that they buy only from people of whom they have knowledge, it might have resold to Messrs. Johnson, Matthey, and Co. It will be, therefore, a difficult matter for the police to secure the criminals or the missing metal.

THE STORES COMMITTEE OF THE LONDON COUNTY COUNCIL has accepted the tender of Messrs. W. C. Hughes and Co., Brewster House, Mortimer Road, Kingsland, N., for the provision of lantern operators and accessories for the year. The estimated cost of the contract is £47 and a schedule of prices.

PHOTOGRAPHIC CONVENTION OF THE UNITED KINGDOM.—At the annual meeting held on the 15th inst. the following programme was arranged for the twenty-fourth annual meeting, to be held at Canterbury in July next: Monday, July 5, morning and afternoon—around Canterbury; evening—reunion, presidential address, and annual general meeting. Tuesday, July 6—driving tour through the villages of Bridge, Patricbourne, Bekesbourne, Littlebourne, Ickham, Wickham, Fordwich, and Sturry; evening—papers, etc. Wednesday, July 7, morning—visit to the cathedral; afternoon—a garden party; evening—annual dinner and smoking concert. Thursday, July 8—excursion to Rochester; evening—papers, etc. Friday, July 9—excursion to Rye and Winchelsea; evening—papers, etc. Saturday, July 10—excursion to Maidstone. The headquarters of the convention during the week will be St. George's Hall.

ROVERS AND FREEBOOTERS is the way President Bradley, of the New York Photographers' Society, describes those photographers who go about the country picking up what work they can, and by means of cut prices taking business away from the man who settles down in a town and has to meet running expenses and taxes.

A "CHILD'S STUDY BOOK."—W. S. Ellis writes to an American contemporary: "This is simply an idea of mine, by which I utilise the balance of the proofs which I make for a customer; i.e., if a patron orders a dozen photographs from one negative of a child \$16 a dozen, 5 x 7, we will make a book of the balance of the proofs for them in platinum for \$10. Where there are eight or a attractive poses the proposition is very tempting, and as you see it gives us the opportunity of making prints from all negatives."

## Correspondence.

We do not undertake responsibility for the opinions expressed by our correspondents.

Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

MR. PONTING'S PHOTOGRAPHS AT THE R.P.S. EXHIBITION.

To the Editors.

Gentlemen,—As there seems to have been a disposition to regard the exhibit of Messrs. Raines and Co. at the New Gallery as a claim of a one-man pictorial show on my part I desire to disclaim any such intention, and should be glad if you would give me the opportunity of stating in your pages that I had nothing to do with either selection of the prints or the manner in which they are presented. Apart from knowing that Messrs. Raines desired to use some of my photographs, and had my consent to it, owing to absence from London I did not know what was being done, and was as much

surprised when I saw that their entire exhibit was from my negatives as to find that many of the subjects presented were from negatives made merely for illustrating my books and magazine articles, and, in my opinion, possessing little pictorial merit.

I should be glad to be clearly understood as to the object of my photographs. During my travels abroad during the last eight years I have been commissioned by certain American publishing companies to illustrate and write of the countries I visited. My work has thus been descriptive only, and under my agreement I had the privilege of doing but a limited amount of work for myself. For this work I do not claim any more than that it shows true phases of the Orient, and it has been my endeavour to introduce into it something of the local atmosphere and feeling.

At an exhibition of photographs which I was invited to give by the members of the Nobles' Club, Tokyo, the commendation that was there bestowed on my efforts to show something of the beauty and charm of Japan meant much more to me than the opinions of critics who have never seen the land. The approval of the foremost people in Japan was all I could ask for, but it took a practical form, and Baron Sonoda presented nearly 300 copies of my book, just then published, to the officers of the British Fleet who came to his garden party. These tributes, from a people among whom I have travelled for nearly three years, whose land I dearly love, and have visited no less than seven times, and have probably illustrated more than any other foreigner, I place a high value on indeed.

Many of my photographs have a deeper meaning than the untravelled will perceive. Few people, unless they have lived in Japan and closely studied the people, would understand my study of a lotus garden. Who that has not sounded something of the soul of these people could know anything of the sorrows that often wrings the heart of the Japanese as he visits the garden where grows the flower that sinks into itself at evening hour. To the Japanese the lotus is the emblem of all that is best in womanhood; it is also the emblem of that grim reaper whose path is wet with tears. Early in the morning, long before the sun has risen, you may see people astir in the Garden of the Lotus. Some are flower worshippers; others, as their faces show, are nursing sorrow in their hearts. They have come to see the beautiful flowers open as the sun rises in the sky. The peace and restfulness of such places, where herons and cranes wander undisturbed, and the subdued demeanour in which people visit them, I have tried to convey. The attitudes of the girls are true characteristic Japanese attitudes, and that of the little maid stooping to watch the great bloom open its lovely petals to the rising sun, I shall never improve on, though I hope some day to make another study of this subject.

I was told that this picture was considered by the critics as too spotty. Thus is the outcome of years of study of a foreign people, and many days of work in finding and bringing together the various parts of the subject, scoffed at by those who do not understand it. The picture that to the Japanese had meant so much, meant nothing to the Englishman at all.

Also, I would say that the two men engaged in carving ivory are the most famous artists in the world in their line. And the old potter is no mere wayside thumper of wet clay such as old Omar saw, but one in whose hands the "shapeless, lifeless clay" rises up as few can make it rise, even in this land of potters.

Likewise, too, the study of Mr. Namikawa feeding his carp is a glimpse into the home life of a man who has brought the art of cloisonné making to the highest point of perfection it has ever reached in any land. All the cloisonné vases presented by the Emperor to foreign potentates are made by Mr. Namikawa. So also most of my studies have a meaning, and on them hangs a tale.

I would like, gentlemen, to express my thanks to my unknown champion in your issue of September 25, "Anti-Progress." My heart warms towards him. His appreciation of the difficulty of showing Oriental sunlight and atmosphere shows how well he understands the subject. In my case the difficulty is not confined to getting out a single exhibition print, which may have demanded many days of work to make it a success, and the discarding of dozens of unsuccessful efforts, but in so making my negatives that they may be printed from by the gross, and that each carbon print shall be identical in merit with all others. The samples exhibited by Messrs. Raines are no better than any of a hundred prints in my portfolio made by them.—Yours very truly,

H. G. PONTING.

## Answers to Correspondents.

- \**All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C."* Inattention to this ensures delay.
- \**Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.*
- \**Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., 24, Wellington Street, Strand, London, W.C.*
- \**For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.*

### PHOTOGRAPHS REGISTERED:—

- T. C. Mortimore, Fore Street, Sidmouth, Devon. *Photograph of Mr. T. C. Mortimore, the Sidmouth Town Crier.*
- D. H. Veitch, 3, Dixon Terrace, Darlington, Durham. *Photograph of Bulldog, "Dolly."*
- W. K. Lacimer, 133, High Street, Kirkcaldy, N.B. *Photograph of Memorial Tablet to James Black, Leslie, N.B.*
- E. East, 71, Chester Road, Watford. *Photograph entitled: "Washing Day."*
- F. Spivey, Landseer Studio, High Bridge, Howden, East Yorks. *Photograph of the Chapter House and Tower, Howden Church.*
- W. H. Cole, John Street, Porthcawl, Glamorgan. *Photograph of Large Sea over Breakwater at Porthcawl.*

**LICENCE.**—I am making photographs and dry mounting them on art mounts. I supply these to the shops wholesale, and have no shop myself. Should I require a licence from the local authorities to carry on this work, and also is it usual to obtain licence for doing outdoor photographic postcards in my garden? I do no canvassing.  
—J. T.

Certainly not. You require a licence only when you actually hawk goods or come within the scope of the Pedlars Act.

**STRIPPING CINEMATOGRAPH FILM.**—Would you kindly let me know if it is possible to get cinematograph film (exposed and developed) away from its support without injuring the support?—J. WALLIS.

We can only advise you the process of using formaline and caustic soda, followed by an acid, as given in the "Almanac," page 808.

H. W. GAULD.—1. There is not a great difference between the most rapid of the leading makers. All, we should say, are a little ahead of those you name as regards speed. 2. Fritzsche A. G., 90, Ritterstrasse, Leipsic, and Oeser and Co., 19/20, Bahnstrasse, Schöneberg, Berlin.

H. B. MILES.—1. Ilford, Lumière, and Wratten plates are all used for the purpose. 2. The usual method is adopted. 3. Apply to Dawbarn and Ward, 6, Farringdon Avenue, London, E.C. The price is 6s. 4. Marion and Co., 22/23, Soho Square, London, W., or W. Tylar, Ltd., High Street, Aston, Birmingham. They are not likely to be smaller than 10 x 8, more probably 12 x 10 or 15 x 12.

**ARC LIGHTING.**—1. What would be the most suitable electric lamp for use in a studio of the following dimensions:—Length 24 feet, width 11 feet 6 inches, height to eaves 8 feet, ridge roof 12 feet from floor at highest point, which is in centre of studio? 2. How high above the sitter's head, say of a full-length standing, would it be necessary to place the light in order to get a well-lit picture? I may add the current here is alternating and voltage 105.—DARKSLIDE.

1. We should recommend one of the smaller sizes of enclosed arc lamps. 2. So that the light reaches the head at an angle of 45 deg. This would mean 8 to 10 feet from the floor with a sitting figure. 3. The lamp would be supplied for your current and voltage. Very much depends on the way the lamp is fitted in your studio and the method of distributing the light.

**AN AGENCY QUESTION.**—My agents (Messrs. — and Co.) engaged through an advertisement in your columns an assistant operator,

who could finish in black and white and retouch. They engaged a Mr. —, who in due course arrived in India. After being with me three days he told me that my agents said his salary would start from the day he signed the three years' agreement. I replied that if they had said so (although I scarcely thought it fair, as I had to pay his passage and expenses up to the time he arrived here), I should certainly give him the amount. I had not received the agreement or any advice as to what he had been paid at home, so I gave him part of the amount in advance and promised, on receiving advice and the agreement from my agents, I would act up to the terms and abide by what my agents had promised him. He worked for me a fortnight and then disappeared. 1. Now, can I claim the passage-money and all expenses I have been put to? I would be obliged if, in your "Answers to Correspondents" column, you would mention the facts. Of course, I see my agents ought to have got at least a good reference before sending the man out. 2. Can I hold my agents responsible for the amount lost by not getting a satisfactory reference for a man they sent out to me?—F. B. STEWART.

1. We should say that you could, unless the man will serve the three years according to the agreement. 2. This is doubtful, as no doubt your agents had what purported to be satisfactory references when they engaged the man. If you can prove they were negligent in the matter, which may be difficult, you might possibly recover.

**DEVELOPMENT.**—In a recent issue I read some notes on "A Reliable Method of Development," by G. R. Henderson. I have tried the method on two occasions with several negatives and the results have been perfectly satisfactory as regards development, but I think every negative showed a tendency to frill—a trouble which I rarely experience with other developers—and in some cases the frilling was exceedingly bad. I know very little about chemistry, but am very careful about chemicals, weigh the quantities carefully, and I am very particular about other matters of detail, and therefore I write to ask if you can explain the cause of the frilling. I may mention that I used alum potass. crystals (which I had in stock) after inquiring of a chemist and being informed by him that that kind of alum would be correct. I cannot help thinking that something must have been too strong, as although in one or two cases I left the negative in the clearing bath 15 or 20 seconds and in the intensifying solution about a couple of minutes, in other cases I did not leave it in so long.—PYRO-AMMONIA.

The author of the article writes as follows:—I have gone over the formula given and find it correct in every way. I have also just finished developing twenty half-plates by this method, and none of them shows the slightest sign of frilling ("Royal Standard" and Mawson plates). The citric acid may be reduced to 3oz. instead of 1oz.; but I fear the querist is not using a plate which will take kindly to pyro-ammonia. I never have any trouble with frilling, excepting, perhaps, in very hot weather. I could, however, mention two or three makes of plates which would frill every time ammonia was used in the developer, but which would take pyro-soda kindly.

**SEPIA TONES ON C.C. PAPER.**—I should be much obliged if you can give me method for obtaining sepia tones on Aristo C.C. I am well up in gold-platinum baths, but fail to get a good sepia.—H. WEST.

Wash prints in three changes of warm water and place in:—Ammonia 1 drachm, warm water 20 oz., until they become lemon yellow. They are then again washed in three changes of water, and toned for about one minute in a gold-borax bath containing gold chloride 2 grs., borax 90 grs., water 20 oz.

**ENQUIRER.**—We should recommend either No. 1 or No. 3, and to distribute the light partly by reflection and partly by diffusion. If you have a large studio and plenty of height use the larger size and remember that for group work you must use more front light in order to get both sides of the group fairly equally lighted. The usual difficulty is to get the lamps high enough in many small studios.

**LENS QUERY.**—Could you advise me what make of lens would be most suitable for taking full lengths (cabinets and postcards) in gaslight. The lens I am now using does not seem right, as when the face is in focus the body is quite in a mist, and does not show



the dress except as a dark mist. Would this be a bust lens only? I bought the lot from — new a short time ago.—K. E.

Any good cabinet lens of 11 or 12 inches focus will take full-length cabinet portraits in good focus from head to feet. An ordinary half-plate portrait lens usually has too round a field to do this satisfactorily. You say you are using gaslight as an illuminant, and we rather suspect that your trouble proceeds more from unequal lighting of the figure than from the lens.

**EMBOSSING PRESS.**—Can you tell me through the medium of your valuable columns where I could purchase a press for embossing name and trade on postcards, etc., to show in relief?—P. H. H.

Fallowfield, 146, Charing Cross Road, London, W. See also "New Apparatus" this week.

**COULD** you tell me if there is any chance of work in Australia for artists (B. W. or oils), either in a situation or start in own business?—E. W.

From what we can gather, conditions in Australia are very similar to those here.

**TRANSFER COLLODION.**—Can you give me a formula for transfer collodion, and where suitable gun-cotton is obtained?—TRICOLOUR.

Transfer collodion and enamel collodion are much the same thing. A good formula for either is: Soluble pyroxyline, 2 drachms; sulphuric ether, 10 oz.; alcohol, 10 oz.; glycerine,  $\frac{1}{2}$  drachm. Methylated ether will do, so will methylated alcohol, provided the strength of the latter is not less than s.g. .825.

**MISCELLANEOUS.**—1. Is there any serious objection to the one-exposure tricolour camera, with two plate glass reflectors, mentioned in the "B.J." a few weeks ago? 2. In this week's issue, the right-hand photo-micrograph of whalebone is reversed. Is this done in the printing, or was the section taken through the slide in one case?—TRICOLOUR.

1. The camera is perfectly satisfactory when properly adjusted. 2. We believe not; the originals were enlargements from the negatives and it is possible that one was made reversed inadvertently.

**RUBBER STAMP INK.**—I shall be much obliged if you would kindly give me in your "Answers to Correspondents" column a recipe or formula for making ink suitable for using with an indiarubber stamp, sepia in colour, to match carbons or sepia platins.—P. S. H.

Boiling distilled water, 10 oz.; glycerine, about  $\frac{1}{4}$  oz.; treacle, about  $\frac{1}{4}$  oz.; aniline dye, 900 grs. A dye or mixture of dyes of suitable colour must be used, but we fear you will have some difficulty in matching the tissues or prints. Better apply to Messrs. Mawson and Swan, Mosley Street, Newcastle-on-Tyne, or the Vanguard Co., Maidenhead, for suitable dyes.

**BROMIDE PRINTS.**—1. Will you kindly tell me how to prevent the black markings on glossy bromide postcards? Or if it can be prevented the easiest method to remove them. 2. I cannot get the cards to tone in the hypo-alum bath. They are the commercial postcards. Can you explain how this is?—STEP.

1. Methylated spirit, applied with cotton-wool, will generally remove the marks. You had better change to a paper less liable to give them. 2. Some few papers will tone readily in hypo-alum. We advise you to select a brand for which sulphide toning is recommended.

**DOS SANTOS LEITAO (LISBON).**—1. Alkaline solutions (developers, etc.) should not be used in zinc vessels. Porcelain or nickelled metal should be used. 2. The best mixture is a strong shellac solution, several coats thinly applied; or one of asphaltum, 4 oz.; pure rubber, 30 grs.; mineral-naphtha, 10 oz.

**GLOSSY BROMIDES.**—I should be glad if you could answer these questions for me in your paper. I often require to print 1-1 negatives of machinery, etc., on glossy paper for reproduction in magazines or catalogues. I have no proper water supply in my dark room, and hence the washing between developer (amidol) and fixing is rather scamped, which results in occasional yellow stains, as I am generally pressed for time with a dozen or eighteen prints to do at a time. 1. Is there any clearing bath that I could use between development and fixing to take the place of washing, which would act (a) as a quick stop to the developer; (b) to remove or diminish the surface markings, which I find a great trouble at present; (c) to obviate all risk of

yellow stains. It seems to me that something containing soda sulphite, an acid, and potass iodide might be useful, but my experiments have not met with success. 2. What do you recommend as the best formula to use with amidol on Nikko paper? I want blue-black tones, strong contrasts, quick development, capable of being used for several prints in succession. I use at present, but am not quite satisfied with soda sulphite,  $\frac{1}{4}$  oz.; amidol, 20 grs.; water, 4 oz.; no bromide.—AMIDOL.

1. We should recommend you to use an acid fixing bath and plenty of it, keeping the print fully immersed. This should prove better than an intermediate bath. 2. We should advise you to try the metol-hydroquinone developer of the makers for greater vigour, blue-black colour, and greater speed.

**VARIOUS.**—1. I have a Beck whole-plate "Isostigmat" lens,  $9\frac{1}{2}$  in. focus. The back component gives an extension of  $17\frac{3}{8}$  in., and the front  $11\frac{1}{2}$  in. Might I ask if you will be so good as to give me the F. values of each? 2. Will you also kindly inform me what the Watkins P number would be for a plate 100 H. and D. and one 150 H. and D., and if the greater speeds would be proportional and *vice versa*.—OPTICS.

1. The apertures are proportional (near enough) to the focal lengths. You do not say what the working aperture of the complete lens is, but when using the back component you must multiply the F number by 2 ( $\frac{17\frac{3}{8}}{9\frac{1}{2}}$ ) and when using the front

lens by  $1\frac{1}{4}$  ( $\frac{11\frac{1}{2}}{9\frac{1}{2}}$ ) approximately. 2. About 150 and 230 Watkins respectively. In the case of these two speeds, a fairly correct rule is that the Watkins number is  $1\frac{1}{2}$  times the H. and D. number.

**F. BROMHEAD.**—As the plates have not yet been placed on the market your only course is to apply to the Thames Colour Plate Co., 254A, High Holborn, London, W.C.

**PREPARING PORCELAIN.**—I shall be glad to know through your columns this week how to prepare a porcelain to be painted in oil (bromide basis). I fear that without some sort of preparation the oil colour will sink in and look dull.—J. FLATMAN.

The picture will require no preparation at all. Oil colour will not sink into a gelatino-bromide print on glass as it might do on paper.

**LENS FOR ENLARGING.**—Could you tell me of a cheap form of lens of short focus that would do for general copying with a camera of 18 in. or 20 in. extension? The lens I have is a 9" x 7 R.R., and will only copy to the same size as original. I once used a very small lens, which at about 10 inches extension of the camera would enlarge from a midget to a cabinet, but I forget what lens it was. Would a  $\frac{1}{2}$  plate wide angle do, and would it cover if stopped down, say 1-1 plate or 12 x 10?—CORVIST.

If you only want to enlarge midgets, a lens of three or three and a half inches focus will do. With one of three inches focus you will be able to enlarge to five diameters in your camera on any size plate it will take. Of course, you could lengthen the camera by fitting an extension cone, or tube, on the front. If you refer to page 953 of the Almanac you will see a table which shows the distance required for different degrees of enlargement, with different focus lenses.

**LENS QUERY.**—Will you please advise me as to most suitable lens at moderate cost for studio 25 ft. long (that is the total length). Lens is required for all-round cabinet work, full lengths, busts, etc. Just now I am using a 8 x  $6\frac{1}{4}$  "—, Petzval formula, back focus  $8\frac{1}{4}$  f/4. But it does not cover very well, even at f/8. Your advice will be esteemed.—LENS.

Any good cabinet lens (portrait) of from eleven to twelve inches focus will do what you require. As a lens of that focus requires a distance of about eighteen feet between sitter and camera you could employ it in your studio, without great inconvenience, even in taking full-length figures. For three-quarters and busts you could not have a better lens.

**MOUNTING, VIGNETTING.**—1. Would you give me the formulae for mounting bromide and "Japane" prints? I find that the edges come up when dry. I use the best starch of good thickness. There used to be trade mounters of photographs; they, I believe,

used French glue. Could you give me the quantities, and is it safe from fading? 2. How is the soft effect got in portraits with light draperies shaded off at the edges, but the shaded effect starting well into the picture, showing the draperies faintly through? Is it done in the camera or in front of the lens, and what material is used and at what distance from the lens? Not to be confused with the Russian vignette.—E. J. HASSOCK.

1. Starch paste is what is generally employed for the purpose. If it is used thick, and well rubbed round the edges of the prints, they will not come up when dry. Many of the French glues are acid, and for that reason are not suitable for mounting photographs. 2. It may be got by vignetting, placing the vignetting mask at a good distance from the frame. Most of the large dealers supply a vignetter that is fixed in front of the camera, which will shade off the figure at the lower portion in the negative.

**TRANSFERRING P.O.P.**—Please advise me how to transfer P.O.P. prints on glass and china.—S. M. T. (Newfoundland).

A method which has been advised is: "The print obtained, toned, and fixed in the usual way—care being taken to use no alum—is first soaked in cold water and then applied, face down, to the surface with which it is required to make contact. It is important that the surface should be clean and perfectly free from grease. Good contact is secured by squeezeing the print, which is then left to dry. After drying, hot water is run over the back of the print until the paper commences to peel off. A corner is then taken between the fingers, and the removal of the paper is effected carefully. The surface of the gelatine is sponged with a pad of cotton-wool dipped in hot water, and the transfer is allowed to dry in a place free from dust. The temperature of the water should be about 160deg. F." We should, however, recommend the carbon process in preference to the above.

**A POSTCARD TROUBLE.**—I should be glad of some advice, through your columns, on the following difficulty. I have toned some postcards with ferrocyanide and sodium sulphide. After this treatment the writing space will not take the ink properly; it absorbs it and spreads, although before treating it is quite satisfactory. It appears as if the alkali in the sulphide bath has broken down the sizing. Is it possible to treat the card so that this spreading of the ink will not take place? Perhaps coating with starch or gelatine would prove beneficial?—HYDROLYSE.

We have not heard of this trouble before. Possibly treatment with chrome alum or formalin before toning would preserve the sizing; if not, the only apparent remedy is to resize with starch or gelatine, as you suggest. This could be effected after toning, but we should apply a hardening bath to the image before resizing.

**IMPURE MOUNTS.**—Can you give me any idea as to whether the spots on the accompanying platino-matt prints are due to faulty manipulation, defective mounts or paper? These were toned only last Tuesday with several others, which are apparently all right. Only those mounted on similar mounts to these show signs of spottiness! What would be the cost of chemical analysis to discover the cause of the decomposition? A reply in this week's "B.J." will oblige.—S. H. GREENWAY.

From what you say it seems evident that the mounts are at fault. We should cut up a mount and boil it in distilled water, and then test the water for hypo by adding, first, a drop of starch solution and then a little iodine solution drop by drop. If the first drop of iodine turns the solution blue there is no hypo present, but if the first few drops have no such effect the mount contains hypo. The quantity of iodine solution required to produce the blue colour will give you an idea of the degree of impurity of the mounts. The test can be made by yourself quite easily.

**METHYLATED ALCOHOL.**—There is no other way of obtaining methylated spirit without the admixture of mineral spirit than by obtaining an excise licence to purchase it. You seem to understand that matter, and we can tell you that no methylator would let you have a gallon or two "on the quiet."

**X. X. X.**—You have no ground for action. Your late employer cannot be compelled by law to give a reference. When an employer gives a late employee a reference he does it as an act of grace, and

not because the law compels him to do so. Yours, however, seem a somewhat hard case.

**PUZZLED.**—The cause of the tint on the whites of the vignettes seems to be that they have to be exposed to too strong a light while the free silver was being washed out before toning, or while they were being toned. One of the prints shows a decided mark where another one shielded it from light for a time.

**W. CONNOLLY.**—(1) Bevelled edge glasses for mounting photographs in optical contact with the glass are supplied by all the large dealers, such as Marion's, Houghtons, Fallowfield, and the like. (2) We must have fuller particulars before we can answer this question. So far as we can judge, the material is not at fault.

**DISTILLED WATER.**—I often see it recommended to use distilled water in making up solutions, but it is difficult to get it about here. Where I am engaged in business there is a small steam engine constantly running and it would be an easy matter to fit a condenser to the exhaust pipe and so get a plentiful supply of what I suppose would be distilled water. Will you be good enough to say if this would do as well as that sold by the chemists?—STEAM.

What you would obtain would certainly be distilled water of a kind, but as the steam will have passed through the engine it will be largely charged with oily matter and thus the water will be far more impure than the general run of tap water.

**C. B.**—If the negative is varnished with a varnish that has shellac as its basis, as is most likely the case, the coating can be got off by soaking the plate in strong methylated spirit. If at the expiration of half an hour or so, it does not seem to be dissolving the solution may be assisted by gently rubbing the negative with a pledget of cotton wool. Should it then refuse to come off a little liquor ammonia must be added to the spirit, and after time the rubbing with the cotton wool should be repeated. After the varnish has all been got off, the plate should be rinsed two or three times with fresh spirit. You must keep in mind that all traces of the varnish must be got rid of before any attempt is made to intensify the negative, otherwise unequal intensification will result.

**SILVERING MIRROR.**—I have a reversing mirror that I bought, second hand, a few years ago, and I have recently tried to re-silver it according to the formula in the "Almanac," but, so far, it has been a failure. The silver seems to have deposited all right, but instead of being bright and polished, it has a yellowish brown colour. The deposited silver seems to be very firm on the glass, but of a bad colour. Can you kindly tell me where I have probably gone wrong?—T. (Liverpool.)

In silvering mirrors the temperature of the solutions, and that of the room in which the work is carried out, is a factor in the case. If the temperature is much below 65 deg. or 70 deg. Fahr. a satisfactory deposit is seldom obtained. It must be kept in mind that, however good the silver deposit may be, it will not be fit for use until it has been polished. This is done with a pledget of fine wash-leather and the finest jeweller's rouge. The mirror must be made thoroughly dry and warm before it is polished, otherwise the silver will be distributed. Have you tried polishing the silvered surfaces you have obtained? If not, we should advise you to do so and see the effect.

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## The British Journal of Photography

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## SUMMARY.

Dr. Kenneth Mees and Mr. S. H. Wratten, as the result of examining photo-sensitive silver acetylide, have found that no latent image is formed. As no sub-salt appears theoretically possible, the observation supplies support of a negative kind to the sub-salt theory of the latent image. (Pages 827 and 831.)

The ingenious suggestion of using two fixed-focus cameras placed front to front for copying same size has been made by Mr. A. Lockett in a contemporary. (P. 826.)

The making of a single panoramic print from a series of negatives is a task which may frequently be an advantage to the technical photographer. Some practical notes appear on page 827.

The opportunities for portrait work away from the studio are the subject of a recent exhortation by an American writer. (P. 830.)

The use of the swelled-gelatine process in making matrices from which casts may be prepared is deserving of further attention by those working for the professional photographer, as it enables various articles of ornament to be produced. (P. 828.)

A spirituous alkaline solution, caustic potash in methylated spirit, is the best means of removing varnish from a negative, but some further precautions are necessary in order to leave the negative in condition for further treatment. (P. 825.)

An incident which creates a disquieting sensation in regard to photographic trade with the Near East is reported to us by a Berlin correspondent. (P. 829.)

A lengthy patent deals with the construction of self-developing roll-film cartridges. (P. 834.)

A curious kind of compliment is paid one of Mr. Arbuthnot's pictures in "Photograms of the Year," just published. (P. 837.)

## EX CATHEDRA.

### Spurious Goerz Lenses.

One of the most barefaced frauds which we can recollect to have come under our observation has recently been perpetrated, and as it probably represents others it is well that we should caution our readers, though we cannot imagine that there are many who will be taken in by so palpable an imposition. The fact is that at a Glasgow auction sale room a lens professing, according to the engraving on the mount, to be by the firm of C. P. Goerz, was offered for sale and purchased for 17s. 6d. When we say that the lens was marked as 12 x 10 Pantar anastigmat, which would cost new about £14, it is hardly possible to extend much sympathy to a buyer who further ignored the fact that the fraudulent vendor, in selecting a lens to pass off as a Goerz, had not even taken the trouble to remove the original designation of "Primus Rapid Rectilinear," nor to alter the markings of the diaphragm scale which registers only to the aperture of  $f/8$  whilst the lens elsewhere bears the spurious marking  $f/6.3$ . It was but some months ago that a case of spurious Goerz lenses transpired in Glasgow, the guilty person in regard to which was, we have heard, sentenced to imprisonment on another charge. Whether the recent incident does or does not indicate the return of this inept malefactor to active life, there is evidently still reason to caution the ignorant as to the spurious objectives which may come their way.

### Removing Shellac Varnish from Negatives.

A correspondent last week wanted to know how to prepare a varnished negative for intensification. Unfortunately this is not a very easy matter—for various reasons. In the first place if we attempt to remove the varnish by soaking in spirit alone the removal must be quite complete before any water is applied to the film, otherwise shellac will be precipitated in the gelatine the moment the water touches the surface. A solution of shellac in alcohol is quickly precipitated by water, but if ammonia with a strong caustic alkali is present the precipitation does not take place. Shellac is soluble in ammonia solution as well as in alcohol, and though the solid lac dissolves slowly in either liquid alone, a mixture of the two is a powerful and rapid solvent. This fact, coupled with the one that water will not cause the lac to precipitate from the ammoniacal solution, renders it advisable to always use an alkaline spirit solvent. A very effective solvent is a solution made by dissolving one ounce of caustic potash in ten ounces of spirit. A plate may be soaked in this until the varnish has apparently all gone. After this a second bath of the same solvent can be applied for a few minutes and then the plate can safely be washed under the tap. Cotton wool should be used to assist in the process of removing the varnish, and it must not be forgotten that

all traces of alkali must be completely washed out before any attempt is made to intensify. If mercurial intensification is to be employed perhaps a mixture of alcohol and ammonia is safest, as the ammonia is more readily got rid of. The solvent effect of ammonia on shellac is sometimes made use of to produce a cold drying varnish. An alcoholic solution of shellac dried without heat leaves a dull surface, because the water that is always present in the alcohol evaporates so slowly that at the last there is an excess that precipitates the lac. If a little ammonia is added to the alcoholic solution this keeps the lac in solution until the last moment, and so a bright, clear varnish is produced. In the ordinary way we dry by heat, and this fuses the lac and gives a very hard film that it is often difficult to remove. In fact, we have known cases in which the complete removal of the varnish seemed to be almost impossible. After a prolonged washing and soaking it is generally possible to tell by inspection whether intensification can safely be attempted, but mishaps are not uncommon excepting when the worker is exceptionally careful to run no risks.

\* \* \*

#### An Exhibition in Berlin.

Within recent years there has been an ever-increasing number of exhibitions for photographic materials held throughout Germany. One constantly hears manufacturers complain that the German photographic industry is, as they express it, "exhibition tired." In spite of that, these exhibitions flourish, and the manufacturers must find some benefits from them since they patronise them so well. Certainly English manufacturers who wish to introduce their goods on the Continent have no ground for complaint, as these exhibitions afford them every opportunity for doing so. From December 19, 1908, until January 3, 1909, an exhibition is to be held in the Zoological Garden Exhibition Buildings, Berlin, for scientific appliances. It is to include a photographic section, special attention being devoted to cinematograph apparatus and the various branches relating to it. There is also to be a department devoted to appliances used in synchronical photography.

\* \* \*

#### Enlarging with Two Cameras.

In the "Photographic Monthly" Mr. A. Lockett points out that enlargements can very easily be made with the aid of two fixed-focus hand-cameras of different sizes. Suppose, for example, we have a Brownie, or similar small camera, and also a quarter-plate magazine camera. If we put the negative in the small camera—of course leaving the back open so that light can be transmitted through the negative—and then place the two cameras face to face with their

lenses in line, an enlarged image will be formed on ground glass of the larger camera, and we can then produce either a quarter-plate transparency or a quarter-plate size bromide enlargement with the greatest ease. Of course, if perfect focus is to be secured, each camera must be adjusted exactly for infinity, and it is advisable to make sure of this before attempting to enlarge. Light then emerges from the lens of the front camera as parallel beams, which are received by the second lens and caused to converge to its principal focal plane. Any two cameras may be used in this way; the box fixed form is not essential, and it is, indeed, somewhat of a convenience if one camera is of the focussing variety. One great advantage of the method is the ease with which full-size copies can be produced with two cameras of equal size. Practically the two lenses act as one lens of extremely short focus; thus, two five-inch lenses working together as an objective of about 2½ inches focal length, which is the reason why full-size copies can be produced in an apparatus with a total length of not much over 10 inches.

\* \* \*

#### Steel Mirrors.

In an article on "A One-Exposure Three-Colour Camera" in "The Photographic Journal," Sir William Abney advocates the use of steel mirrors on the grounds that the metal is easy to work and rigid and not difficult to polish. A thin coating of collodion varnish protects the surface from damp. Such a mirror reflects only about 60 per cent. of the incident light, and this reduction might be serious in some cases, but all the same steel mirrors might be very serviceable for many purposes in which a surface-reflecting mirror is essential. The ideal mirror is, of course, a totally reflecting prism, but this is both expensive and heavy. On a score of permanence the metal mirror of Kahlbaum is excellent in every way as it is also optically, but is, of course, more costly than a steel mirror. As a rule when surface-reflecting mirrors are required we have to fall back on surface silvered glass which too often is very unsatisfactory. Many mirrors of this kind are very transparent, and transmit more light than they reflect. A really good specimen is not easily obtained, and when it is available it is very readily damaged.

\* \* \*

#### Silver Acetylide.

The short paper which we reprint on another page, by Dr. Mees and Mr. S. W. W. in "The Photographic Journal," describes a very interesting and suggestive experiment with a silver acetylide emulsion, from which it appears that while light produces a visible image yet it does not form a latent image.

## THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC FOR 1909.

Edited by GEORGE E. BROWN, F.I.C.

The forty-eighth annual issue of THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC will be published on December 1. This year's ALMANAC reached a total of over 1,000 pages, and the entire edition of 25,000 copies was sold out immediately. Of no other photographic book ever issued can two such unique facts be recorded. The edition for 1909 will also consist of 25,000 copies.

The editorial article will deal very completely with the important subject of

#### REFLEX CAMERAS,

and the systematic review of the work of the year under the title "Epitome of Progress" will be a strong feature of the volume.

The lines followed in the previous editions of the

ALMANAC will be maintained in general, but in a number of particulars the arrangement of the volume for 1909 will be modified to make it more than ever the book of universal photographic reference.

The ALMANAC for 1909 will appeal to photographers the world over as a daily reference guide in practical work. The standard matter and formulæ will be revised and added to where necessary, and, wherever practicable, new features of an informative nature will be added.

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insusceptible to development. Theoretically it appears impossible that a subsalt of silver acetylide can exist, therefore we have here a case in which the absence of subsalt coincides with the impossibility of forming a latent image, a fact which may appear to afford a certain amount of negative support to the subsalt theory of the latent image. Then again the coincidence of a printed out blackened image with the absence of a latent image may seem to suggest that such images are generally of different natures. Possibly they are, but, of course, the experiments really prove nothing with regard to the action of light on silver bromide emulsions, for the very slightly known acetylide compound may have essentially different characteristics from a haloid salt. Though the writers almost seem inclined to apologise for publishing an experiment that has led only to negative conclusions, it appears to us to be one that was well worth carrying out, and that is also well worth remembering.

### Current Art.

The autumn shows of paintings give quite different notions of what work is being done amongst picture-painters. At the Institute one is struck by a sudden revival of the prouder days of old; at the Royal Society of British Artists one sees a retrogression towards the low level of the near past. It is a pity that the members do not more faithfully follow their president's lead, for Alfred East, A.R.A., dignifies the gallery with some majestic work. His "Wings of the Morning" is a notable landscape, with fine ideas and fine observation; it depicts a corn-field in the first grey light of dawn, before the colour has come into the sky. Overhead large, heavy clouds are scudding before the breeze, and they suggest the flight of great wings. D. Murray Smith shows several of his mannered but entirely pleasing landscapes. A. C. Gould's "Dunster Castle" and a fine portrait by Laszlo are exceptional works among much that is very ordinary, and similarly we must refer to G. G. Symonds' "Charlemont River in Winter," and A. Talmage's earnest and beautiful "Moonlit River"; F. Swinstead's two pastel subjects are as good, but not better than his previous works in this medium, which he uses with such facility. As a whole, however, the show is disappointing. In the Institute galleries one's spirits mount. The lighter, more cheerful rooms, and the importance of the works, and the goodly sprinkling of high reputations represented give us great hope of this somewhat unfortunate society. The finest things are J. Olsson's dream of opal colour, "The Afternoon Sun," an exquisite sea-piece; Niels M. Lund's "Glen Dochart," an amazingly strong painting of a burn roaring over the rocks; H. Van der Weyden's "Moonrise" and "Ram-parts," and Robt. Little's "Carrara Landscape." But there are a score of good things worthy of mention, such as G. Wetherbee's "Young Theseus," a Talmage, a Shannon, a Loudan, and others, for which we have no space. But we must congratulate the Institute upon having made a serious and successful effort to retrieve lost ground in the matter of reputation, and we can recommend the exhibition as an unusually good shillingsworth in the matter of pictures.

**Pentathionic Acid.** A short paper on this compound, by M. J. J. P. Valetton, in the "Recueil des Travaux Chimiques" (1908, p. 149), is of interest in view of the goldless toning bath of MM. Lumière, by whom its properties have been ascribed to the presence of pentathionic acid. M. Valetton has examined the behaviour of the solution of the acid towards a number of agents, such as caustic alkalies, ammonia, ammoniacal solution of silver nitrate, and ammonia cyanide of mercury, and has found that in every instance precisely similar results were

obtained when employing a colloidal solution of sulphur in place of pentathionic acid. He prepared his colloidal solution of sulphur by the modified use of the well-known "Wackenroder's Liquid," prepared by the customary method of leading a stream of hydrogen sulphide into a solution of sulphurous acid. He, however, precipitated the colloidal sulphur with common salt, dissolved it afresh in pure water, and thus obtained, after three or four precipitations, a solution which was quite natural to litmus. M. Valetton therefore casts doubt on the existence of pentathionic acid in solution, for the identification of which in an aqueous medium there is, he shows, at present no reagent.

### Photography in Bavaria.

The British consular report on the trade of Bavaria for 1907 and part of 1908, which has just been issued by the Foreign Office, states that the Munich Photographic School, founded in 1900, is now frequented by about 240 pupils instructed by fourteen teachers, and the premises will have to be enlarged. The art of photography is taught at present in twenty-two German universities and polytechnic high schools. With regard to photographic postcards the United Kingdom is considered not to be so good a customer as formerly for these articles on account of the reduced British prices. A Munich firm sought permission to import British postcards, to treat them for photographic purposes, and then to re-export them to the United Kingdom free of all duty. The Bavarian customs held that this might be conceded as no damage was thereby caused to other home industries. In consequence of heavy Russian tariffs, financial obstacles in Italy, and better labour conditions in Austria-Hungary, the Bavarian exports of photographic printing blocks to these countries have ceased.

### WIDE-ANGLE VIEWS WITH ORDINARY APPARATUS.

THE professional photographer who is very frequently called upon to carry out work which really requires apparatus costing more than the price of his labour justifies, is sometimes required to produce a photograph of large size of, say, a wharf or a factory, that must include the whole of the subject. This may sometimes mean an angle of 100 deg. or more, yet the distance the photographer can get back may not permit of that being done with any lens in his possession. Still, for business purposes, particularly in the case of large factories or the like, when the picture is to be used for advertising purposes, such a wide angle becomes imperative. Under these circumstances the question is whether the order should be declined or not. If the picture is taken in sections and joined together afterwards it is often objected to by the customer as not being satisfactory, but that is usually because the work was not so skilfully done as it might be—the pictures do not match in size, colour, or in perspective. However, by the system presently to be described, a little care will ensure this difficulty being overcome.

Let us suppose that the picture, to include all that is wanted, has to be, say, eleven inches by twenty-eight or thirty inches, and that the only camera available is an ordinary 12 x 10. In such a case we shall require quite four different negatives in order to get the most satisfactory result. The best lens to employ for the work is undoubtedly an anastigmat, or next to that a good R.R. that will cover the plate well to the corners with even illumination. For this a moderately small stop may be found necessary, even with a 12 x 10 lens. The camera should be placed opposite about the centre of the subject, and the tripod be very firmly planted, for it must be kept

in mind that on no account must it be moved from its position until the whole of the negatives have been secured. The camera must be perfectly levelled. That is imperative, otherwise the different negatives will not match properly. To ensure accurate levelling a spirit level must be employed. The first negative, which should be the centre one, is then taken and the amount of subject it includes is marked on the ground glass with strips of gum paper. The camera is then rotated either right or left by loosening the camera screw for the next negative. In arranging for this the camera must be rotated only so far that the second negative includes about an inch or an inch and a-half of the subject included in the first. This second negative is taken in the same way, also including some of the previous one, and so on with the others, as many as may be necessary to complete the picture. The object of having a certain overlapping of the subject in the different negatives is to obtain margins in the finished pictures that are well defined and equally illuminated, otherwise the joins, however neatly made, will be very palpable. For this reason it is often desirable to take, say, four negatives when perhaps three could possibly be made to include all that is required in the picture, more especially if a R.R. be used for the work, for even with the best of them there is a certain falling off in the illumination at the corners of the negative, but this will be cut away in the mounting. The little additional trouble, when one is about it, is well repaid by taking an extra negative or two when excellence in the result is the chief consideration.

In the development of the negatives care must be taken to make them all of equal density, otherwise it will be next to impossible to obtain uniformity in the prints. It goes without saying that unless the negatives are even the finished picture will not be satisfactory, either for framing or for copying for reproduction. In printing the precaution should be taken to cut the different pieces of the paper in the same direction from the sheets, because paper expands when it is wetted, and more so in one direction than it does in the other. It is scarcely necessary to say that all the prints should be printed to the same depth and toned to exactly the same colour.

Satisfactory prints having been obtained it now remains to trim and mount them, and that requires some care or the result will not be satisfactory. The best way of doing this part of the work is to take a sheet of glass somewhat larger than the finished picture will be. The centre section is then placed (untrimmed) in position on the glass and secured there with a few touches of thick india-rubber solution which will hold it securely. The next section—either right or left—is then adjusted in its position and secured in the same way. The overlapping portions in each section enable this to be done with the greatest accuracy. When all are fixed to the glass the prints are trimmed top and bottom by placing a straight edge along them, and, with a knife, cutting through the whole length at one time. The ends are then trimmed off in the same way. What now remains to be done is to trim the junctions so that they match accurately. This is an easy matter, though it requires some little nicety. It is done as follows: With a sharp penknife cut through to the glass both the overlapping portions of the various sections with one clean cut. In making the cut through the subject part of the picture it should not be in a straight line, but taken round about some inconspicuous parts, say the edges of shadows, and the overlapping portions of the prints give ample scope for this being done. In this way the joins will be practically hidden as the junctures will accurately fit one in the other. The finally trimmed prints are then taken off the glass and any rubber that may be adhering to the backs lightly rubbed off with the ball of the finger or a piece of india-rubber.

All that now remains to be done is to attach the print to the mount, and this is best done with thick starch paste. They should be mounted dry, as wetting them would cause expansion of the paper, and, moreover, the latter might become stretched in getting them into position. The dry-mounting (shellac) process is, of course, specially fitted for this part of the work. As an aid in securing accuracy on the mount it is a good plan to run a line along the latter to serve as a guide to the base line of the picture. If the above details be followed a satisfactory picture, including a very wide angle, can be produced that will be in good panoramic perspective, and, in the different prints with which it is built up are all of the same depth and tone, will appear as if it were made from a single negative.

### PHOTOGRAPHS IN RELIEF.

THERE is an application of photography that seems to be but little known or understood by photographers, though in some instances it might be turned to profitable account by professionals, and also be of interest to some amateurs. We allude to the production of gelatine reliefs from which casts can be taken in different materials—plaster of Paris and others, for example. In the Woodburytype process the finished print is merely a cast in pigmented gelatine of a gelatine relief from which a metal mould has been obtained. Some correspondents have at times asked how these are made, while others have detailed the difficulty they have met with in getting sufficient relief. It may be explained that a carbon print is in reality a relief in pigmented gelatine, and that is easily seen if a print be examined while it is still wet after development, and the relief will be more marked in it is made from a strong and vigorous negative than if it were made from a thin and feeble one. In the case of the carbon print, and also in that of the Woodbury gelatine relief, it is the portions unaltered by light which are dissolved away to produce the relief.

There is, however, another way of obtaining a gelatine relief in which the gelatine is not dissolved, yet a very high degree of relief is obtainable, even higher than in the method just referred to. This is by what is known as the swelled gelatine process, which is used in some methods of producing typographic blocks, though not so much now, perhaps, as it was some few years ago, since it has very generally been superseded by the present day process block. Everyone is aware that when gelatine is soaked in cold water it swells considerably in size as it absorbs the water. It is, perhaps, not equally well known that if the gelatine contains a bichromate salt and has been exposed to light, its character in this respect is entirely altered; it no longer swells up, however long it is soaked—that is if the exposure has been somewhat prolonged. In view of this it will be obvious to most persons that if a bichromated film be exposed under a positive, and then soaked in cold water, it will swell in proportion, as it has been protected by the various portions of the negative. The highest lights will swell up to high relief, whilst the deepest shadows will be unaffected, and as a result we get a picture in more or less relief with perfect gradation. From such a relief cast can be made in plaster of Paris or other plaster material. Having obtained the plaster cast, other casts in turn can be made from it in such materials as wax, stearine, spermaceti, and the like, and by impregnating the plaster cast with wax or stearine, electrotypes may be made from it. In this way we can reproduce photographs in a great variety of materials. It may be as well to explain here that when a carbon print, or a Woodbury relief, is developed, it is the portions unacted upon by light



which are dissolved whilst the shadows are in relief, you are sure of what you process it is just the reverse; it is the lights that swell up in the cold water and form the relief, while the shadows appear in intaglio.

In selecting a gelatine for the present work, Nelson's No. 1 sheet will be about as suitable as any. A good proportion to use is one part to three and a-half or four of water. The gelatine is dissolved in the usual way by first soaking it in cold water and then dissolving by heat. A cleansed glass plate is then warmed and placed on a levelling stand, and the gelatine poured on in sufficient quantity to produce, when dry, a film about the thickness of an ordinary thin business card. It is then allowed to dry, which will take some time, according to the state of the atmosphere. Under some conditions it may take two or three days, but the precise time is of little moment. Of course, the bichromate can be added to the gelatine solution, but in that case the drying must be done much more quickly, otherwise the film will become insoluble and lose its property of absorbing water and swelling up. It is therefore preferable to dry the coating first and sensitise it afterwards. That is done by soaking the plate for three to four minutes in a four per cent. solution of bichromate of potash to which a few drops of liquor ammonia have been added. It will then be found to take less time to dry than if the bichromate were added at first to the gelatine solution. It need not be said that the drying must be done in a yellow light and as quickly as possible.

In some methods of working, the insensitive film is stripped from the glass and sensitised afterwards, or the thin sheets of gelatine, as sold by those who supply lithographic material, may be employed. But on the whole it is, perhaps, best to use the film while on the glass, as when detached it is prone to swell considerably in a lateral direction. The sensitised film being perfectly dry, it is now exposed under the negative for the necessary time, which, it is obvious, must depend upon the light. For our present purposes direct sunlight is preferable to diffused light, as sharper results are obtained. As a rough guide to the exposure, it may be said that it should be until the deepest shadows have become a decided brown colour, while the

high-lights remain of much the same tint as they before exposure. After exposure the plate is put into a tray of cold water, when the unaltered bichromate should freely dissolve out, which it will do if the plate has not been much over-exposed, or the film become insoluble in the drying. After soaking a while it will be seen that the image is swelling up to a relief which will go on increasing by longer soaking. Sometimes to get the highest possible relief several hours may be necessary—perhaps ten or twelve if the temperature is low. It may be as well to mention that some workers, on failing to obtain the expected relief, have surmised that the gelatine film was not thick enough; that, however, in eight cases out of ten is not the reason, for it has been due to lack of vigour in the negative. It is next to impossible to obtain high relief unless a very vigorous negative—one with a long range of tones beginning with clear glass for the shadows—be employed.

When full relief has been obtained, the water on the surface of the film is removed by gently dabbing it with a soft cloth or handkerchief. When it has been made as dry as possible in this way the surface is rubbed over, evenly, with a little olive oil on a pledget of cotton wool. The plate is then ready for taking a cast in plaster of Paris. The plaster for the purpose is that used by those who make plaster images, and not that sold at the oil-shops, and it should be freshly burnt. Some of it is mixed with water to about the consistence of thick cream. The plate having been placed on the levelling stand, some of it is poured on to the thickness of a quarter of an inch or so, a camel-hair brush being used to remove air bubbles if necessary. When this coating or plaster has fairly set, a further, and this time a thicker, coating is applied to the depth of three-quarters of an inch to an inch. This is then allowed to set and become thoroughly hard, when it can be removed by inserting the blade of a palette knife round the edges. We now have a plaster cast from which we can obtain others as required—which, of course, will be a reverse as regards intaglio and relief. If the dried plaster cast be soaked in water, for example, then just surface dried, and melted stearine, wax, and the like, be poured on, we get a relief in these materials from which electrotypes in copper can afterwards be obtained.

## THE IRONY OF TRADING WITH THE ORIENT.

(From a Berlin Correspondent.)

THAT trading with the Orient is not altogether smooth-sailing many manufacturers of photographic goods know to their cost. It is not altogether from the uncertainty of being paid for goods ordered in a land which the European Powers have been waiting for years to put on a sound commercial footing, only that with very limited success, and apart from the difficulty as being the Oriental to think commercially and to give an answer, there are the still greater difficulty of getting the goods sent into the customs house. It is true that in theory there is a fixed tariff on goods belonging to the various classes that are fixed by the authorities, but in reality there is neither law nor order in the practical working of these tariffs. Every customs officer seems to be more or less a law unto himself; many of them have to have their palms well greased before they will stir themselves to assist in the expedition of goods, otherwise the packages may lie rotting in the customs sheds for weeks, or it may be months. Consequently the whole scheme is reduced to what has aptly been termed a medley of official corruption and bribery. Some merchants assert that these customs officials receive no other pay than the bribes they receive from foreign traders.

Be that as it may, the following story, which has been narrated to me by an exporter of goods to Turkey, would certainly be difficult to beat in any country. To the outsider there may be a spice of humour in it, but to the manufacturer it has proved very costly. He had shipped a number of cases containing photographic plates and films to Constantinople to be forwarded by an agent there to numerous customers throughout the country. The goods arrived safely, and the agent was duly notified to clear them at the customs house. After waiting for some days on the pleasure of the autocratic officers, who only examine goods when they have nothing else to do, the agent grew tired of it, and left the place for half an hour in order to go and have some luncheon. For some reason or others the officers took it into their heads to examine the plates and films during his absence. On each box instructions were clearly printed, in Turkish as well as French, I believe, that the boxes were only to be opened in a dark-room, but the officials paid no heed to this. Most of them are in mortal terror of gunpowder or dynamite being smuggled into the country, and would not for anything trust their precious heads in a dark-room with any foreign goods. Instead, they set to work in the brilliantly

shed, and when the agent returned he found to his horror that they had completed their task, and had arranged the plates carefully in long rows underneath some windows through which the sun was shining; this, by the way, with the intention of examining them more closely! Two officers were greatly tickled with the long spools of films, and were amusing themselves twisting them into all manner of comical shapes. In short, the

whole, what now remains to be done is ruined. To remonstrance I mourn, and this is best. Unfortunately for the manufacturer, sent the goods there is no possible chance of his ever being recompensed for the very serious loss which this instance of official stupidity has caused him. It is incidents such as this which discourage the trader in the Near East.

## OUTSIDE TRADE.

A Paper in "Wilson's Photographic Magazine."

If you haven't any, there is only one place to put the blame. There is always an outside trade for every business. If the man who runs the business doesn't get it, some other fellow will. These things being so, isn't it up to you, who naturally want to make all the money you can, to go after a little outside business?

Let it be understood right from the start that I am not attempting to tell you that you should try to cabbage the commercial trade from your commercial competitor, unless you are strong on that sort of work. But there is a great deal of trade belonging to you, and not to him, which he gets because you don't know enough to make it known that you want it. A commercial photographer, whose business it is to make landscapes and buildings and machinery and pet dogs and newspaper pictures, and a few other varieties, is not going to turn down an opportunity to make a portrait; but some such portraits, made under what are at best poor portrait conditions, are sights for the gods who oversee the mistakes of mankind.

If you know how to make a portrait under your light, you should know how to make one elsewhere. It isn't at all a safe gamble that you do, but if you know the principles, as well as the practice, of portrait lighting and making you will succeed as well in the home as in the studio, albeit with more trouble.

Now, suppose you try advertising the fact that you make portraits at home. Try something like this:—

*Let the Studio Come to You.*

If you cannot come to 999, Main Street to be photographed, I will bring the studio to your home.

I can make you a "home portrait" or I can make you a portrait in your home that is in every way the same as my gallery work.

SMITH, Photographer.

Put it in the paper. Put it in several times—the announcement, not the same wording—and see if you don't get plenty of replies. There are old people, and bedridden people, and sick people, and children and babies, and lazy people, and rich people, and people who want something new, and people who want to talk about something different! There are a lot of home portraitists travelling around the country and getting good prices for good work, and I don't see why they have to be out-of-town people to get the trade of your town!

Here is another card, just by way of suggestion:—

*Your Picture in Your Home!*

You cannot bring your home to my gallery, but I can bring the essentials of my gallery to your home. Your portrait in the surroundings your friends know is something they will cherish.

The price is not high—ask me.

SMITH, Photographer.

Now agree with me, for the sake of argument, that you have orders for home work. How are you going to go about it? To transport your heavy screens and camera to a house is absurd. You have got to have some special rig to carry. Speaking from experience, I can assure you—and the best and biggest of home-portrait men will uphold the statement—you don't need half the things you will think you want.

You must have a camera and a lens.

Make it a light view camera, your portrait lens, and shutter. You must have a background.

You will have to have it, because some people won't want a home background; but because you won't need it all the time it is foolish to carry a lot, and heavy ones at that. Get a piece of dark red and light grey stuff, have them sewed back to back, put hooks on one edge, get some picture wire and two bradaws, and you are equipped. Roll it, don't fold it. You have thus two portable backgrounds, hooks to hang it upon wire, and bradaws to stick in the top of door frames and window frames, where the hole won't show, and to which you attach the wire.

You will want a reflector. I suppose nothing less than a wire ring and stand will do you; but if you can manage with it—as many a man does—a collapsible frame of light wood and a small piece of sheeting, the whole to be supported on a chair, is all that you need.

Finally, a small hammer, some tiny tacks and plenty of cheesecloth, and you are equipped to turn any room into a studio. If you cannot learn to so modify a window light with cheesecloth and reflector that you are enabled to make a first-class lighting, you had better keep out of the business; but just remember this, lots of men do it, and what others can do and have done you should be able to do also.

Because you will find people less critical of home work than gallery work is the poorest excuse in the world for doing work you would not let out of your gallery. The very amateurish amateur has set his ineradicable stamp on "home portraits," and your average customer will expect a soot and whitewash portrait, with ink for the shadow side, and be so pleasantly disappointed when she doesn't get it that she will overlook other shortcomings. But that is no excuse for making them, and you want to remember that there are others to see that picture, and critical others at that.

I should strongly advise your study of a book on composition. You have simply got to have some knowledge of line and composition and balance if you are going to make a success of making portraits with a background of reality, instead of the Stygian blackness or smoky cloudiness which your studio background allows you to use to hide possible errors of composition. Your patron may not know a plane from a pipe-stem, or most else at all the difference between a well-balanced picture and one that is toppling over into an abyss—may not know twell upjines lead and carry, or that there is a way into and a warious of any picture which is properly made; but some one with well judgment is going to know, even if they cannot put a maffed to it, when your picture is incorrect, and so you will snass or in the end.

You will find, of home portraits, the easiest to make are those which require but the head and shoulders. Unless you are a double dyed-in-the-wool, a yard wide, and warranted fast-colour home-portraitist, you want to watch with an eagle eye lest you attempt to make a head and shoulders with a "home" background. For that way lies the easy road to failure. It takes a pretty level head and a pretty good artist to put a large head and shoulders against anything but a plain and innocuous



background, and you are sure of what you are doing, plain backgrounds it is not meant that must show no design. One of the most pictures I ever remember seeing, made by an angel-faced child, by Pierce, of Boston, which an old artist, with a subdued pattern, was used as background. But here, again, is a pitfall. Beware of it! pattern in a background must never intrude—it must tone be a part—not stand out and seem to be that plane of the face and shoulders are a part.

The most effective home portraits are those pitched in a low—this does not mean a small range of deep shadows, where contrast is small. I cannot pretend to state why these pictures enjoy so much popularity, unless it is that one naturally seeks the opposite from much suffering at the hands of the amateur beginner and his steep mountains of contrast.

In portraits in the home, with the home background, watch carefully for the obtrusive background. You are not making a picture of a bookcase, of a desk, or a sideboard, or a chair, or a mantelpiece, or a fireplace. You are making a portrait of a person, and you are going to suggest their location and habitation, not shout it from the picture. You will have to learn something of the use of stops in separating planes, and learn that there is a degree of indistinctness which is pleasing, and a further degree which is inadmissible, and govern your lens opening accordingly.

I would warn you against the too conventional pose. Milady, reading a magazine by a lamp, which you "artistically" light in the retoucher's room, may be a masterpiece, but it is much more apt to give a real artist a pain. Grandpa dreaming over an open fire, made with a newspaper and frantic adjurations on our part to "sit very still—don't move—through in a minute," may please the bromine person, but will set you for ever beyond the pale of the truly elect. I would suggest your standing in a reverent contemplation before—well, Whistler's "Portrait of his Mother," for an understanding of what simplicity may mean a picture in the home.

Now there is the question of price. It seems to me that should do one of two things were I attempting to work up such a trade. I should either charge a high price for the single picture and a reasonable one for the dozen, or I should charge so high a price, single or by the dozen, that people would not want very many. Both courses have something to recommend them, and it largely depends on the kind of town and class of trade you have. On the whole, I incline to a reasonable charge by the dozen or half-dozen, but a stiff price for the single picture. There is too little profit in the single picture at anything less than a stiff price to make it worth while. On the other hand, if people want a single unique picture, as they have been known to do, the stiff price goes without question.

But making a dozen at home at but a small increase over gallery charges gives you a beautiful chance to advertise that your price is not high; and, if you have the time, or can hire a good man to do such work, you can well afford to make three or four "sittings" at home in a day—or in a week—at a price not greater than one-third more than your regular gallery price for the same size picture—always providing that your gallery does a reasonably high class of trade. If you are making cabinets at \$10 the dozen, you can make them at home for \$12.50—certainly for \$15. If you get \$18 in the studio for an 8 x 10 you should be able to make it \$24 to \$30 in the home. Many home portraitists would hoot at such prices—they get from \$5 to \$10 per single picture, and it is exactly in this terrific price that your opportunity lies. They could hardly do it for less and live—doing that exclusively. With you it is, as it were, a side line, and gives you an opportunity for extra money which should be all to the good, even if done at a moderate profit—a profit you could not live upon were it your sole source of income.

You are facing your busiest season. Immediately after it comes the dull times. If you can work in some of this home portraiture for the Christmas trade you will have a start which should be able to develop in the days when orders inside are slack.

C. H. CLAUDY.

## SILVER ACETYLIDE EMULSION.

(A communication to the Royal Photographic Society.)

It is well known that if acetylene gas be bubbled through an ammoniacal solution of silver nitrate, precipitate of silver acetylide is obtained. This substance is chiefly distinguished for the violence with which it explodes when heated. It was found, on preparing a quantity of the precipitate, that it is very light-sensitive, darkening more rapidly in daylight, when suspended in water, than any other silver compound with which we are acquainted. This light-sensitiveness suggested to us that it would be of interest to investigate the properties of an emulsion formed from silver acetylide for the formation of a "latent image."

The "chemical" nature of the "latent image" of the ordinary platino-bromide emulsion appears to us to be substantiated by the fact that that image can be removed by ordinary chemical oxidisers as bichromates.

There are three chief "chemical" theories as to the nature of the "latent image"—

- That the "latent image" consists of a subsalt of silver.
- That the "latent image" consists of metallic silver.
- That the "latent image" consists of a colloidal lake of metallic silver with unaltered silver salt.

From the investigations of Carey-Lea and Lüppo-Cramer there appears to be little doubt that the visual photo-image formed on exposure of an emulsion to light is of the nature indicated in (c).

It was shown by S. E. Sheppard that it would be improbable that the "latent image" consisted of ordinary metallic silver, because oxidisers of a sufficient potential to bleach a developed plate were incapable of destroying the "latent image."

We are therefore left with the possibilities of a subsalt of silver

or of a colloidal lake of metallic silver similar to the "photo salts."

Now from the nature of silver acetylide and its great instability it is improbable that any sub-salt could exist, so that if silver acetylide emulsions could be formed which should give "latent images," those images would probably belong to classes (b) or (c).

On the other hand, it is, of course, possible that lakes which would be easily formed with other salts of silver could not be obtained with silver acetylide.

It may be well here to define what we mean by the term "latent image." We may define a "latent image" as a condition caused by exposure to light, which will increase the rate of reduction of the silver salt by a reducer. That is, if on "development" a difference between the unexposed and exposed portions of the emulsion is perceived, we may consider that a "latent image" has been formed by the exposure. Thus silver chromate emulsion forms a "latent image" which is developable by neutral ferrous sulphate solutions, while silver erythrosinate gives one developable by the ordinary alkaline reducing agents.

The silver acetylide emulsion was prepared by precipitating silver nitrate solutions with ammonia and adding further ammonia until the precipitate just redissolved. Five per cent. of soft gelatine was then added to the solution, and the solution placed in a gas absorption bulb, through which acetylene was passed in the dark.

A heavy crust of the salt was formed on the surface, but a fine grained emulsion was also formed (probably as the acetylene dissolved).

The crust was removed and the emulsion coated on plates which were then washed for twenty minutes in running water and dried.

other emulsion after precipitation was cooked at 70deg. C., and plates coated every ten minutes up to forty minutes.

All these plates gave the same result. They were extremely sensitive to light, showing a blackening in about one-tenth of the time in which a change is first absorbed on gelatino-chloride paper. But however much or little they were exposed, they showed no difference whatever between the exposed or unexposed portions on development.

Alkaline reducers blackened the whole plate uniformly, while neutral or acid ones either blackened it uniformly or produced no change.

We therefore conclude that silver acetylide does not give a "latent image." Though our conclusions are thus negative, they seemed to us of sufficient interest to be worthy of publication.

C. E. KENNETH MEES  
S. H. WRATTEN.

## A SPEED-TESTING DEVICE FOR PHOTOGRAPHIC SHUTTERS.

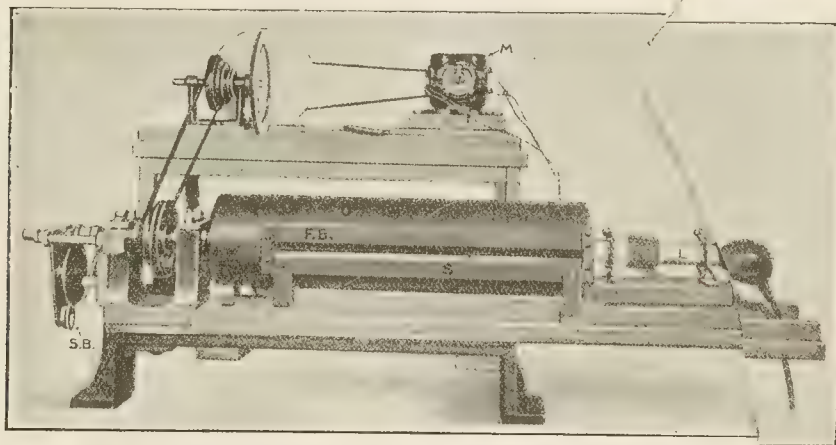
THE cut below represents a new and very ingenious device for testing the speed of shutters. The machine was designed by Mr. Fred Schmid, of the C. P. Goerz American Optical Company, and is in use at their New York factory. The essential parts of the device are: a hollow metal drum (D), perforated spirally by a series of 200 holes making exactly one complete revolution around the drum; a front board (FB) with a narrow slit (S) in it, equal in length to the distance from the first to the last hole of the spiral perforations and placed exactly at the same height as the axis of the drum; a mercury vapour lamp (L); a small electric motor (M) and such mechanical appliances as are necessary for revolving the metal drum at various required speeds.

The use of the apparatus is as follows: The lighted tube, supported

ing on the slit in the reproduction is an example. The single and double dots appearing in the reproduction are openings in the front board above the slit and facilitate the counting of the dots by marking groups of five and ten in the negative.

In making the exposure a special plate holder is used which permits of the same plate being used for a complete test of all speeds of the shutter. This is brought about by means of a device by which the plate is raised or lowered in the plate holder.

The length of exposure is figured out from the negative in the following manner: Knowing the speeds at which the shutter was set and the time value of each dot, derived from the speed of revolution of the drum, multiplying the value per dot by the number of dots gives the actual length of exposure. If the value of each



horizontally, is placed inside the drum, the drum is then revolved at a given speed which is ascertained by a striking bell mechanism (SB), giving one stroke for every five revolutions of the drum and thus permitting an accurate determination of the speed of rotation. The speeds, in practice, vary from three to eight revolutions per second and as the drum revolves each perforation therein appears in turn before the slot in the front board. To a spectator who is watching the operation the slit appears as a continuous row of light-dots blending finally into one line of light.

The shutter to be tested is attached to a camera, placed in the front of the apparatus, focussed on the slit, and with the drum revolving at a known speed and the shutter set for a given speed, an exposure is made. The photographic image which appears on the negative is a succession of dots of which the single white dot appear-

dot is determined at 1/1000 of a second and the shutter was set for 1/100 of a second ten dots would indicate the exposure to be 1/100 and the shutter to work accurately. However under same conditions should 20 dots appear in the negative the actual exposure would be 1/50th of a second and show the shutter working slower than marked.

An important feature in regard to this device is that it is equally well adapted for testing focal plane shutters. This is due to the fact that the record is produced on a straight horizontal line and will thus be correctly exposed by the slit in the focal plane shutter.

The device was designed in order to insure the accuracy of the XL Sector shutter manufactured by this company, and it is by virtue of many tests made with this apparatus that they make the claim for their shutter that "you can rely on it perfectly."

**THE DANGER OF CINEMATOGRAF ENTERTAINMENTS.**—The Works Committee of West Ham have had under consideration the question of the use of shops and other unlicensed premises for cinematograph entertainments, and the danger likely to arise to the public in the event of a panic arising from fire or any other cause. They were advised that under the existing law such entertainments can be carried on without a music licence, and the Council have no control

over the buildings used, which, in the opinion of the superintendent of the Fire Brigade, are unsuitable for the purpose, and, in some instances, a source of danger to persons witnessing the entertainment. The Council have decided that the attention of the Home Secretary be called to the subject with a view to the promotion of legislation, placing all such entertainments under the notice of Councils as the licensing authorities.



## Exhibitions.

### HOVE CAMERA CLUB.

At the Hove Exhibition, which was held last week, the judge, Mr. Furley Lewis, awarded thirteen replicas of a statuette in art metal designed by Miss Mary E. Arthur, of the Brighton School of Art. The statuette is a female figure representing the "Genius of Light." Two go to Mr. Chater Lea, who, in addition to energetically carrying out the duties of exhibition hon. secretary, has sent in a number of exceedingly attractive works. The best effort among the club members, however, was attributed by the judge to V. E. Morris. For the second year in succession he was given the championship salver, the picture which has won him this prominence being a very difficult study of the cloister window in Chichester Cathedral. The sunlight effect is splendidly conveyed.

In the open class attention will inevitably be focussed upon Oscar Hardee's portrait of two Dutch fisherfolk. Councillor A. R. Sargeant, J.P., the president of the club, to whose exertions the members owe so much, has gained notice, his "Low Tide, Bosham," being honourably mentioned. The full list of awards is as follows:

#### OPEN CLASSES.

Class "A"—Prints (any subject).—Statuettes, "Summer," Mrs. G. A. Barton; "The Convent Well," John H. Gear, F.R.P.S.; "Lady with Lace Collar," R. Dührkoop; "Isabella en Jan Wilden," Oscar Hardee; two series, "Tawny Owl" and "Song Thrush," A. Taylor; Autochrome transparency, Captain W. Stomm; "The Darning Lesson," Aubrey Harris. Hon. mention, "The Spell," Mrs. E. Peake; "Oranges and Bananas," E. W. G. Burder; "Edinburgh Castle," Dan Dunlop; "The Imposition," G. C. Vachell; "Low Tide," A. R. Sargeant; "Crypt, Hereford," S. G. Kimber; "Grootte Kirke Edam," F. J. Phillips; "Shepherd and Flock," W. Chater Lea; "A City Church," B. C. Wickison; "The Abbey Stream," John H. Gear, F.R.P.S.; "A Matter of Opinion," B. Cox; "Snow in April," Miss A. B. Warburg; "The Harvest that is to Be," Oscar Hardee; "Col. Heathcote," G. C. Vachell; "Mother and Child," H. Hinz.

Class "B"—Lantern Slides.—Statuette, "Looking into Cloister, Chichester," V. E. Morris. Hon. mention, "Blue Tits," A. Taylor. Autochromes, P. D. Prior.

#### CLUB CLASSES.

Challenge Salver for best picture in Club Classes, presented by W. A. Hounsom, J.P.—"The Cloister Window, Chichester," V. E. Morris.

Class "C"—Prints (any subject).—Statuettes, "What shall we put next?" W. Chater Lea; "A Bend in the Lane," W. Chater Lea; "Cloister Window, Chichester," V. E. Morris. Hon. mention, "On the Sussex Ouse," E. Munt; "Mischief," F. R. Richardson; "An Old Street Corner," W. Chater Lea; "April, 1908," G. A. Hammond; "On the Arun," F. H. Rake.

Class "D"—Lantern Slides.—Statuette, "National Gallery," V. E. Morris. Hon. mention, "Street, Polperro," W. Bailey; "Canal, Gorincham," V. G. Young.

Class "E"—Novices.—Statuette, Miss E. M. Boynton. Hon. mention, G. A. Hammond.

### FORTHCOMING EXHIBITIONS.

October 27 to 31.—Heaton and District Camera Club. Secretary, George C. Urwin, 24, Tenth Avenue, Heaton, Newcastle-on-Tyne.

November 2 to 11.—Portsmouth Camera Club. Sec., F. J. Lawton, 20, Clarence Square, Gosport.

November 4 to 7.—Hackney Photographic Society. Secretary, Walter Selve, 70, Paragon Road, Hackney, N.E.

November 11 to 14.—Cambridge and District Photographic Club. Sec., T. J. Sowdon, Sunny Side, Guest Road, Cambridge.

November 20.—Redhill and District Camera Club. Entries close November 7. Sec., J. Paterson, Ness House, Redhill.

November 23 to 26.—Lancaster Photographic Society. Entries close November 14. Sec., J. Holt, 11, Fern Bank, Lancaster.

December, 1908, to January, 1909.—Kiew International Photographic.

Sec., S. T. Horovitz, Technical Society, Kreshtchatik, 10, Kiew, Russia.

1909.

January 6 to 27.—Northern Photographic (Manchester). Entries close December 11, 1908. Sec., S. L. Coulthurst, Broad Oak Road, Worsley, Manchester.

February 13 to March 13.—South London Photographic Society. Sec., H. Creighton Beckett, 44, Edith Road, Peckham, S.E.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for Patents have been received between October 12 and October 17:—

CAMERAS.—No. 21,609. Improvements in photographic cameras and camera fittings. Henry Major, 24, Sarholme Road, Forest Hill, London.

DARK-ROOM.—No. 21,684. Automatic folding and portable dark-room. Nicholas Vladimiroff, 61, Talbot Road, Bayswater, London.

CINEMATOGRAPHS.—No. 21,787. Improvements in apparatus for imparting a positive intermittent travelling motion to cinematograph films. James Williamson and Colin Martin Williamson, 11, Wilbury Villas, Hove, Brighton.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

COMPOSITE GLASS PLATES.—No. 13,733. 1906. The invention consists in a method of joining pieces of glass to each other for photographic and other purposes in such a way as to avoid unsightly joins. For this purpose thread, saturated with adhesive matter and preferably of loosely twisted structure, is wound round the edge of a straight-edged plate of glass—that is to say, a plate with edge surfaces perpendicular to the back and front surfaces; the said thread is pressed against the edge surface and the backing or supporting plate, and another plate of glass, similarly treated or without thread at the abutting surface, is placed adjacent the first plate, the abutting edges of the plates being pressed tightly together. This process is repeated until the requisite number of plates have been joined together. If the plates are of uniform size and shape a single thread may be wound round a series of plates placed edge to edge, and one row of plates may then be joined to another row, the latter having thread placed on the edge surface to which another row of plates is to be joined. The individual plates or series of plates are pressed together as tightly as possible, and a suitable implement may be used to press the thread against the edge surfaces and against the backing. The space intervening between the plates at the joints is only equal to the diameter of the thread, and the joints are, therefore, not unsightly, and do not represent an appreciable amount of lost space.

The hardening of the adhesive causes the individual plates to be joined tightly together and to the backing, so that the composite plate can be handled and treated like an ordinary homogeneous plate. The individual plates can, however, be separated from each other with comparative ease by detaching portions of the thread and then pulling it away from the plates; in order that this can be done the strength of the thread must, of course, be greater than that of the adhesive.

In addition to the advantages already referred to, namely those of improved appearance—for example, in the case of transparent glass pictures, and of greater efficiency in the case of photographic plates—the invention has the advantage that no adhesive penetrates between the surfaces of the individual glass plates and backing; this is important, since the presence of adhesive between the plates and backing renders it very difficult to detach the plates. H. J. Haddon, for the Rotaphot Gesellschaft für Photographische Industrie, Berlin.

FOREGROUND SHUTTER.—No. 23,020. 1907. The object of this invention is to provide a cheaply constructed shutter for photographic lenses whereby various exposures may be given of different parts

of a plate so that the sky and foreground will be exposed to the actinic action of the rays of light during different lengths of time so that clouds can be taken with landscape and an even negative be obtained under all conditions. Fig. 1 is a front elevation of

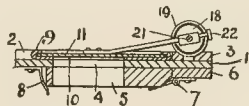


Fig. 1.

the shutter. Fig. 2 is a vertical section. Fig. 3 is a section on the line  $x-x$  of Fig. 2, and Fig. 4 is a front elevation, in part showing a modification.

The shutter comprises a suitable frame which may consist of two plates 1, preferably formed with a ledge 2, and a strengthening strip 3, and having a circular aperture 4 corresponding to the lens. At the back of the frame is a socket piece 5, which is hinged to the frame or to a strip 6 on the frame, as at 7, and affords means for adjusting the device on to the lens, there being a spring 8 to keep the socket in closed position. The hinge enables the frame to be folded back when focussing the lens. Suitable guides 9—preferably formed on the edges of a metal plate 10—on the outer face of the frame retain a reciprocating shutter 11 in which is a narrow slit 12 corresponding in length to the diameter of the aperture 4. A spring catch 13 secured on the frame at 14, and engaging a projection 15 on the shutter, holds it in such position that the slit is above the aperture in the frame. The catch can be released and the shutter be permitted to fall by means of the usually employed rubber bulb 16 and the expansible bulb 17. A cylinder

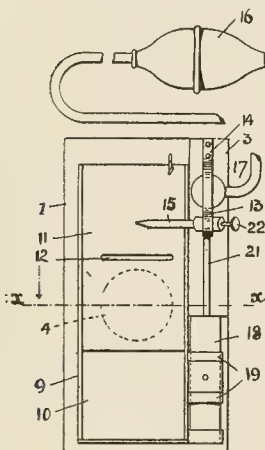


Fig. 2.

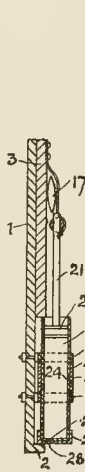


Fig. 3.

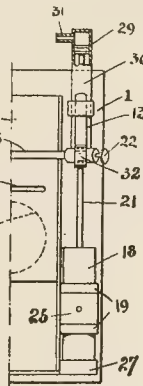


Fig. 4.

18 is secured to the frame adjacent the shutter, by bands 19 or other means, and is fitted with a piston 20, having a rod 21, which projects from it and is adjustably fastened to the projection 15 by a set-screw 22. The cylinder has a small perforation 23 at the bottom, and a slightly larger one 24 about midway its length.

When the shutter is released it will (together with the piston) fall rapidly until the perforation 24 is passed by the piston 20, and then more slowly to the bottom by reason of the air in the cylinder escaping through the lower and smaller perforation 23 only. The escape of the air, and, consequently, the speed of the shutter, can be regulated by alteration in the size of the perforations, and that may be effected by any suitable means, as, for instance, a ferrule 25 movable around the cylinder, having a perforation 26, and the perforation more or less covering the perforation 24 in the cylinder as the ferrule is turned. At the bottom of the cylinder is a disc or cap 27 having a perforation 28 arranged to operate in a similar manner by turning it round.

In an alternative construction, the piston-rod 21 may be carried up beyond the projection 15 on the shutter, be formed with a piston 29 at its upper end, and enter a cylinder 30 of smaller dimensions than the cylinder 18. The upper end of the cylinder is closed with the exception of a perforated nipple 31, to which the tube of the rubber bulb is attached. Air forced into the cylinder 30 causes the piston and rod to descend, carrying with them the projection 15, to which said rod is secured by the set-screw 22. The projection 15 is forced from beneath the curved part 32 of the spring, and the shutter, being then released, its action is the same as that described with reference to Fig. 1. Henry Arthur Byers, of Pe Ell, Lewis County, Washington State, U.S.A.

SELF-DEVELOPING ROLL FILM CARTRIDGES.—No. 21,692. 1907. The purpose of this invention is to provide the films with an improved form or system of packing that allows them to remain in their original wrapper, spool, case, or packing from the moment they leave the manufacturers' hands to the completion of the negatives—that is to say, the film package with its complete packing is loaded into or unloaded from the camera in daylight, is placed in the developing, fixing, and washing solutions in daylight, for which purpose the outer packing box may serve as the developing tank, and the finished negatives are finally removed from the packing in daylight, the packing being then thrown away.

In order, therefore, to carry this invention into effect, the first essential is that the layers of film whilst in their package shall be separated by a space of sufficient width to allow developing solution to pass between each layer and reach the sensitive face of each film. These spaces are termed "water spaces."

It is further necessary that these "water spaces" in the interior of the package shall communicate with the exterior by means of water vents formed in the enclosing wrapper, spool, case, or packing, and that such water vents shall be light-tight.

These water spaces between the films are filled up by a so-called "developing wrapper." This wrapper is made of absorbent material, with or without water-distributing channels, and lies between each layer of film, one side being in close contact with the sensitised face of the film. Its function is to prevent uneven development, it being so constructed that it distributes the liquid developer to the whole surface of the film in an even layer.

The introduction of water spaces between superimposed layers of rolled film is not new, for this principle obtains in the systems of developing tanks now used for developing and washing films, but in such systems the exposed film has to be wound off its flanged daylight spool, upon which it was already wound and packed for sale, the water spaces being then formed by winding the film on to a spool of large diameter, and placing between each layer of the coil a separator called a "developing apron," consisting of a sheet of celluloid having thickened edges of serrated rubber, or similar rubber strips at each side without the connecting celluloid sheet.

The introduction of water spaces between layers of flat film has also been proposed, and chemicals for developing and fixing have been applied to films and plates as in the patents of Thornton and another, 17,292 of 1899.

The standard form of daylight-loading roll film as ordinarily constructed comprises a light-tight carrier, consisting of a spool or bobbin with light-excluding discs at each end and suitable centres and keyways; a long strip of black paper or light-excluding wrapper coiled on the bobbin and fitting closely against and between the discs; and in this carrier is enclosed a strip of sensitive film, shorter than the wrapper, but attached at one end to the wrapper and rolled up in it. Numbers or other indicating marks are printed upon the back of the wrapper. Other forms comprise a film having an opaque coating attached to the back instead of a separate wrapper. Other forms, again, have neither opaque wrapper nor backing, but have opaque ends or extensions of the strip itself.

The standard form of daylight-loading flat film is known as a "film pack," and, as ordinarily constructed, comprises a series of flat films placed in a pile in the front compartment of a light-tight carrier, consisting of a shallow box; the box having an exposure opening cut in the front, and a spring pad or division plate inside the box, dividing it into two compartments. The films are placed between or are attached to leaves of opaque paper, having numbered extensions that form pull tabs by which the films may be



drawn from the front to the back compartment of the case, the manipulating tabs passing through a light-tight valve in one edge of the case. The front aperture is closed by the manufacturer by means of a shutter or cover of opaque leaves having its own pull tab. In improved forms the film, the opaque backing, and the pull tab are all made in one sheet or piece. Examples of these film backs and their improvements are shown in patents Nos. 4,955 of 1898, 11,033 of 1906, 11,884 of 1906, 12,003 of 1906, and 21,189 of 1906. It is to either of these standard forms that the invention is applied.

The improved film package of daylight-loading and daylight-developing films comprises, as a whole, the following features:—

(A) A series of superimposed layers of sensitized film A.

(B) A light-tight carrier for same, comprising either a bobbin B and wrapper *b* for roll films, or a case C with wrappers for flat films.

(C) Water vents in the wall of such light-tight carrier effecting communication between the interior water spaces *a* and the exterior.

(D) A series of water spaces *a* inside the packet—one between each layer of film A.

(E) Means for separating the films and maintaining these water spaces, and a water-conducting developing wrapper D, placed in each water space.

(F) A light-obstructing layer *b* between each film layer, formed either on the back of the film itself, or as a separate interposed sheet or layer.

(G) Numbers or other indicating marks, denoting the numbers and position of each exposure section of the series.

To these features may be added, in order to make the film package more complete and convenient:—

(H) A developer F, or developer and fixer G, consisting of chemicals in a dry form, soluble when the package is placed in water, such chemicals being applied either to the back of the film or to the opaque layer, or to the developing wrapper, or to the light-tight carrier, or to the enclosing packing case or tank.

(J) A water-tight air-tight packing case M, to enclose the light-proof film package and form the tank, in which it may be developed, fixed, washed, and stored or mailed.

The series of layers of film A are made in the ordinary way, and the light-tight carrier holding them (the spool bobbin B or the case C) is of ordinary construction, provided with suitable water vents. The water vents are formed as follows:—For roll films there is a pool or bobbin having a central core either of wood, with a central threading slot, or of a hollow tube or tubes, as used in Patent No. 17,737, of 1899. The end discs are of the usual diameter, the pool overall being of the standard dimensions, so that it will fit existing cameras.

The end discs, however, instead of being made of the usual single plate of metal (which would be useless, because it would prevent water reaching the film) are made to allow water to enter and yet keep light out.

The end discs may be made of hollow or box form, with two plates perforated, and a baffle plate placed between them so that water can freely pass through the hollow flange to the water spaces formed between the layers of film.

Or the end discs may be made out of a single piece of absorbent material, such as felt, cloth, or the like, or a piece of absorbent material may be placed between two perforated metal plates. Or the end disc may be made hollow with two metal plates and a baffle plate, with an aperture round the periphery for water to enter. Another way of forming the end discs hollow is by two plates separated some little distance apart, and each having raised flanges which form baffle plates when turned towards each other, so that a tortuous water passage is formed through which light cannot pass. Another way is to perforate the two plates, placing the perforations non-coincident, and forming each plate with a rim so that when brought together (one rim being of less diameter than the other), they form a box-shaped disc on the end of the spool.

For flat films a flat rectangular case is made of the usual construction, but with light-trapped water vents in one or more sides or edges of the box, as already described, for the spool flanges. Perforations covered with absorbent light proof material, or baffle plates, are convenient.

The water spaces between the layer of film are formed as follows: in one form either the film or the usual opaque backing strip that forms the wrapper is provided with thickened edges, which, when

the film is laid or wound in superimposed layers, keeps such layers separated sufficiently to allow fluid to pass between. These thickened edges are serrated or cut away at intervals to provide entrances for the developing fluid.

A convenient way of forming these edges is to crimp or emboss raised teeth or dots close to each edge of the sheet—either the edge of the film itself or the edge of the opaque backing strip or of the opaque interleaves—by passing between suitable embossing rollers. Or the edges may be thickened by additions thereto instead.

Between each layer of film is interposed a "developing wrapper," which keeps the films absolutely separated, yet allows the developer to pass between and reach the entire face of every film. The developing wrapper is formed in any of the following or other suitable ways:—For roll films this wrapper is formed as a long strip, on the back of which may be numbers or other indicating marks, and on the front side the strip of film suitably attached by one end.

For flat films the wrapper is formed as a series of leaves, having numbered pull tabs at one end, and a film attached to the front of each leaf by the usual means.

In its simplest form this developing wrapper is made of some absorbent material, in the form of a thick sheet of several thin sheets. Any suitable material may be used, such as pure unsized fibulous paper, such as filter-paper, or blotting-paper; or some textile material, such as woollen or cotton cloth; or some hygroscopic colloid, such as gelatine, agar-agar, or the like.

This plain absorbent sheet wrapper is simple and cheap, and is quite suitable for small sizes or films. It lies in contact with the face of one film layer and back of the next film layer, and if made sufficiently thick, and not pressed or wound too tightly, it effectively sucks up sufficient fluid when placed in the developer, and distributes it evenly over the entire face of the film laying in contact therewith. As such developer is absorbed from the wrapper into the gelatine of the sensitive film, it is reinforced or replaced through capillary attraction by the absorbent wrapper. The process continues until the film is fully charged and development completed.

A more perfect form of this developing wrapper, and one that is better suited for films of large size than the simpler form already described, consists in making it with a series of fine distributing channels over its entire surface, in order to permit of the developing fluid reaching every part of the wrapper more quickly and evenly. Such channelled developing wrapper may be formed of any of the above materials, though gelatine or else absorbent paper is preferable. A convenient construction is to form the wrapper of two or three sheets, either laid loosely or preferably cemented together, one or two, or even three of such sheets having indentations embossed in their faces in the shape of a series of corrugated lines running across the film, or else a series of such lines crossed diagonally, or a series of curved or circular lines crossing and overlapping each other, or else a series of raised dots. In any case the embossed lines or dots are placed very near together, the spaces between being exceedingly small. With such an embossed wrapper the channels or spaces serve to convey and distribute the developing fluid to all parts, and the raised parts serve to transfer it to the face of the film.

In order that these raised parts shall not cause marks on the film and uneven development (though if sufficiently close together they should not), a flat sheet of the absorbent material is placed between the face of the film and the raised part of the wrapper, to act as a diffuser of the developer. This flat sheet is preferably cemented to the underlying embossed sheet, the wrapper thus being formed of two united sheets, but if desired a third flat sheet may be attached to the opposite side, the embossed sheet being enclosed between the two flat ones. Such a wrapper resembles in construction a piece of the well-known "corrugated packing paper," used for wrapping round bottles and other frail articles, and may be easily and cheaply manufactured by passing one sheet between embossing rollers, and then depositing upon a plain sheet bearing cement, or upon a sheet of gelatine before it has set or dried.

The indicating numbers or other marks may be applied as follows: Generally these are a great source of trouble, especially in the case of roll films, as, under certain conditions, such as damp storage, they "set off" and mark the adjoining sensitive film. This is obviated by forming the numbers in the body of the developing

wrapper or the opaque paper. In the case of a wrapper of textile material the numbers may be woven in a different coloured thread.

In the case of paper or gelatine they are preferably stained in the body of the material, with an inert dye, instead of being painted upon the surface with pigment as usual.

Owing to there being no necessity to remove the film from the package for development, and the package being light-tight in itself, the entire package is immersed bodily in the developing solution. A darkened room or enclosed light-proof tank are both unnecessary. Any open vessel may be used, such as a basin, jug, drinking glass, or the like, the whole operation of transference and development being performed in open daylight.

In order to make the improved film package more convenient to the tourist or traveller we may provide it with self-contained chemicals in the dry form, so that upon immersion in water they dissolve. Such a package is a "self-developing film package." The self-developing chemicals may be applied to the packages in any of the following ways:—The necessary developing chemicals, in a suitable dry form, are applied to the package in such a manner that they will never affect the film, even under the influence of damp storage or the like, until the package is placed in water, whereupon the chemicals dissolve and thus form a developing solution of the correct strength and quantity. The chemicals may be applied to the package in several different ways, and either in the form of a paste coated thereon, or a solution soaked in, then dried. For example: 1. To the back of the film, either to the base itself, or to the anti-curling back layer of gelatine. 2. To the opaque layer—preferably combined with the gum or other soluble cement that secures the opaque layer to the back of the film. 3. To the loose opaque layer, if such be used. 4. To the developing wrapper. 5. To some part of the light-tight carrier, such as inside the spool core, outside the enclosing wrapper of same, inside the flat film case, or in any other convenient position. 6. To the air-tight packing case that encloses and completes the improved film package, and which can be used as the developing tank.

Although any of the above ways are feasible and workable, it is best to place the developer in such a position that it cannot reach and affect the film surface during storage, or until placed in water. For that reason it is well to place the chemicals in the form of a soluble capsule, in some convenient part of the package, such, for instance, as in the hollow core of a film spool, or attached to the end of the spool wrapper (the inner end before exposure, which is the outer end after exposure), or inside the enclosing case of a flat film pack (for instance between the plates of the central expanding division).

Probably the best position of all is to place the chemicals in the air-tight packing case that encloses the film package. In that position it is quite away from the film, whilst being used in the camera, but when the package is replaced in the enclosing case the two are brought together again, and, whilst keeping inert for any length of time afterwards without touching the film, the developer can be immediately brought into action upon the film by filling the case to the brim with water. John Edward Thornton, Altrincham, Cheshire.

### New Trade Names.

STANDA (device).—No. 306,006. Photographic apparatus included in Class 8. Standa, Ltd., 3, Cherry Tree Court, Aldersgate Street, London, E.C., manufacturers. September 5, 1908.

TO SOCIETY SECRETARIES.—Those at present responsible for the preparation of a programme may be well advised to make a note of a tour of the societies now being arranged by Messrs. Chas. Zimmermann and Co., of 9 and 10, St. Mary-at-Hill, E.C., for their Mr. F. C. Hart, whose lecture-demonstration deals with the use of the world-famed Agfa products, and particularly with the Agfa flash powder and lamp. Mr. Hart is making a feature of taking a flashlight group of his audience, developing and printing the negative in their presence, and demonstrating the use of certain Agfa preparations in the treatment of negatives and prints. Societies who have invited Mr. Hart speak highly of his services.

## Analecta.

*Extracts from our English weekly and monthly contemporaries.*

### Transferring Prints to Wood.

The value of a small wooden box for trinkets, hairpins, matchboxes, etc., as a gift may be very greatly enhanced (writes Mr. F. Palmer in "The Photographic Monthly" for November) if it is enriched by a portrait of the giver or by one of his pictures. To transfer a photograph to wood which has not been previously sensitised may seem difficult, but as a matter of fact it may be very simply effected in the following way:—

First, clean off the polish on the wood with a rag dipped in methylated spirit, and by means of the finest glass paper get a perfectly smooth surface, free from fluffiness or scratches. Then polish with the common French polish, which is nothing more than a strong solution of bleached shellac in methylated spirit, and may be purchased at any oilshop. As soon as a good polish is obtained stop work; only be sure that the French polish is not used sparingly.

Next take the photograph, which may be P.O.P. or bromide, and, in preference, glossy on thin paper, and soak it in spirit until quite pliable. Lay it face downward on the polished wood, and rub flat and free from bubbles with a wad of wool soaked in spirit. It is now to be set aside to dry hard, and when the spirit has evaporated the paper will be found firmly attached to the wood.

Getting rid of the paper is a little tedious. Dip a piece of sandpaper in lukewarm water and rub away the paper, not merely in one spot, but all over alike. Gradually the paper will wear away and the picture will appear. Great care must be taken now not to rub hard enough to injure it, and when the whole is equally and sufficiently distinct, stop and set aside once more to dry.

After the lapse of a few hours, all night if possible, to ensure the absence of all moisture, apply the white French polish again in the ordinary way, just as if there were no photograph there, and wait until a satisfactory polish is obtained. In this way the picture will be protected against all ordinary usage, and the owner will have a permanent reminder of the giver.

### Group Lighting.

The majority of portraits (writes the "Bulletin of Photography") show one light and one shadow side, but suppose we are required to photograph several persons in a group, it would be very difficult, not impossible, to get pleasing effect with only one light and shadow side. Some of the faces would have the features distorted, the decrease of light intensity towards the shadow side being too abrupt. When we have several figures to illuminate it is advisable to choose the side light regardless of everything else with exception of a small area between the figures and background. This management gives considerable purity of illumination and at the same time an atmospheric effect. The heads should be directed as much as possible towards the top light, by which the countenance becomes possessed of soft graduated half-tones.

Open the top light more or less on the two sides so that the light of necessity gets somewhat around the figure. Skill is now demanded in determining where the shadow of the middle top light is cast. Upon this depends its favourable result. Suppression of light might seem to argue for lengthy exposure, the bane of photographic practice, but experience teaches that harmonious illumination requires less time than when the effect is contrasty. Then there is less contrast in the subject, development may be prolonged and more detail brought out in the shadows than is the case with hard negative.

### Titles on Postcards.

Every amateur maker of postcards (says a writer in "Photography and Focus" for October 27) at some time or other must have wished to be able to print the titles on his cards as neatly as is often seen on the commercial cards. The titles must either be very neatly printed on white card or may be cut out of printed matter and stuck on a card. As a rule a local guide book will be found to contain names of the subjects, and these names are simply cut out with a pair of sharp scissors and mounted on a card. Six or eight names are usually arranged on the card so that all can be photographed together on a quarter-plate. The plate used for this purpose should



a "photomechanical" one (backed). The negative must be fully developed, so as to get the white ground of the lettering as opaque as possible, and if sufficient density is not obtained it may be intensified with mercury. The negative is then cut up into strips each containing a title.

To use one of these strips (presumably stripped from the glass plate. Eps. "B.J.") an opening is cut in the card which surrounds the postcard negative, and the negative of the title is inserted, an opening being also cut in the mask above, so that it may print through. If the title negative is not very dense the borders of this opening may show on the print, but this can usually be prevented by fastening a piece of black paper on the outside of the glass, so that the title does not print while the postcard is being printed. The black paper is then pulled away for just long enough for the postcard to print. The method takes a little trouble, but it gives a much neater result than any other.

### The Swing-Front in High-Speed Work.

The lens is mounted in a special panel (writes Mr. Adolphe Brahm in "The Amateur Photographer and Photographic News" of October 27, speaking of the use of the Adams four-way swing-front) with a suitable bellows. By turning a screw with a milled edge the lens can be tilted on an axis either backwards or forwards; the exact extent of its excursion is indicated by a lever, which points to a mark when the lens is perfectly upright. The panel is rectangular, and, being easily removable and replaceable in any one of four positions, it is evident that a horizontal, as well as a vertical, swing of the lens can be produced. Let me make it definite at once that this swing of the lens does not in any way resemble the "swing" on the so-called "panorama" cameras; a different field is not presented by the tilt of the above adjustment, but a modification of the focus of the same field. The reader who has followed my description of the swing-lens and the reasons for its use in a horizontal direction will readily understand that it will be indicated only in those cases when the foreground and background are not directly behind one another. All focal-plane workers will remember how very seldom the camera is directly opposite any moving object, but almost always obliquely—an excluding, of course, the photography of single figures—a condition which is exactly amenable to the use of the swing-lens. I will describe its use by a single example. One is photographing a race at a corner—a series of runners one behind the other. The fluidity of movement necessitates a lens of fairly high aperture, which only the leaders will be in sharp focus. Standing at a convenient angle I swing my lens *towards the more distant objects*, to focus again on the position which the foremost figure will occupy; and now I have the whole field sufficiently sharp. Although I have written this brief exposition of the swing-lens only for high-speed workers; I do not forget that many of my adherents of the focal-plane shutter do not regard the 1-1,000th sec. exposure as the *ultima thule* of photography; and to these I would commend this useful little adjustment as rendering possible landscape photography with a hand camera in circumstances when stopping down is for any reason impracticable.

### CATALOGUES AND TRADE NOTICES.

**TELLA "BARGAIN LIST."**—The list of the Tella Camera Co., of High Holborn, London, W.C., runs to forty-eight pages, and includes a great variety of apparatus, from reflex cameras down to slip-in mounts. The company offers goods on three days' clear trial, and guarantees the apparatus listed to be *bona fide*, a term which our knowledge of the firm's trading prompts us to substantiate. The bargain list is one worth getting, particularly in view of the firm's special offer to customers at a distance who wish to dispose of their apparatus in part payment.

**ENLARGING APPARATUS.**—A new list of enlarging apparatus and accessories has just been issued by the firm of Lancaster, Birmingham, whose "Multum in Parvo" enlarger was surely a pioneer in similar instruments of this class. Since its introduction the facilities for enlarging which Messrs. Lancaster have placed at the disposal of the amateur have been many and various, notable among them being the convenient illuminating chambers, of which quite a number of patterns are now available. The list, which is very fully illustrated, is certainly one which any one commencing the season's work in enlarging should not fail to get.

## New Books.

"Photography for Young People." By Tudor Jenks. (London and Edinburgh: W. and R. Chambers, Ltd.) 3s. 6d.

The author of this book has evidently sought first of all to impress upon the boy or girl reader the scientific principles on which photography is based. He claims—and rightly too—that he instructs the reader in the practical use of a photographic outfit. So he does, but he alternates a chapter on practice with one on theory, with scarcely an intermission throughout the book. And as both his theory and practice are sound, we cannot but commend this method as quite admissible, since it almost compels the reader to learn not only the methods of every-day photography, but the principles which underlie them. The author introduces his subject by describing the principle of a lens' action, a chapter which we might commend to the individual who recently wrote to a firm of photographic opticians to question a statement of theirs that a certain lens which at  $f/6$  covered a quarter-plate would at  $f/22$  cover a whole-plate. He had repeatedly stopped down in this ratio, but his sensitive film had failed to show any sign of enlargement!!! The operations of exposure and development are very thoroughly treated by our author in several chapters, though the space he devotes to printing processes is scarcely proportionate. He describes the practical working only of P.O.P. and gaslight paper, merely mentions gum, carbon, and platinotype, of which latter his appreciation is scarcely adequate. But he is up-to-date enough not to omit ozobrome.

The plate illustrations might be of better subjects. They are not by the author, and therefore there is no excuse—as this part of the work has been vicariously performed—for a better selection not having been made. Nevertheless, the volume as a whole is an excellent one to put in the hands of a boy or girl of twelve or more years of age as an interesting and instructive work on photography. The writer's style throughout is uninvolved, and the get-up of the book fits it to be a Christmas gift.

"Photograms of the Year 1908." (London: Dawbarn and Ward, Ltd.) 2s. net.

Considering the disadvantages under which the compilers of this annual publication have to work, the result is quite surprisingly good. Pictures are collected and reproduced, and critiques and articles written nearly half a year before the book reaches the hands of the public. A great many of the pictures see the light ultimately in the London Autumn exhibitions, but in some cases it does not appear that the world at large entirely endorses the opinion of the "Photograms" critic who has ventured upon a prophetic opinion so far ahead. In the present volume, for example, we are shown four "thumb-nail" diagrams of the works of Mr. Arbuthnot—an exceptional distinction, certainly, and one with which we should concur if only the object had been to show the paucity of the photographer's design; but when we find these pictures to be mere accompaniments to a page of compliment, highly seasoned with adjectives of admiration, we are forced to believe that an early and private examination of pictures is not likely to be so purely critical and impartial as the examination of things standing their ground upon an exhibition wall. One thing in this "Fragmentary Retrospect" will perhaps help Mr. Arbuthnot out a little. It is a suggestion that his galanty-show horse should be viewed upside down, so that it looks like a tree. We have tried this plan, and honestly affirm that the whole thing is infinitely to be preferred in that position—that is, if the spectator will let his imagination run riot.

The great value of the volume is, in reality, that it shows us a goodly number of photographs that have not appeared elsewhere from various causes. It is pleasant to turn these pages and see the reproduction of pictures by names well known; pictures that but for "Photograms" would have remained in obscurity, most of them for another year at least. Moreover, the book is international, in that it covers quite different and wider fields than do the illustrated newspapers, which only give us again and again the things we have seen often enough. The arrangement, too, by which photographers send in their works first to "Photograms" and thence to the exhibitions, gives us in many cases an interesting peep behind the selecting scenes. Quite a number of the pictures here have

been "rejected," and the cruel-hearted may go through the things that are new to them and endorse the judgment of the committees.

On the whole the outlook upon pictorial photography which this volume affords is more hopeful than usual. There are fewer stupid things among the pictures than there have been in past years, there are plenty stupid enough nevertheless. But picture-making seems to have been a saner process during 1908. Is it that at last all the available freaks are exhausted? To repeat them is certainly more damning than to repeat the old and safe recipes.

The frontispiece facing the title is a portrait by Wm. Crooke. It is as old-fashioned as it can well be, abiding absolutely by all the laws and traditions of art which our American cousins strain their reputations to upset. Yet there is not a lovelier thing than this portrait in the whole book. Its charming subject of a young girl at three-quarter length, standing in profile, but with her face turned towards us, is most effectively lit and simply and prettily posed. Another frontispiece is made by the "Maison Jeanne d'Arc" of F. H. Evans, which is the best thing that the year has produced in photographs of street architecture.

The pictures from abroad are, naturally enough, not so fine as a whole as those of our own country, which still leads in pictorial enthusiasm, a fact of which a perusal of the foreign contributions leaves no doubt. We are much struck by a finely chosen woodland scene, excellent in composition and rich in romantic feeling. This is by Dr. Ed. Leslie Pooler (Australia), who calls it "Sullen Winter." A popular magazine is most successful when "every picture tells a story." Miss Emily Pitchford (U.S.A.) has told hers remarkably well with a couple of back views of young women gazing out of a window. The action supplies the literary appeal of the title "Suspense." Just by contrast we may refer here to J. C. S. Mummery's "Barn Door," which loses a great deal in reproduction. This work relied entirely upon certain atmospheric charms for its effect and intensity of feeling. In actual subject matter it makes no claim, and as its "mood" has escaped the printer, it naturally does not look as well in the cold printing ink as it might. "Bathers," by Louis Fleckenstein (U.S.A.), is probably a "fake." There is something not quite convincing about the view seen through the bathing machine window (if it is really one, they are not like that in this country). The chief bather is a "maiden mid nodings on," who is only visible by the edging of light that catches her contours, making very agreeable lines. The thing is rather a *tour de force*, and we are inclined to think rather more highly of it than the critic of the volume does, even although we believe it to be a composite affair. We leave to our readers the solution of the question as to how Mr. Fleckenstein first of all got himself into the machine with his sitter, in such a prudish place as U.S.A., and how, once in, he managed to keep sufficient distance between himself and the sitter to obtain so nicely proportioned a photograph.

"Paysage Decoratif" is one of C. Puyo's charming figure subjects set in landscape. Each factor is in itself delightful, but it cannot be said that they make a particularly decorative ensemble. The result is characteristically photographic, and the figure seems to want placing much higher up in the picture. A "Decorative Study," by Mrs. A. W. Brigman (U.S.A.) is a circular scheme enclosing a nicely designed figure of a young person photographing a bubble or a celestial orb—something spherical in the distance, at any rate.

The literary contributions from abroad do not make quite such interesting reading as they have done in past years. The same pessimistic note is uppermost, as though the reporters were a little ashamed of the year's harvest, and were disarming criticism by anticipating the scoffs from the Mother Country. F. Mathies-Masuren, writing of Germany and Austria, says: "public interest . . . was just sufficient for a visit to our shows, and since these are now of rare occurrence, the sympathy has gradually dwindled." In Germany the laurels seem to rest with the professionals; in Austria they are falling to the amateurs. In Canada we are told by Sidney Carter that "the consumption of photographic material in large quantities to no particular purpose goes merrily on." He also instances the one touch of nature when he tells us that the attempts of the Toronto Club this last year to conduct an exhibition which would give satisfaction to everybody resulted in many of the best-known exhibitors withholding. Mudie Thomson's article upon South Africa is unnecessarily long and too critical of examples which the reader does not know. A note of hope is

sounded in the affirmation that "South African photography has (during the past year) gained a nucleus previously lacking": a most damning reflection upon 1907 and earlier. Spain would seem to be in the most deplorable condition of all with regard to amateur enthusiasm, yet strangely enough that country makes a very fair show in the illustrations of the volume. Manuel Mendez Leon is also on the look-out for a nucleus—a fresh one, "leaving behind the worn-out old one." He tells us how he was appointed an agent for an American "photographic exchange" for the circulation of albums, etc.: "Well, after working incessantly for a year, advertising in the paper which I direct, I succeeded in getting two subscribers!!"

So the world wags! We sincerely hope that this highly entertaining book may go out to the four corners of the earth and fire enthusiasms and create nuclei to the betterment of all concerned.

"The Light of Asia." By Sir Edwin Arnold. Illustrated with 32 pictures of Indian scenery by Mrs. Mabel Eardley-Wilmot. London: Kegan Paul, Trench, Trübner, and Co., Ltd. 15s. net.

Here we have an *édition de luxe* of Sir Edwin Arnold's great poem of Buddha, the illustrations to which are of photographic origin—that is to say, from the camera of Mrs. Eardley-Wilmot, who in many instances is happy in her choice and rendering of landscapes. It is hardly to be expected that any photographs of any scenes will do much to heighten the charm of this modern classic, but in so far as the photographs convey a sense of the heat and brilliance of the Indian landscape and of the sublimity of the Himalayan mountain ranges, they help the reader to appreciate better the poetical story of the holy Gautama. The volume is beautifully produced, and the photographic reproductions are in almost every case altogether excellent.

## Dew Apparatus, &c.

Rodenstock's "Heligonal" Anastigmat. Sold by Charles Zimmerman and Co., Ltd., 9 and 10, St. Mary-at-Hill, London.

This is a very rapid anastigmat of fine quality, the specimen submitted to us being No. 5 of 8¼in. focal length and aperture  $f/5$ . On a half-plate this lens behaves admirably, and shows no trace of astigmatism at full aperture. The single combination is also an anastigmat, and works well at an aperture of  $f/12.5$ . The complete combination in the specimen we have tested shows a little spherical aberration at the largest aperture, but this quite disappears at about  $f/6.5$ , at which aperture the lens stands the most critical tests. On a careful test on a small point of light will reveal the aberration which is of a kind not at all likely to affect the sensitive plate. The "Heligonal" is an unsymmetrical doublet, the front combination being composed of two lenses only, while the back one has four. The iris is of metal, and the workmanship and finish are excellent. The price of No. 5 in ordinary mount is £8. A 4¼in. lens suitable for quarter-plate camera works at  $f/5.4$ , and costs only £4—from which it is evident that the "Heligonal" is not overpriced. We may indeed, style it a cheap lens, considering its fine quality and its universal utility.

The Busch "Bis-Telar," Series  $f/7$ . Sold by Emil Busch Optical Company, 35, Charles Street, Hatton Garden, E.C.

The original Bis-Telar, working at a full aperture of  $f/9$ , is well known to our readers, and its usefulness as a long-focus lens requiring only a very short camera extension, is fully appreciated. The new series works at the very useful aperture of  $f/7$ , and therefore is much better adapted than the old one to hand-camera work, so that it can fairly class it as a rapid telephoto lens. The one submitted to us is No. 2 of Series 2, with focal length of 10¼in., and a back focus of only about 5¼in. It is listed to cover a quarter-plate, and appears to do this and more with excellent definition at full aperture. It has often been claimed that 10in. is the ideal focal length for a quarter-plate, but few quarter-plate cameras will extend sufficiently to take such a lens. The Bis-Telar is, however, suited to a quarter-plate camera, by reason of the short extension required for the small bulk, which is no greater than that of an 8in. R.R. lens. The price of the No. 2 is £3 in iris mount, £4 in focussing mount, and £5 8s. in Koilos shutter, the other lenses of the series being equally moderate in cost. We may note that while the old  $f/9$  series



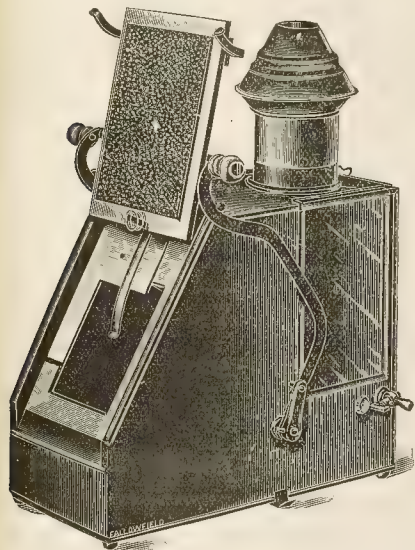
included lenses from 7in. to 14in. focal length, the new one, being at  $f/7$ , includes five lenses varying from 8in. to 22in., the extra extension in each case being about  $\frac{1}{2}$ in. more than half the length.

"Hermagis" Applanastigmat and Telephoto Combination. Sold by F. C. Clarkson, Colchester.

No. 7 Applanastigmat of aperture  $f/6.8$  and focal length 210 mms., about 8 $\frac{1}{2}$ in., has been submitted to us for trial, together with an Hermagis tele-objective, to be used with it. The positive doublet lens is to be symmetrical in construction, and it can be used divided, a single combination giving excellent definition. The complete set is a very fine example of an anastigmat, and ranks with the best that show absolutely no astigmatism at fairly wide angles. On half-plate we can detect no signs of this defect. On throwing the lens a little out of focus the existence of very slight residual traces of spherical aberration can be detected, but nowhere is there any indication of a linear focus. The field is very fairly flat, and altogether the lens is one of a very useful and valuable type, and is extremely well suited to a half-plate camera. On testing the combination with the tele-attachment, at a magnification of  $6\frac{1}{2}$ , a most satisfactory result was obtained, the definition being as good as could be wished for, while the exposure was very short, three seconds on ordinary plate being ample exposure, though the working aperture of the whole combination was  $f/44$ , and the focal length 14in., the total projection of the telephoto combination being 8in.

Rapid Table Bromide Printing Machine. Sold by Jonathan Fallowfield, 146, Charing Cross Road, London, W.

This apparatus the photographer is provided with a most efficient means of printing from negatives of half-plate size and under, and that in an apparatus which requires only table room is operated solely by the worker's two hands. In fact, for actual movements of the apparatus itself only one hand is required, the other serving to feed in the sensitive cards or papers

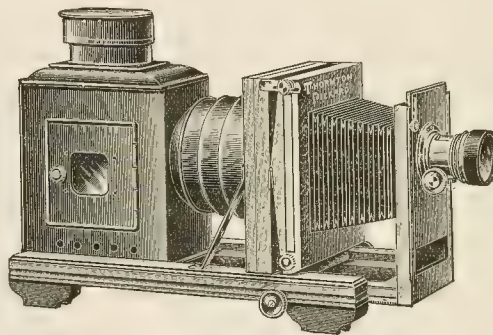


control their removal when exposed. The printer consists of a frame measuring 17 $\frac{1}{2}$ in. by 8in. at its base and standing 22in. to the top of the chimney. It is fitted in one pattern, with both a lamp and an adjustment for gas, the latter being mounted on the side which allows of the gas-burner occupying a central position. Access to this portion of the apparatus is by means of a metal door in the back and a window on each side, which is fitted with glass, and thus enables the lamp to serve also for the illumination of the developing table. The front of the apparatus contains a framework made to carry a half-plate negative, or a carrier in which smaller negatives may be held. This framework is divided by a series of grooves into which a vignetter may be placed in order to produce vignette effects, when necessary. The negative being placed in the frame, the exact subject which it may

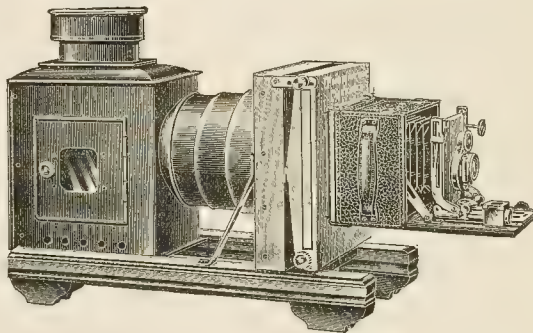
be desired to include in the print is selected by removing the right-angled metal piece seen in the drawing, which, after adjustment, is fixed by a set screw, and thus forms a stop for the card or paper, the latter being thus quickly placed in register upon the negative. A light spring, also seen in the drawing, serves to hold the card in position when the pressure back is fully out, but on this latter being thrown completely up the pressure is released, and the paper falls by its own weight into a suitable receptacle placed to receive it. The operation of printing consists simply in sliding the card or paper under the spring and up to the stop, pressing down the wooden knobs of the handle to the full, at which moment the exposure commences owing to the drop of the orange glass screening the light. Exposure is terminated by raising the handle, and, as before stated, the paper is released by completely throwing up the pressure back. It will thus be seen that the apparatus allows of very rapid taking off of prints from the negative, whilst its working parts are reduced to so few that one may reasonably expect its working for a long period without getting out of order. The price of the printer, either for gas and oil or for electric light, is 52s. 6d.

The Thornton-Pickard "A" Model Enlarger. Made by the Thornton-Pickard Manufacturing Company, Ltd., Altrincham.

In this new introduction of the Thornton-Pickard Co., the base, stage, and front of the enlarger are of polished mahogany, the condenser stage being supported by two heavy brass struts, which give



the much-desired rigidity to this part of the enlarger. The stage is built open, and pivoted centrally, so that it can be tilted in either direction, and thus any distortion in the negative corrected by the use of this movement in conjunction with a similar movement of the easel. The clamp which serves to fix the stage at any desired angle also automatically secures it in the perpendicular position. In addition, a see-saw movement (actuated by rack work) of the base of the negative stage allows of the negative being tilted the other way,



this adjustment being more conveniently made by such tilting than by pinning the paper at an angle upon the easel. Rising and falling front and collapsible triple extension condenser cones are provided. The latter allow the lantern body to be brought towards and away from the condenser, the lantern body itself moving on a mahogany base. One little point is worthy of mention, namely, that the focusing pinion is provided with a head on either side of the enlarger,

and is so adjusted that a forward movement of the head moves the lens forward, and a backward movement draws it back, a synchronism which is on all fours with that universally adopted in field cameras, but not invariably in those used for enlarging. Complete, with 5½in. condenser and enlarging lens fitted with rack and pinion adjustment, iris diaphragm, and orange cap, the price of the outfit is £4.

The second illustration shows the B pattern of the "Ruby" enlarging lantern, in which the user's own camera is employed. It is made in quarter-plate, 5 x 4, and half-plate sizes, at the respective prices of £2 15s., £3 10s., £5 5s. Full particulars of this and the other instruments are contained in the newly issued booklet, "Enlargements and How to Make Them," by the Thornton-Pickard Co., wherein is given a useful introduction to the making of enlargements on bromide paper.

## New Materials, &c.

The "Gladiator Extra-Special Rapid" Plate. Made by Mawson and Swan, Ltd., Mosley Street, Newcastle-on-Tyne.

So far as can be judged from the products which come to our table, the activities of emulsion makers of late have been engaged more particularly with printing papers than with dry plates. At any rate, it is some considerable time since any gelatine plate has been introduced in regard to which claims of a notable character have been made. Messrs. Mawson and Swan, however, are one of the few makers—almost the only ones—who confine themselves solely to the manufacture of dry plates, and therefore it was with more than usual interest that we lately received from them samples of a new plate, the "Gladiator," the introduction of which, we understand, is prompted by the desire to offer photographers the fastest plate obtainable, even in these days of ultra-sensitive gelatine emulsions. In accordance with the makers' usual custom, the plates are issued without a speed marking, but the new product has not been announced until both camera and photometer tests had repeatedly proved the correctness of the claims made on behalf of the plates.

Owing to a variety of circumstances our own tests of the plates had to be made under considerable pressure of other duties, but they were, nevertheless, sufficient to show that in the "Gladiator" the makers have reached a degree of sensitiveness which has certainly surprised us, and will no doubt surprise others who put the new introduction to the test. We took the occasion to employ "Gladiators" for a series of landscape exposures in the rather faint light of a recent afternoon. These, though exposed according to the readings of the Wynne actinometer, using a speed number as high as we have ever adopted, proved in every case to be palpably over-exposed, a convincing, if not perfectly regular, proof of the great speed of the plates. The evening of the same day gave us the opportunity for a test which we had on several occasions made with plates of undoubted ultra-sensitiveness. This was a series of hand-camera exposures of figures close at hand, illuminated only by the arc lighting outside shops in the West End of London. The exposures were one-tenth of a second at  $f/4.5$ , and we were gratified in obtaining negatives which came up readily in the developer, and showed far more detail than we had been able to obtain on ordinary (i.e., non-ortho.) plates under similar conditions. Further camera exposures have showed the extreme sensitiveness of the plates, from which it would appear that the makers, in putting forward the large claims for their product, are not magnifying their own results obtained under test conditions. For both indoor and outdoor photography, for portraiture by artificial light, and for all purposes where a full exposure is needed in the minimum of time, the new plates should certainly rapidly come into favour. They are issued at 1s. per dozen quarter-plates, other sizes in proportion.

"ROTARY" CHRISTMAS POSTCARDS.—The Rotary Photographic Co.'s series of P.O.P., self-toning, gaslight, and bromide cards reach our table. The two latter bear, on the address side, suitable designs and greetings in two colours, whilst in the case of the two former the designs are in one colour, and the cards are sold at the ordinary prices. The gaslight and bromide cards are sold at 10s. 6d. per gross, or 74s. per 1,000. The cards possess the customary good qualities of the Rotary Co.'s manufactures.

PLATE-MARKS, BOARDDOIDS, AND FOLDER PORTRAITS.—Since introduction some time ago of their method of impressing a plate mark on a photographic print by the very simple Leto plate-marker the Leto-Photo Materials Co., Limited, have brought out an outfit simply for the use of professionals, and have thereby placed within easy reach of the portraitist the means of producing prints in a highly effective form. The "Boardoid photography," as the Leto Co. calls it, consists in the use of—

The stout (Boardoid) printing-paper—P.O.P., C.C., self-toning, gaslight, or bromide.

The inexpensive Leto plate-markers, issued in eight sizes, from 3½in. by 2½in. to 8½in. by 4½in.

The cover mounts of dark art brown complete, with tissue protector for the photograph.

Thus there is first of all no departure as regards printing save that a Boardoid paper is used, and the negative is masked in printing, so that the portrait appears with a clear margin; secondly, the plate-mark is impressed on the print quickly, and by aid of ordinary copying or dry-mounting press; and lastly, there is no mounting; the prints are touched at one edge with adhesive and fitted in their folders.

The effect of the finished print produced in this way is handsome and extreme. The dark brown of the folder goes particularly well with the tones of the P.O.P., collodion, or self-toning paper, as with the toned bromide or gaslight print. There is a style about the print, an air of expensiveness in the tissue protector, which should enable the photographer to secure a good price for it. Both "vertical and horizontal shapes," a portrait looks somewhat recherché, whilst as for production there is nothing for photographic assistants to learn.

A special offer is made by the Leto Co. in thus first introducing outfits to the profession. On receipt of trade card and a coupon, which is published this week in our advertisement pages, the company will send an outfit of plate-marker, masks, cover mounts, and Boardoid for work in 8in. by 5in. size for the reduced figure of 2s. 6d., the outfit being that usually sold at 4s. 6d. Application should be made immediately to 3, Rangoon Street, London, E.C., and the circular prices of Boardoid papers, plate-markers, and folders obtained at same time.

CHRISTMAS BUSINESS.—Last year Messrs. Walter Pearce and St. George's Press, Brentford, W., issued the booklet, "What Shall I Give?" the use of which by photographers who desired to buy the suitability of portraits for Christmas presents before their customers met with much success—as we happen to know from several of our readers. Even more tasteful in appearance is this year's booklet, "The Choice of a Gift," a piece of printing the like of which the photographer cannot obtain from a local printer. It is a prospectus of blue-grey and blue, and tactfully, yet forcibly puts the case for the photograph as a Christmas gift, the photographer's announcements and illustration supplementing this preface. Messrs. Pearce can supply quickly on receipt of order and copy, and they can also offer copies of the 1907 booklet at a reduced price. In this instance the booklet is supplied by them only to one studio in the district, a guarantee to their customers that the booklet will not be sent out by a competing photographer. Our views of the business value of a piece of really elegant stationery have been expressed before, and over again, and considering the moderate prices at which St. George's Press offer their work, the photographer cannot better than place himself in their hands.

THE HALIFAX PHOTOGRAPHIC Co. advise us that the Greeting series of Lilywhite prize postcards, with the usual emulsions, are now ready. Designs will be sent on application.

POSTCARDS.—Messrs. Droege and Co., 43, Comeragh Road, Vauxhall, Kensington, London, W., send us specimens of the printed bromide cards made by them (for photographers) of P.O.P. tones, either brown or purple. Both descriptions of card present a very effective result, and Messrs. Droege and Co., who execute this work at a moderate rate, guarantee despatch in three days.

CRIPPLEGATE PHOTOGRAPHIC SOCIETY.—In connection with the "one man" shows which are to be a feature of this season, arrangements have been made with E. O. Hoppé, F.R.P.S., to exhibit a few (about 15 or 20) of his pictures in the Lecture Room on November 9, at 7 o'clock p.m. Mr. C. W. Coe will also give a lecture on "Exposure and Development for the Subject."



## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

FRIDAY, OCTOBER 30:

Forester Camera Club. "On the Printing, Developing and Toning of Velox Papers." W. F. Slater.

MONDAY, NOVEMBER 2.

Salvern Camera Club. "On the Printing, Developing and Toning of Velox Papers." W. F. Slater.  
South London Photographic Society. "The Right Way in Photography." Messrs. Burroughs, Wellcome & Co.  
Safford Photographic Society. "Exhibition of Thornton-Pickard Prize Slides and Apparatus." R. Hesketh.  
Southampton Camera Club. "Intensification and Reduction." C. M. Cooper.  
Sudley, Farsley, Calverley, and Bramley Photographic Society. "Figure Studies." W. Cohen.  
Safford Photographic Society. "Enlarged Negatives on Paper." Herbert A. E. Hey.  
Telford and Forest Hill Photographic Society. "Lantern Slides." Demonstration.  
St. Albans and District Photographic Society. "View Books." M. Tomkinson.  
Manchester Photographic Society. L. and C.P. Union Lantern Slides.

TUESDAY, NOVEMBER 3.

Weymouth Photographic Society. "The Photography of Sport." Illustrated with lantern slides. Adolphe Abrahams.  
Leamington and District Camera Club. "Design in Picture Making." Walter Barnes.  
Birmingham Photographic Society. "On the Printing, Developing and Toning of Velox Papers." W. F. Slater.  
Weymouth Photographic Society, Y.M.C.A. "Chemicals Used in Photography." W. F. Malikin.  
Walsley Photographic Society. "Walks and Climbs in Switzerland." Percy Lund.  
Suffolk Camera Club. Exhibition of Colour Photography.  
Weymouth and District Literary and Scientific Society. "Home Portraits." Illustrated. P. R. Salmon.

WEDNESDAY, NOVEMBER 4.

Wimbledon Park Photographic Society. "Bromide Enlarging." H. P. Johnson.  
Weymouth Camera Club. Lantern Evening.  
Middlesex Photographic Society. Lantern Slide Competition.  
Suffolk Photo Club. "On the Printing, Developing and Toning of Velox Papers." W. F. Slater.  
Walsley Suburban Photographic Society. "Novel Lighting Effects." H. Essen.  
Weymouth Polytechnic Society. "Holland Pictorially Portrayed." Rev. H. O. Fenton.  
Weymouth Photographic Society. "Slide Making Under Difficulties." Ramsay Traquair.  
Weymouth School of Photo-Engraving, Bolt-Court. A Lecture. Will Rothenstein.  
Weymouth Camera Club. "A Tour Round an Old Garden." Alex. Keighley, F.R.P.S.

THURSDAY, NOVEMBER 5.

Weymouth Photographic Association. "Evolution of a Picture or Art in Photography." Illustrated. George L. A. Blair.  
Weymouth Photographic Society. "On the Printing, Developing and Toning of Velox Papers." W. F. Slater.  
Weymouth Amateur Camera Club. Competition Prints and Lantern Slides.  
Weymouth Amateur Photographic Association. "Lantern Slide Making." Fred. J. Tryhorn.  
Weymouth and District Camera Club. "Orthochromatic Photography." T. W. Derington.

THE CORNISH CAMERA CLUB, Penzance, have elected Mr. R. Pearce, president; Messrs. H. Bradbury, Percy Holman, and A. G. , council; Mr. H. Trembath, treasurer; Mr. H. Stewart, secretary; and Mr. F. Richardson, assistant secretary.

SOUTHAMPTON CAMERA CLUB.—The members of the Southampton Camera Club gathered in goodly numbers on Monday night at the headquarters, on the occasion of the lecture by Mr. Arthur Marshall, F.R.P.S., the lecturer, who had spent the day judging the exhibition of the club, and is one of the most eagerly looked for contributors to the winter programme of the club. On previous occasions Mr. Marshall had taken the members under his wing, and means of his camera to Continental centres, his Spanish pictures Dutch scenes having provided contrast with those of Italy and where. On this occasion Mr. Marshall introduced the members to the Northern Coast of Ireland, and enabled them by means of photographs taken on an extensive motor tour to realise some of the beauties of the Emerald Isle. Evidently the lecturer had made up his mind to exhaust the possibilities of that little known region—the beautiful country which is washed by the Atlantic rollers, for no Irish scenery or of Irish character was missing from his repertoire. The rolling main and the granite-strewn plain gave way to the quaintest little village and the country town, the

wonderful coast scenery and the romantic old ruins, the cathedrals and old-world churches, the monoliths and crosses, all came into the progress made by the distance-covering car, while the fund of dry humour possessed by Mr. Marshall enabled him to bring into life the specimens of Gaelic peasantry who figured on the screen by the way of the slides. Naturally, when Mr. Marshall appears the best of all possible work is expected to be shown on the screen, and there was a most definite opinion expressed that no previous sets of slides shown by the Nottingham artist quite compared with those of the lecture. The magnificent landscapes and extraordinary figure studies, the cloud and atmospheric effects, all told of the master man behind the camera, and the audience were all too soon made to realise that motor tours have at last an ending. Mr. Marshall was most heartily thanked at the conclusion.

LEEDS PHOTOGRAPHIC SOCIETY.—A lecture and demonstration of more than ordinary interest was presented to the members on October 20 at the Leeds Institute by Mr. Thomas K. Grant, of London, upon "The New Autochrome Plate." Mr. Grant gave a very careful demonstration, explaining where mistakes are most likely to be made, and their remedy. The demonstration was followed by a series of lantern slides showing the results of the plate in actual work, and these produced something like a sensation among the audience. The slides were beautiful beyond all words. A formal vote of thanks, in a neat little speech by Mr. F. W. Branson, F.I.C., and seconded at some length by Professor Harold Wager, who stated that a great scientific result had been achieved, was carried with acclamation. A special lantern and new unifocal lens, kindly lent by Mr. F. W. Branson, and the skilful manipulation of the lantern by Mr. A. A. Pearson and Mr. A. Atkinson, contributed in no small degree to the success of the demonstration.

## Commercial & Legal Intelligence.

CHARGE OF THEFT.—At the Hastings Borough Bench last week Thomas Styles was charged with stealing 68 photographic negatives, 119 photographs, and six mounts, together value £4 17s. 6d., the property of D'Jornette Plummer, 56, Western Road, Brighton, between April 20 and June 20.

Prosecutor said the accused had been employed by him in a studio at 28, White Rock, Hastings. The business was sold in June, but prisoner continued with the new proprietor. On Monday, witness went to 3, Pelham Arcade, where prisoner had recently opened a business, and saw displayed in the window photographs belonging to witness. He returned later with Detective-Sergeant Chantler, and they found photographs marked "R. A. P." (the name of his firm), and others marked "Plummer."

Mrs. Ellen Hilder, formerly manageress for the prosecutor, identified all the photographs and other goods produced as the property of the prosecutor or the new proprietor, with the exception of two, which she gave to prisoner. Prisoner had purchased mounts from her amounting to about a dozen in all. Prisoner had the key of the premises once or twice in busy times.

Henry Harcourt Verden, of 11, Goldsmid Road, Brighton, purchaser of the White Rock business, identified sixty-seven photographs produced as belonging to him, and put their value at £2. Witness did not know to whom the negatives belonged.

Detective-Sergeant Chantler stated that on the way to the station after his arrest prisoner said: "There were only a few old postcards that belonged to him. He said he would crush me, and this is what he has done."

Prisoner pleaded not guilty, and was ordered to take his trial at the Quarter Sessions, bail being allowed in one surety of £50, and one other of £50.

BRITTON BANKRUPTCY.—The affairs of Walter William Powell, photographer, late of 414, Brixton Road, S.W., came before a meeting of creditors on October 21, at the London Bankruptcy Court. Mr. Walter Boyle, Assistant Receiver, presided. The Chairman reported that the debtor began the business in March, 1897, with practically no capital, and continued trading under the style of Rupert Leighton until August, 1907. His trade had varied from

£300 to 700 per annum. He agreed to pay £100 a year as rent of the premises, and he hired the fittings, etc., at a charge of 30s. a week. He expended money on the premises, but got into arrears with the rent, and he eventually closed the business. The landlord had re-entered the premises, and had seized the goods there. They were worth about £80, but the sum of £385 was due for rent. At that time he was being pressed by other creditors, and since August, 1907, he had had no regular business. The debtor, who attributed his failure to heavy expenses and bad trade, had filed a statement of affairs showing ranking liabilities £534 13s. 6d., the only available asset being book debts of £12 7s. 8d.

There was no offer of composition before the meeting, and it was stated that an order of adjudication had already been obtained. The case was a summary one, and remained—no resolution being passed—in the hands of the Official Receiver as trustee for administration. Creditors: W. H. Tuck, Cheltenham, £300; Kodak, Ltd., London, £10; Arnott and Co., Leeds, £10.

**A LEEDS BANKRUPTCY.**—Henry Morton Pearce, of 101, Roundhay Road, photographer, carrying on business in the County Arcade as Morton's Star Photo Company, appeared last week in the Leeds Bankruptcy Court. The liabilities were £448, and the deficiency was £389, and the bankrupt said his failure was due to bad trade and heavy rent. He had had numerous temporary shops, but had permanent places of business at Douglas, Leeds, and Sterling. In looking after these he had incurred heavy travelling expenses. The examination was closed.

**LEGAL NOTICES.**—Notices of intended dividends have been given in the cases of Joseph Edmund Bramwell, 38, Beechville Avenue, and lately carrying on business at 124, Westborough, Scarborough, Yorkshire, as a photographer, and Mrs. Mary Ann Osguthorpe, Falconers Road, Scarborough, photographer. The last day for receiving proofs by the Official Receiver (Mr. Donald Sween Mackay, 48, Westborough, Scarborough) is November 11.

A first or final dividend of 2s. 1d. in the £ has been paid to the creditors of Scott Stanley Meale, photographer, Coltishall, Norfolk.

## News and Notes.

**A PHOTOGRAPHIC SOCIETY FOR FOLKESTONE.**—Steps are being taken to test the feeling in Folkestone with regard to the formation of a photographic society. The opinion has been expressed that there is room for a photographic society, and that a good way of inaugurating it would be to hold an exhibition (at which prizes would be offered) at the Town Hall. The matter is in the hands of Mr. Geo. H. Sheaff, Priory Dene, Julian Road, Folkestone, to whom letters or suggestions should be sent.

**"WESTMINSTER" ARC LAMPS.**—In addition to the awards at the Franco-British Exhibition given in our last issue, a diploma for gold medal has been given to the Westminster Engineering Co., Ltd., for their electric arc lamp. Their "Westminster" enclosed type lamp is well known to photographers, and is largely used for portraiture and printing, and also for black-and-white, process, and three-colour work. The Westminster Co. write us that they are always very pleased to show the lamps and give full particulars to any one calling at their works, Victoria Road, Willesden Junction.

**DEATH OF MR. SAVILLE KENT.**—We regret to record that the death of Mr. Saville Kent took place on October 11. Mr. Kent was one of our best-known naturalists, and though perhaps not so widely known in photographic circles as many a man of far slighter claims to recognition, was also one of our most able natural history photographers and three-colour workers. The deceased gentleman spent a large part of his time abroad, and at home was never an exhibitor of his work, though his lectures on the scenes and scientific results of his travels will be remembered with pleasure by many. While engaged in 1893 as Commissioner of Fisheries to the Government of Western Australia, Mr. Saville-Kent sent to London a large collection of the stony corals peculiar to the Australian coast-line. These specimens, added to the extensive series indigenous to the northern and eastern districts of Australia previously contributed by him to

the Natural History Museum, constitute the most complete collection of Australian Madreporaria yet brought together. We understand that in recent years Mr. Saville-Kent's attention was given to artificial cultivation of pearls in the large pearl-oyster.

**THE PHOTOGRAPHER IN MUNICIPAL LIFE.**—Bexhill-on-Sea is in the throes of an election. For the seventh year (according to the "Daily Mail") the acting Mayor, Mr. James Glover, who provides the local amusements, is a candidate for the principal ward, his opponent being Mr. Hicks, a local photographer. Mr. Hicks has issued as his poster

VOTE FOR HICKS  
AND MORE ENTERTAINMENTS.

To which Mr. Glover has issued the good-humoured counterblast

VOTE FOR GLOVER  
AND MORE PHOTOGRAPHERS.

**CRIMINAL FACES.**—A daily paper reports that in an address last week at the opening meeting of the session of the Ethnological Society on the right method of dealing with crime and criminals, Sir Robert Anderson, late Chief of the Criminal Investigation Department, Scotland Yard, referring to the so-called criminal type of face, said that on one occasion when Max Nordau visited him he put before him two photographs which were so covered that only the faces were visible. One was that of Dr. Temple, the then Archbishop of Canterbury, and the other that of Raymond, the prince of criminals of his time. The Archbishop's face, said Sir Robert, when in repose had an expression which might almost be termed sinister. Raymond had a remarkably kindly, intelligent face. Max Nordau, who told that one of the two photographs was that of a prominent English public man, would not express any opinion as to the types.

**HACKNEY PHOTOGRAPHIC SOCIETY.**—The following lectures, &c. will be given during the Hackney Society's Exhibition:—Wednesday, November 4: 7.30, Opening by the Mayor and Mayoress of Hackney; 8.30, Concert; 9.30, Lantern lecture, "By the Severn Sea," A. Linford, B.Sc. Thursday, November 5: 7.30, Concert; 9.30, Lantern lecture, "In the Moselle Valley," W. L. F. Wastell, F.R.P.S. Friday, November 6: 7.30, Concert; 9.30, Lantern lecture, "On the Thames" (Autochrome slides), J. McIntosh, F.R.P.S. Saturday, November 7 (Exhibition open at 1 p.m.): 7 p.m., Concert; 9 p.m., Distribution of awards; 9.30, The competition slides.

**M. MAURICE MEYS, of Boulogne-sur-Mer, whose exhibits of Autochrome transparencies at the recent exhibition of the Society of Colour Photographers will probably be remembered by many of our readers, is announced to deliver a lecture on colour photography at the Grafton Gallery, Grafton Street, W., on October 31, at 3.30 p.m. M. Meys has made a special study of the Autochrome plate, and lecture should, therefore, prove of considerable interest to workers in this branch of colour photography.**

**CINEMATOPHONES IN SOUTHERN RUSSIA.**—Exhibitions of cinematograph pictures have become an established type of entertainment in the Crimea. Kieff, says the British Consul in his annual report of the trade of that town for 1907, and there are now from twelve to fifteen "theatres," where from six to seven performances, each of an hour's duration, are given daily. The supply of films comes from Paris, although many pictures depict scenes in the United Kingdom.

**EXHIBITION OF COPPER PANELS.**—Messrs. Panels, Limited, of Darnley Street, Birkenhead, are now holding an exhibition of specimens of their new method of reproducing prints and pictures in the form of copper panels, at the Manchester Hotel, Aldersgate Street, London, E.C. The panels can be made of almost any size up to 12 in. long by 3 ft. wide, and are suitable for the decoration of hotels, public buildings, ships, or private houses. The exhibition, which opens on October 27, may be visited daily between the hours of 11 a.m. and 7 p.m., till November 7.

**ABERDEEN PHOTO ART CLUB.**—"Bromoil" was the subject of a demonstration given before the members of the Aberdeen Photo Club last week by Mr. William Mackay. Mr. James T. Jeffrey presided and introduced the lecturer, who in a very able and instructive manner explained the process, the theory, and the advantages and difficulties. He showed by the practical side how the maximum amount of control could be got by this process, which although it is to the question of pure photography, has as its start a photographic basis.



## Correspondence.

We do not undertake responsibility for the opinions expressed by our correspondents.

Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

### A CAUTION.

To the Editors.

Gentlemen,—In your "Situations Vacant" column of last week there is an advertisement from St. John's, Newfoundland, for a lady retoucher, stating that board can be obtained for £1 15s. per month. I don't know what sort of board it can be at this price.

My experience has been that it is impossible to get board in St. John's under \$20 per month. I have lived in St. John's, Newfoundland, for over thirty years, and ought to know something about the place. A young lady in a strange country wouldn't feel very satisfied with the salary offered after she had found out the facts as to the cost of living.—Yours faithfully,

W. PARSONS.

147, North End, Croydon.

October 26, 1908.

## LANTERN SLIDES AND BROMIDE PRINTS DIRECT IN THE CAMERA BY REVERSAL.

To the Editors.

Gentlemen,—There seems one point in Mr. Carnegie's experiments which he has evidently overlooked or not given sufficient consideration—viz., that if the exposure has been through the glass, as in the Autochrome plate, the reversal is easier and more complete, the image being on top of the film; whereas, in ordinary exposure, by contact or through the camera, film to lens, the image is at the bottom, that is, nearest the glass, and if Mr. Carnegie will try a lantern plate of almost any make, exposing in the camera, glass to lens, he will find reversal with potass permanganate or persulphate of ammonium, nearly, but not quite, as successful as with an Autochrome plate.

The cause of this comparatively easy reversal of the Autochrome is this: A plate exposed through a colour filter is much easier of reversal than one exposed without a filter. I found by experiment that an Ilford lantern plate, exposed through an orange-red filter, with reversed exposure, was easily reversed without veil, whereas a plate exposed without, showed on reversal a great amount of veil. I therefore came to the conclusion that the colour filter plays an important part in the successful reversal of a plate.

Perhaps I may mention a method I practised years ago for producing reversed negatives. It gave very satisfactory results, provided the negative was a plucky one. An Ilford lantern plate was exposed by contact with a negative in the printing frame. It was developed in the usual way with hydroquinone, and when fully out exposed to white light, and development continued until the positive was converted into a negative, the veil being afterwards removed by a weak hypo and ferricyanide reducer.—Yours truly,

Thornton Heath,

E. FENSKE.

October 24, 1908.

LANCASTER PHOTOGRAPHIC SOCIETY.—The annual exhibition will be held at the Friends' Hall, Fenton Street, from November 23 to 26, inclusive. In the open classes silver and bronze plaques will be placed at the disposal of the judge, Mr. Tulloch Cheyne, for award. All pictures and slides will be submitted to a selection committee, who reserve the right to select the best work in the case of limited space. All entries, however, will pass before the judge. Loan exhibits, for which no fees are payable, are also invited. Entry forms, duly filled in and accompanied by entry fees, must reach Mr. J. Holt, 11, Fern Bank, Lancaster, not later than November 14, the latest date for receiving pictures being November 18. Entry forms and full particulars may be obtained from the Secretaries, Mr. J. Holt, 11, Fern Bank, and Mr. W. Gorst, 23, Market Street, Lancaster.

## Answers to Correspondents.

\* All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.

\* Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.

\* Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., 24, Wellington Street, Strand, London, W.C.

\* For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.

### PHOTOGRAPHS REGISTERED:—

H. S. Franks, 60, Strand, London, W.C. Four Photographs of a Draped Figure. G. H. Beckworth, 42, New Park Road, Salford. Photograph entitled: "A Freak of Nature."

H. W. West, The Hollies, Birmingham Road, Kidderminster. Photograph of the Pulpit in St. Mary and All Saints Parish Church, Kidderminster, and Photograph of the Altar.

T. S. Wilson, 541, Lincoln Road, Peterborough. Photograph of the Interior of St. Paul's Church, Peterborough.

H. C. Turner, 46, James Street, Harrogate, Yorkshire. Two Photographs of Captain A. Boyd-Carpenter.

LANTERN-SLIDE TRANSFERS.—Could you please do me a favour by letting me know what firm could supply me with transfers for making lantern slides?—ALLEN BERRESFORD.

Messrs. W. Butcher and Sons, Ltd., Camera House, Farringdon Avenue, London, E.C.

CRYSTOLEUM.—Can you inform me, through the columns of your journal (1), whether there is now any agent for the crystoleum process who either sells the materials, or (2) executes paintings in the process? (3) I believe the "Alstona" Company had a similar process, but cannot find its address or whether it still exists.—AQUARIUS.

1 and 3. We believe the "Alstona" Company is still at 36, Albemarle Street, W. 2. We know of none, but we imagine a small advertisement under "Miscellaneous Trades" would put you in communication with those doing such work.

NO-COCKLE.—We are not aware that formulæ for this solution are published. We have no experience of them, and we believe the preparation is a secret.

C. WILLIAMS.—We are sorry we can only refer you to the colours sold specially for the purpose. We do not know what is the composition of the medium in question.

ALBUMEN PROCESS.—With reference to your article on "Fineness of Grain and Micro-photography" in "B.J." of October 16 last with regard to working the albumen process, I should be most grateful if you would inform me if certain back numbers of "B.J." for the year 1902 or 1903 are obtainable, which, I understand, contain full working instructions for working the albumen process by the modern method, a *résumé* of which can be found in the "Année Photographique, 1903," under the signature of L. P. Clerc, said to be translated from the original English articles; but I should certainly prefer the original working instructions.—EXCELSIOR.

We think the articles to which you refer are those on "The Albumen Process in Practice," which appeared in our issue of April 3 and 24, 1903.

ETHELBERT.—We can best advise you to study the advertisements in our pages, from which you will see that retouching is almost always required, except from operators of the best order, and they should have been through it. If you have a situation at present we advise you to keep it.

PRESS PHOTOGRAPHY.—Can you advise me the best way to get subjects in the Press at home and abroad? Is there any society that accepts subjects and sends them to the most likely papers for publication, or would you advise sending or taking them direct to

the publishers? As I live within 50 miles of London, if you can give me a few hints as to Press work they will be much appreciated?—PRESS INQUIRY.

We advise you to get "Photography for the Press" (Dawbarn and Ward, ls.). The Illustrations Bureau, 12, Whitefriars Street, E.C., is in a position to offer your work in all directions. You had better write them.

**SLIDE-MAKER.**—The process was given as described in a contemporary. We have not the original publication by us, but we suggest that a better process is to employ gold toning on a slide developed to a warm brown colour. If you address the Ilford Co. they can refer you to their instructions for this process in connection with the use of their "Alpha" plates.

**STAIN AFTER INTENSIFICATION.**—I should be grateful if your ever useful query column would assist me in the following:—I intensified a negative with mercury and ammonia, but as the white clothing was too dense I put hypo on it, but, being in a hurry, used it very strong. This has caused a brown stain, and the resulting print is patchy. How can I get over the brown stain? If I dyed the negative a yellow colour would that do?—BROWN STAIN.

We do not think you can do anything to remedy this state of affairs. The ammonia and hypo between them have probably taken out all the silver, so there is nothing but a mercury image left. The stains may, however, be due to incomplete action of the hypo, in which case a second bleaching, again followed by hypo, might remove them. If this fails, you might try staining, but we doubt if it will be any good. Retouching would probably be the best and safest expedient.

**DEVELOPER.**—Please say if I can make a stock solution of No. 1 "Imperial Standard" developer, and if so, how much metol, metabisulphite, bromide, and water I would add to ½oz. pyrogallol acid, so as to have a stock solution, of which I would take, say, 3oz. to water 20oz.?—J. A. C.

In order to retain the proportion between the various chemicals you require to take as follows:—Pyro ½oz. (equals 220 grs), metol 180 grs., metabisulphite 480 grs., bromide 80 grs.: in other words a solution of four times the normal strength if 20oz. of water are used. As we gather that you require a solution about seven times (20 divided by 3) the normal strength, you require to use only 12oz. of water, but we fear that you will find it impossible to make a solution of this strength.

**SPECIAL PUTTY.**—Will you kindly let me know the address of the firm who sell a special sort of putty for studio roofs? I cut the address out, but cannot now find same.—PUTTY.

Carson and Sons, Grove Works, Lombard Road, Battersea, S.W., whose paints are so well known, make the putty about which you inquire. Any of the oilmen will procure it to order if they do not keep it in stock.

**GELATINE RELIEFS.**—I use Nelson's gelatine with bichromate of potash, but I cannot get the intaglio or the raised block high enough or low enough for what I want. I have gone through Pretsch process, Placet's, Woodbury's, Foxlee's, Michaud's, Poitevin's Autotype, Swan's, Sutton's, and the Meisenbach, given in the "Photographic Almanac," 1893. Is there anything else I could mix with the gelatine, such as gum or glue, to get my depth or raised block higher still. I run plaster casts of them?—S. WOOLY.

Your trouble may be due to more than one cause. It may be brought about by the bichromate film being dried too slowly, so that it has to a great extent lost its property of absorbing water and swelling up. No addition to the gelatine is necessary. The trouble may, and probably does, arise from the employment of unsuitable negatives. Unless they are very vigorous and strong, it will be impossible to get very high relief in the gelatine. See the article on another page.

**STUDIO QUERIES.**—1. I wish to know the most suitable tank developer for studio purposes chiefly. I am also puzzled about a new studio I am going to build. I have several books on the subject, but they all differ. 2. Suppose I have a studio 14ft. wide and as long as I like, say 30ft., what length would you have the glass side, 10ft. or more? Robinson says the whole length, but

that, I think, is not necessary. 3. The studio is 14ft. wide. It is necessary to carry the glass more than 7ft. across? This is a very common way, but the sun is so nearly vertical that it would shine in for a very long time.—W. T. H.

1. The following is given as a good tank developer for studio work: Pyrogallol acid 20 grains, sodium sulphite 120 grains, potassium metabisulphite 130 grains, sodium carbonate 240 grains, water 40 ounces. 2. We should prefer to have 12ft. of glass at the side—that will be quite sufficient. 3. Seven feet will do very well. Both designs are good, but in your case we should advise the one shown in the first sketch to that of the second.

**H. J. CHARMAN.**—Better apply to the exhibitor, Mr. C. P. Butler, Solar Physics Laboratory, South Kensington.

**E. D. F. B.**—We can tell you that neither workers pin their faith to the particular scheme. No details of their regular practice are available, probably because they have no precise method.

**A NURSE'S ORDER.**—Some months ago I received an order for a number of cabinet reprints from the nurse of some children whose portraits I had taken, and requesting that the photographs, with the account, should be addressed to the father of the children. I did so, but up to the present, although I have made repeated applications for payment, I have not received any reply. What I should like to know is, who is responsible for the debt, the nurse who ordered the photographs, or the father to whom they were sent, supposing that parent existed, for I have never seen him myself, the previous orders having been paid for at the studio by the nurse? They have since removed from here, so I presume I should have to take out a summons in the district where they now reside.—DOUBTFUL.

We are afraid that we are not clear as to the circumstances. If the nurse gave the order and was responsible for payment in the first instance, she is responsible now; but if the father was your customer in the first instance, you had no right to supply copies to the nurse except with the permission of the father. I should surmise that it is the father who is ordering in each case, but in the absence of a distinct understanding to this effect, I do not see that you can do anything.

**POSTCARD RIGHTS.**—A few months back I sold a firm in the town a set of views, with permission to reproduce on certain styles of postcards. Lately I have been requested to supply some more prints of these same subjects, as they tell me that some of the ones they had earlier have got damaged, and cannot be used again, and they want to make the set complete to enable them to publish another series of a different kind. Now, as I did sell them originally the sole right, but only permission to reproduce on a certain style of card, am I entitled to another fee for each of the views for this new series? My own opinion is that I am, but I should like your opinion on the point. I have always understood that when a fee is paid for permission to reproduce when the purpose it is wanted for has been served, that the fee transaction, and if the view is wanted again another fee should be charged.—QUERY.

Certainly, you are at liberty to grant right to reproduce the way you describe, and the firm should abide by the agreement.

**\*\* NOTICE TO ADVERTISERS.**—Blocks and copy are received subject to the approval of the Publishers, and advertisements are inserted absolutely without condition, expressed or implied, as to what appears in the text portion of the paper.

## The British Journal of Photography

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### SUMMARY.

Dr. E. König communicates a practical article on the making of stereoscopic "anaglyphs" similar to those of Du Hauron, but employing the pinatype process in conjunction with two new dyes, complementary to each other, just worked out in the Hoechst works. (P. 848.)

At Birmingham last week the Deputy-Stipendiary dismissed an action brought by an ex-soldier for the return of £20 said to have been deposited by him with a photo-printing company as surety when taking a situation as collector. The defence was that the £20 was premium for teaching the business, but the magistrate's clerk remarked that it was "a lot of money to pay for rather trifling teaching." (P. 857.)

A recent paper by Mr. A. J. Bull shows the remarkable differences in the various grains, regular and irregular, employed in photo-mechanical printing. (P. 850.)

The most recent particulars of the now largely used thiomolybdate method of toning are contained in the patent specification which appears, with other "Patent News," on page 855.

Those who have need to bring solutions up to a working temperature may find the memory rule given in the article on page 847 service to them.

### "COLOUR PHOTOGRAPHY" SUPPLEMENT.

Dr. J. H. Smith has further examined a number of natural oils and compounds occurring in them, and has classified them as sensitizers and de-sensitisers for the bleach-out colour process. (P. 81.) Pure xylol is advised by Dr. W. Scheffer as the best reagent for the removal of the complete Autochrome film from its glass support. (P. 87.)

Baron von Hübl, in discussing the properties of the Autochrome plate in relation to the reproduction of one Autochrome from another, concludes that the want of "saturation" in colours is the chief difficulty in the way of a perfectly satisfactory reproduction. Radiation phenomena may also occur. (P. 82.)

Dr. R. Luther, in some notes on the use of the Autochrome in stereoscopic photography, gives rules for trimming after cutting separate pictures, and also raises the question of the possibility of colour errors due to parallax when using a wide-angle lens. (P. 85.)

The Society of Colour Photographers, at its annual meeting last week, had a satisfactory report and balance-sheet presented to it. (P. 88.)

M. Meys, on Saturday last, delivered a lecture, before the Anglo-French Association in London, illustrated with much of his Autochrome work. (P. 88.)

### EX CATHEDRA.

#### The Traill-Taylor Memorial Lecture.

The eleventh Traill-Taylor lecture will be given by Dr. E. Wandersleb, of the scientific staff of Carl Zeiss, at 66, Russell Square, on Tuesday, November 17, at 8 p.m., and the subject will be "The Regulation of the Rays in a Lens System." We may assume that this title will cover the description of the action of a lens from the most modern German points of view, and as these points of view are very little understood in this country, the lecture may be looked upon as one of very great importance. The German method of considering how a lens acts is widely different from the usual English method and is far simpler. For expository purposes it is ideal, and those to whom optics, as usually taught, is one of the most obscure sciences can very quickly grasp all the essential facts. The more modern method is, of course, derived from the theories laid down by Professor Abbe, which no one can be better qualified to expound than Dr. Wandersleb. This will certainly prove to be a most important lecture of the series, and may be expected to attract a large audience. Admission is free by ticket obtainable on application to Mr. J. McIntosh, 66, Russell Square, W.C.

\* \* \*

#### "Ausführlich Angegeben."

The sentiments which inspired the two joint monarchs of the kingdom of Barataria to sing of the "satisfying feeling that their duty had been done," very similarly convey a sense of gratification to editors who find their aims understood and appreciated abroad as well as at home. And an expression of such appreciation perhaps comes more frequently from the Continent than from the phlegmatic Englishman. This fit of self-congratulation, we would explain, is induced by the arrival on our table of the current issue of Dr. Eder's "Jahrbuch," the annual of photography which does for scientific and technical Germany what the "B.J. Almanac" in a more popular way does for less scientifically disposed readers in the English-speaking countries. Dr. Eder, in his quotations from the contemporary press, constantly uses the phrase at the head of this article in regard to the articles in the "British Journal of Photography," and a glance through his pages justifies the present claim of the "B.J." to "deal in detail" with the current progress in photography—a claim which is not exaggerated in the phrase coined as an advertisement headline: "The journal with the reading in it."

\* \* \*

#### The Camera and Lost Umbrellas.

We learn that photography has been put to a new use at Exeter. A photograph was recently taken of a number of umbrellas which careless passengers had left behind in the tramcars.

The umbrellas were ranged singly in a large shed at the tramway depot, and came out with great clearness. This photograph was reproduced and published, surmounted by the invitation to the public, "Do you recognise your own?" As a direct result of this pictorial effort, a large number of the umbrellas have been returned to the rightful owners. The tramway officials had in hand a stock of 150 of these lost articles before taking this means of rapid restitution.

\* \* \*

#### Another Cinematograph Catastrophe.

Unfortunately we have to record another cinematograph catastrophe, which happened at Lille, in France. On Sunday evening a large audience, mostly composed of children, had crowded into one of the numerous cinematograph establishments in the town. While the entertainment was in progress, some unprotected films caught fire, filling the hall with thick smoke and flames. A fearful panic resulted, and though these places are under strict police supervision, and the proprietors compelled to provide several emergency exits, these latter proved wholly inadequate. The cries of the children were heartrending, many of them being trampled and so badly crushed that it is feared some of them will never recover. It is to be regretted that such painful incidents as these are not infrequent occurrences. They inspire the general public with fear for what has proved itself not only an interesting, but also an educative entertainment, with all possible precautions. The use of material such as celluloid is bound to give rise to occasional conflagrations, and it is to be hoped that it will not be long before cinematographists are in possession of a non-inflammable film.

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#### The Permanent Commission of the Congress of Photography.

M. E. Wallon, on behalf of the permanent commission of the Congress of Photography, which has its headquarters in Paris, has addressed to the president of the Association Belge the suggestion that the Congress should hold its 1910 meeting at Brussels at the time of the International Exhibition, which will be held in the Belgian capital in that year. M. Wallon suggests that in this way photography would be represented in the Exhibition, and that, as at the previous meeting held at Liège, the question of photographic science, practice, and art might be discussed at the Congress, particularly in regard to the employment of photography for documentary and record purposes. Such applications as these, it may be interpolated, are discussed with particular fitness at Brussels in view of the work of this nature carried by the Institut Bibliographique et Photo-

graphique. It is the intention to divide the sittings the course into three sections: one to discuss theoretical and scientific questions, standards, etc.; another, matter of photographic practice and art; and a third, the employment of photography in record and bibliographic work, and it is hoped that the Association Belge and its president, Captain van Bever, both of whom were largely responsible for the success of the Brussels Photographic Congress of the United Kingdom, will lend their aid to the suggested Congress of 1910. In fact, we understand that a proposal of the permanent commission has been accepted in principle by the Association Belge, and that details will shortly be arranged in Paris in regard to the Congress there in 1910. We understand that the Belgian Government has already given its official adherence to the International Exhibition.

\* \* \*

#### Pocket Spectroscopes.

A pocket spectroscope is a very useful instrument to the photographer as it enables him to test his own dark-room safe-lights and filters for himself. Many plates are wasted through placing reliance on unreliable ruby glass and media the deficiencies of which could be detected in an instant with the aid of a small and cheap spectroscope. Those unfamiliar with the spectrum are, however, very likely to make mistakes. They may know that a screen passing green but blue is safe for a particular plate, but when it comes to actual test they are very likely to be greatly puzzled to determine where the safe green light of the spectrum ends and the unsafe blue light begins. Or, again, when a simple filter is in question they may fail to detect the difference made by the filter, which is sometimes very small to the eye. In cases such as these it is a great advantage to have comparison spectra, that is to say, only half the spectroscope slit is covered by the light filtering medium, and two spectra are formed side by side, one being a complete spectrum of the light source while the other shows clearly the effect of the filter. The slit of the spectroscope, however, very short, and if the light filter is bound up with paper or framed this expedient is impossible. A comparison prism is then wanted. This consists of a small rectangular total reflection prism arranged to cover half the slit and to reflect through that half the light derived from the other side source. Pocket spectroscopes are listed with and without these comparison prisms, but the average type of instrument fitted with the extra prism is not well adapted to screen testing. It is really intended for comparison of two different lights, and if it is to be used for screen work two exactly similar lights are required, one being examined through the screen and the other directly. This is very inconvenient, and for screen testing it is better to make a little addition to the spectroscope in the form

### THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC FOR 1909.

Edited by GEORGE E. BROWN, F.I.C.

THE forty-eighth annual issue of THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC will be published on December 1. This year's ALMANAC reached a total of over 1,000 pages, and the entire edition of 25,000 copies was sold out immediately. Of no other photographic book ever issued can two such unique facts be recorded. The edition for 1909 will also consist of 25,000 copies.

The editorial article will deal very completely with the important subject of

#### REFLEX CAMERAS,

and the systematic review of the work of the year under the title "Epitome of Progress" will be a strong feature of the volume.

The lines followed in the previous editions of the

ALMANAC will be maintained in general, but in a number of particulars the arrangement of the volume for 1909 will be modified to make it more than ever the book of universal photographic reference.

The ALMANAC for 1909 will appeal to photographers the world over as a daily reference guide in practical work. The standard matter and formulæ will be revised and added to where necessary, and, wherever practicable, new features of an informative nature will be added.

**NOTICE—IMPORTANT.**—Our publishers ask us to inform agents that it is advisable to place their orders for copies immediately, as considerably over half the issue is already booked, and a second edition will not be printed.



a side mirror set at an angle of 45 deg., so as to throw the light on to the comparison prisms. A dentist's mirror mounted on a wire handle will serve admirably, for the wire can easily be bent into a clip to fit the tube of the spectro-scope. With this addition both spectra are formed by the same light source, and we can place the filter against the end of the spectro-scope without obstructing any of the light that reaches the mirror. The effect of even the weakest filter can then be instantly detected, while that of a strong filter can be accurately compared with the spectrum of the unscreened light.

\* \* \*

#### Focal-plane v. Lens Shutters.

The question is often asked, What advantage has the focal-plane shutter over a lens shutter working at the same speed? and the correct answer, of course, is, Greater efficiency. Somehow or other a doubt seems to have arisen with some workers as to whether there is not some peculiar virtue attached to the focal-plane method of exposing in the case of high speed work, quite apart from the question of efficiency, but there seems to be no reason to suppose that this is the case. The focal-plane shutter is capable of giving much higher speeds than any lens shutter yet devised, but when both types of shutter are giving the same duration of exposure, they will give equally sharp images of an object moving at a certain speed, the only difference being that the focal-plane image is more fully exposed than the other when high speeds are in use. Suppose we have an object moving at such a rate that no part of it will bear an exposure over 1-200 sec. without showing movement. The lens shutter working at that speed will expose the whole image at once, while the focal-plane shutter will expose it in sections; but this fact cannot possibly make any difference to the sharpness of the image, for no part receives either less or more than the 1-200 sec. in either case. The focal-plane exposure will, however, have a full efficiency of nearly 1-200 sec., while the efficient exposure with the lens shutter will probably be nearer 1-400 than 1-200 sec., but this is the only advantage that the focal-plane exposure will possess. Against this we must set the matter of distortion. The image produced with the lens shutter will be correctly drawn, while the other will be more or less distorted, owing to the fact that one end of the plate is exposed before the other. In the case of a running man, for example, a lens shutter will expose head and feet simultaneously, while the focal-plane shutter, if it runs downwards, will expose the feet before the head, and so represent them in an earlier phase of movement. On this account, therefore, the focal-plane shutter is at a disadvantage. Modern lens shutters of the best type have a very high efficiency at low speeds, as Mr. Chapman Jones pointed out some time ago, their time of opening and closing is the same at all speeds; therefore at low speeds, such as tenths or fifths of a second, the focal-plane shutter has little, if any, advantage. It is only at speeds over, say, 1-20 that its benefits begin to be felt, and then they are confined to high efficiency until we get to the speeds that are beyond the capacity of lens shutters. With modern plates and modern lens shutters a great deal can be done that a few years ago was only possible with the focal-plane shutter, though when using the high speeds it is necessary to guard against under-exposure.

#### THE ADJUSTMENT OF TEMPERATURES.

THOUGH the relative warmth of solutions is recognised as an important factor in all photographic operations, there are some simple matters concerning temperature and its control that are not generally understood by photographers. For example, the fact that a developer should be used at, say, 60 degrees F. may be fully appreciated, while the equally important fact that the developer will not remain at that temperature unless the air in the room is also at 60 degrees may be forgotten.

The temperature of water or of a solution always tends to approximate to that of the room in which it is kept, hence the frequently given advice to let the water stand for some time in the room in which it is to be used. Sometimes a work-room is hotter than it need be, while in winter it is very frequently colder than is at all desirable. In such cases it is difficult to keep solutions at any steady moderate temperature unless special appliances are to hand. When temperature is excessive, the simplest method of obviating its effects is to shorten the times of the operations and use alum or formaline to prevent gelatine troubles, but when the cause is too low a temperature the difficulties are greater. We can, of course, use hot-air baths or hot-water dishes to keep our solutions up to a certain temperature, but, generally, it is simpler, and in the long run probably cheaper, to provide some means of warming the room. In any case, we cannot develop with cold solutions, and, whether the room is warmed or not, we must have a supply of water of normal temperature. If compelled to work in a cold room, we must start with our developer at about 65 degrees, and endeavour to keep it at that temperature as long as possible by any means convenient; while, if the room itself is between, say, 50 deg. and 70 deg., we can work with solutions at the room temperature and moderate our procedure slightly to meet the conditions on the principles advocated by Mr. Watkins with his special time developer.

In an artificially-warmed room, however, the water supply may be very cold, perhaps 40 degrees F., and we cannot keep enough water standing in the room to obtain a good supply at normal temperature. If, however, we have hot water available and understand the proper use of the thermometer, it is quite easy to obtain a supply at the room temperature at any moment. To do this we want a thermometer hanging up in the room to give the air temperature, and a chemical thermometer for solutions reading up to pretty near the boiling point of water. Also, we want a good size graduated measure. Suppose, now, we find that the room temperature is 60 degrees, and that of the tap water 45 degrees, while a supply of hot water to hand is at 120 degrees, we can take these temperatures in a moment or so with our thermometers, and in another minute we can have a plentiful supply of water at 60 degrees if we only know how to go to work. The method is simplicity itself, but probably few photographers know of it. The tap water being 45 degrees and the hot water 120 degrees, the difference between them is 75 degrees, and to obtain water at 60 degrees we must mix enough of each to raise the cold water 15 degrees or lower the hot water 60 degrees. To do this we simply add 15 parts of hot water to 60 of cold, and so obtain 75 parts of water at 60 degrees.

The rule followed is obvious. The number of parts of hot water that we take is equal to the number of degrees that the cold water has to be raised, while the parts required of cold water are equal to the number of degrees that the hot water is to be lowered. In the example the 60 parts of cold to 15 of hot are, of course, equivalent to

EDINBURGH PHOTOGRAPHIC SOCIETY.—Two excellent one-man exhibitions are being arranged by the Edinburgh Photographic Society, at their rooms at 38, Castle Street, the first by Mr. William Crooke, from October 31 till November 14, 1908; and the second by Mr. J. A. Annan, Glasgow, from March 31 till April 14, 1909. As both these gentlemen are amongst the foremost workers in the country these exhibitions should be of much more than ordinary interest. The exhibitions are open daily from 10 a.m. to 10 p.m.

4 to 1, and in all cases it is easy to arrive at very simple reduced proportions, for a small variation in quantities will only give a minute and quite inappreciable variation in temperature.

If compelled to work in a cold room we can regulate the water temperature in the same way, but it is generally advisable to adjust, in the first instance, to 65 or 70 degrees to allow for the subsequent fall that must follow. To obtain water at 65 degrees by the rule given we should have to add 20 parts of water at 120 degrees to 55 parts at 45 degrees, or 4 parts to 11. To obtain water at 70 degrees we should mix 25 parts at 120 degrees with 50 at 45 degrees, or 1 part with 2.

An extra precaution is advisable in a cold room. A cold dish of porcelain or glass will bring down the temperature rapidly, therefore the dish should be warmed first to about 65 or 70 degrees, and this is best done by allowing it to stand for some little time filled with water at about 80 degrees. It is not safe to heat it over a lamp unless precautions are taken to prevent its becoming too hot, for if over-heated it will raise the temperature of the developer and probably damage the film. Then, again, the dish should not be put down on a cold surface when in use, otherwise it will cool rapidly. A piece of cork carpet or cork mat, or a thick piece of felt, should be under the dish, and in very cold weather it is just as well to put another piece of felt or thick, warm, dry cloth right over the dish, which must, of course, be covered to keep out dust derived from the cloth.

Development and toning are the operations most seriously affected by temperature. Most other operations,

such as fixing, are simply slowed down, and a very much longer time than is usual is required to fix a plate in very cold weather. It is, however, only a question of time to produce a complete and perfect result. All the same, there is no reason why the operation should not be hastened by using a warmer bath, and if the hypo is kept in a stock solution its temperature can be brought up by dilution with hot water. To do this we apply the same rule as that given for altering the water temperature by dilution, but we have to vary the working somewhat, seeing that a definite strength of hypo solution is required. Suppose the stock solution to be double strength and at a temperature of 40 degrees, hot water at, say, 120 degrees being available as before, we want to raise the temperature of the hypo solution 20 degrees—that is, up to 60 degrees—therefore, according to the rule, we should add 20 parts of hot water to 60 of hypo solution. We shall then want 80 parts more water at 60 degrees to reduce the strength of the bath, and this must, of course, be taken from the stock of water at normal temperature.

Perhaps we may state the rule for dilution in a different and somewhat simpler form for the benefit of those not familiar with it. Find out, first, how many degrees the cold water is to be raised, and then take that number of parts of hot water. Next find out how many degrees the hot water is to be lowered, add to it that number of parts of cold water. The hot water first taken is cooled down slightly by the measure into which it is poured. We leave it for a minute or so and then take its temperature, this cooling down is more or less accurately allowed for.

## STEREOSCOPIC PROJECTION BY THE PINATYPE PROCESS.

In Eder's "History of Photography," page 432, it is pointed out that D'Almeida published a method of stereoscopic projection in Paris about 1858. He provided a magic lantern with a red and a green glass, each of which he used in projecting the stereoscopic transparency. The observer was likewise provided with red and green glasses, in order to observe the stereoscopic image. In 1891 Ducos du Hauron patented his so-called "anaglyphs," in which he likewise used red and green spectacles in order to obtain the stereoscopic effect of pictures printed, one upon the other, in red and blue colours. It will thus be seen that this description of stereoscopic print is in no way new. The fact that it is very seldom seen at the present time for projection purposes is doubtless due to the fact that it is a matter of comparative difficulty to prepare the two complementary transparent pictures. The pinatype process may be named as an assistance in this direction, as it allows of perfectly transparent positives being obtained in a series of colours. The dyes employed for this purpose must be as closely as possible complementary, forming white by additive mixture. This condition is fulfilled by a pair of pinatype dyes—red F and green M—only to a relative degree. Red F allows a good deal of blue to pass, as does also green M, so that a perfect white is not the result of their mixture; moreover, the colour of the green M is not very pure, and it is therefore not possible to cause the image obtained with this dye to disappear completely on observation with a similarly dyed glass. And this is the essential part of the process. The eye provided with the green glass should not be enabled to perceive the green image, whilst the red should look as black as possible, whilst to the other eye, that provided with the red glass, the red image should be indistinguishable, and the

green image should appear black; that is to say, each should be enabled to see only that image intended for it in order to secure the stereoscopic effect. Of late, success has attended our efforts to find a pair of dyes which would be quite suitable for stereoscopic projection. The absorption band of the "complementary green" extends from the extreme red up to wave length  $570 \mu\mu$ , that of the "complementary red" from about wave length  $780 \mu\mu$  to the ultra-violet. The two dyes together transmit the whole spectrum in the case of an observer using a pair of spectacles the glasses in which consist of a pair of films prepared from the two respective dyes. On the other hand, any image prepared with either of the dyes appears black when observed through the complementary colour for the reason that the absorption bands of the dyes are without gaps.

For purposes of stereoscopic projection it is also necessary, as above remarked, to have two complementary-coloured images and a pair of observation glasses made, say, into the form of a pair of spectacles. The light source must be as bright as possible, for the reason that a good deal of light is lost by absorption in the glasses.

### Preparing the Transparencies.

The transparencies are projected so that they are superimposed, and of a size about 8.5 by 10 cm. In order to obtain the two pictures equally sharp they must both lie, as far as possible, in one plane. This is obtained either by printing one image on glass and the other on a piece of film, or by still, by making positive transparencies in the camera, and from one a reversed positive. It is well known that

\* A weak bright band in the extreme red is of no importance for these purposes.



atype process gives a positive print from a positive, and method to follow, therefore, in using this process is to pare from the stereoscopic negative two positive transparencies on a gelatino-bromide lantern-plate. This can be in the usual manner by contact printing if one of the components is made on film. The film, which must be coated with pure unhardened gelatine, is treated exactly as print-plate described later. One drawback of the film is it never lies completely flat between two glasses, and before a very thick film requires to be used. Further, the mold is liable to ignition in the heat of the projection.

On these accounts we prefer to prepare two positive transparencies, one the opposite of the other as regards right left, so that they can be placed film to film. It is a plan to work so that the negative made with the right-lens is placed with the film side outwards, that is, away the lens in the carrier of the reducing camera; it is adjusted to the desired size, the camera carefully fixed, exposure made. On the film side of the other negative taken with the left-hand lens) a clean sheet of glass is of the same thickness as the plate, and the two fixed the carrier so that the glass plate is turned towards the and the second exposure made. The result is that we have two transparencies the image in which is exactly the size, but one reversed as regards right and left relatively the other. The transparencies should be soft and full of detail, plucky or brilliant results being quite unsuitable for process. In order to avoid confusion it is well to denote the image obtained with the right-hand lens of the camera as (red) the other as G (green). For printing from the transparencies the so-called pinatype print-plates are prepared according to the well-known prescriptions.\* Exposure is made about half the time necessary for collodion paper, the plates well washed, and then stained up as follows:—

#### DYE BATHS.

Complementary red, D .....	1 gm.
Water .....	100 ccs.
Complementary green, D .....	2 gms.
Water .....	100 ccs.

Plate marked R is stained red, that marked G green. Colour is taken by the plates very quickly, and therefore should be constantly kept moving in the dye bath. The images may be adjusted after the plates have been rinsed with water. The images should not be too dark. The correct relative intensity is obtained when the red image, viewed through the filter, appears as dark as the green image viewed through the filter. If the image is too soft it is a sign that exposure is too short, whilst excessive hardness of the print is a sign of over-exposure. The plates, when sufficiently dyed, are placed under a spray for a second or two, and then placed out a minute in 3 per cent. alum solution, again briefly rinsed, the surface wiped carefully with soft cambric, and the plates dried. The two plates are then mounted so that the images in each transparency is approximately in register, as to say, the distant portion of the right-hand print lies a little to the right of the left-hand print; they should not be in absolutely exact register. If the images are too far apart it is difficult to make the projected images register. The pair of transparencies is united by means of an elastic band, cut down to the standard size and bound up in the way with paper or linen binding.

#### The Observation Filters.

The stereoscopic effect of these two-colour pairs can be seen at the aid of a projection lantern. This is done by holding before the right eye a blue-green glass and before the left eye a glass of orange-red. In this case the green image should be seen, that is to say, that turned towards the eye. The compound transparency is turned the other way, the

position of the observation glasses should be changed. If necessary, the light-filters employed for three-colour photography can be used for this purpose, but it is better and more convenient to employ a pair of spectacles containing suitable coloured glasses or gelatine films. Unfortunately, the gelatine films are very liable to injury by damp, becoming distorted and losing their transparency. They are also easily scratched, so that it very soon happens that the pictures cannot be plainly seen through them. Glass to which has been applied a coloured gelatine or collodion film suffers from almost these same drawbacks, but the ideal apparatus for the purpose is a pair of spectacles provided with spectroscopically correct cemented thin glasses. These can be obtained in the most simple way by staining two fixed and well-washed lantern plates in the dye solutions up to a point when they are found by test to be of the right intensity, quickly rinsing, hardening with alum, and again rinsing and drying. In preparing a great number of such glasses the following process is preferable: Well-cleaned thin glass is coated with dyed gelatine solution (see "Natural Colour Photography," by König and Wall), to the extent of about 7 ccs. of gelatine per 100 square cm. area. After drying, two such dyed glasses are cemented with Canada balsam, although cementing is not absolutely necessary. As the dyes "complementary red" and "complementary green" cannot be readily prepared in large quantities in the pure state, so that it is impossible to guarantee the absolute uniformity of their strength, it is preferable to employ for the preparation of the filters other colouring matters which resemble the pinatype dyes as regards their absorption properties but in other respects are not suitable for that method. For the red filters the following formula may be used:—

Gelatine .....	6 gms.
Distilled water .....	100 ccs.
Solution of Rapid Filter Red I. (1:40 in water) .....	200 ccs.

The mixture for the green filter is as follows:—

Gelatine .....	6 gms.
Distilled water .....	100 ccs.
Naphthalin green solution, chem. pure (1:100 in water) .....	5.10 ccs.

The spectacles for use by daylight should be 10 cm.; for projection purposes, 5 cm.

In regard to the projection of the transparencies, it should be noted that the latter should be placed in the carrier so that the green picture faces the light source, and the spectacles so used by the observer that the right eye looks through the green filter, the left eye through the red. The effect of such projection slides is most remarkable. The picture appears to stand out solidly from the screen, and gains still more in depth as the observer is able to take a position a good distance from the screen. If the light source is not very strong it is better to have the pictures a little smaller, as brilliance of the picture on the screen is quite necessary for the best effect.

It need scarcely be added that the red and green images can also be prepared on paper. For this purpose all that is necessary is to apply to the red print-plate a sheet of transfer paper until a sufficiently strong image has been obtained, remove it, and then apply it to the green print-plate, so that the red image of the distance in the subject is approximately in register. The print is then fixed in alum, washed, and dried. Such pictures correspond precisely to the "anaglyphs" which are used to see in the stationers' shops; the effect can never be so good as in projection, nevertheless such pictures possess much interest.

To those who may feel impelled on reading these lines to arrange an evening of stereoscopic projection, the excellent treatise of Dr. W. Scheffer, "Anleitung zur Stereoskopie," may be recommended. The reader will there find a very complete exposition of stereoscopic projection, though not of the preparation of the slides.

Dr. E. König.

\* See "Photographische Mitteilungen," 1906, p. 133.

## NOTES ON PHOTO-MECHANICAL GRAINS.

(A Paper read before the London and Provincial Photographic Association, October 22, 1908.)

Most photo-mechanical processes produce in the prints a grain which is characteristic of the process, and which is influenced by the method of printing employed. Printing methods readily fall into three classes, which we may designate relief, surface, and intaglio printing. In relief, or typographic printing, the parts that are to receive ink stand up to a common level—that of the type—as does the wood block, while the whites are etched down below this level. Here the practical advantage is that such a block can be printed with type matter; and as in this method of printing it is a question of printing the full amount of ink or no ink, the varying tones of a picture are imitated in the half-tone block by various-sized ink-carrying dots. Surface printing, including collotype and lithography, depends upon a surface tension effect, whereby a flat surface takes up ink from the rollers in varying quantities dependent upon the amount of water present; while in intaglio printing the roughness and depth of a copper plate determines the amount of ink it retains after inking up and wiping, the ink being then transferred to damp paper in a copper-plate press.

### Typographic (Relief) Printing.

In relief printing the effects of light and shade have to be simulated by different sized dots or lines. The process mostly used for accomplishing this, almost to the exclusion of others, is the half-tone block made with the cross-line screen, which has two sets of opaque lines, equal in width to the spaces between, crossing at right angles. The familiar grain given by this is seen in No. 1.

Other forms of regularly ruled screens have been tried, but have not come into general use. Among them may be mentioned Levy's four-line screen, now no longer made, and one screen which has two sets of rulings crossing at 60 deg. The grains produced by these in the prints are shown in Nos. 2 and 3.

The basis of the action of the cross-line screen is that when it is placed in front of the plate, so that the ratio of the effective aperture to the real camera extension is the same as the ratio of a screen opening (side of the square) to the distance of the screen from the plate, then the positions on the plate immediately under the centres of the screen openings receive the full amount of light from the lens, and, owing to the penumbral shadows of the rulings, these bright points shade away to minima under the intersections of the rulings. This gives rise in the negative to dots growing outwards from all the bright centres, the sizes of which are determined by the brightness of the image at the place in question. This geometrical distance is frequently spoken of as the one which is theoretically correct, but this is by no means a complete statement. It is true that it secures a gradation of the light between certain maxima and minima as indicated, but this occurs only in two perpendicular planes about the axis if a round stop is used. In other planes the ratios are not identical, but the fulfilment of this condition of the lens and screen apertures bearing identical ratios to the camera extension and screen distance respectively does produce negatives, such as are required, with one exposure from bright originals, like glossy bromides, but the screen distance has to be altered for differing originals, or corresponding alterations made in the exposures.

It does not appear probable that diffraction plays much part in the formation of the screen negative, for a diffraction pattern does not become at all certain for larger actual aperture ratios than  $f/100$ , as the stop does not approximate sufficiently to a point source. Further, this effect does not depend on the

camera extension, but only on the size of the screen opening and its distance from the plate. If one works on the system of keeping the ratio of the camera extension to the effective aperture, 64, and also the same relation between the screen opening (side of the square) and the screen distance, then the diffraction pattern on the plate is that of a black cross showing that the first dark bands from each edge have a width midway, the four bands joining in pairs to form a cross. As the intersection of this cross is the centre of the dot formed on the negative, it is evident that the effect is not large enough to be felt at the aperture employed. An effect of more consequence is scatter of the light in the film. It is this which makes it so difficult to obtain good screen negatives on plates possessing a coarse grain.

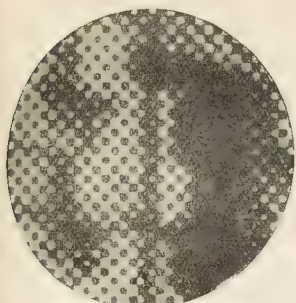
Among early methods for obtaining the translation of type into different sized ink-carrying dots or lines, Petit's is of interest. The grain of this is seen in No. 4. Here a planotype cast was made from a gelatine relief; this was blackened and ruled through with a V tool in a series of parallel lines. The second set, not quite so deep, were generally ruled across these at right angles. The black-and-white effect so obtained was reproduced photographically. Within the last few years a method on similar lines has been used by Amstutz, who wraps his Akrograph wraps a celluloid sheet tightly over a camera print on a metal cylinder, and then cuts a long, close spaced, with a V tool in the celluloid; the depth of the cut is determined by the relief of the carbon print. The fine spaced lines give a single line effect in the print (No. 5).

To some, the regular rows of dots are objectionable, when they cannot be distinguished. It is assumed that, particularly in the reproduction of art work, the regularity destroys some of the artistic qualities of the original. This idea, the desire to produce some revolutionising invention, has caused a number of irregular-grain processes to be put forward. Whether any of these will obtain much vogue is doubtful, but so far none have come into very general use; and, except for some art work, the ruled screen is likely for some time yet to hold its own, especially for newspaper and catalog work and the illustration of technical works where the precision of detail is of importance. Grain processes are apt to impart some character of their own to the print, and frequently give somewhat chalky effects, owing to the dots being of more than one size and the smaller ones etching away in the light tones.

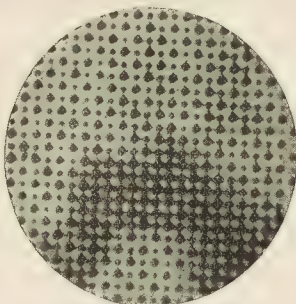
No. 6 shows the grain produced by Wheeler's Metzger screen, one of the commoner irregular grains.

The Spitzertype process, No. 7, is interesting in that it is stated that the grain is obtained by printing from an ordinary continuous tone negative on to a copper plate coated with chromated colloid, no grain of any kind being employed. Immersion, however, in ferric chloride, the mordant tank, and film and penetrates only through a number of pores, instead of evenly over the surface, and thus gives rise to a grain which can be used for printing. The examples put forward as produced by this process certainly exhibit an unusual grain of round dots. Such a process would seem to obtain its grain from the cellular structure of the colloid itself. This structure (a transparent and apparently homogeneous gel) has been demonstrated to exist by the treatment of albumen or gelatin with mercuric chloride, or with alcohol. It is the cause of many well-known phenomena, as, for instance, when plates are dried too rapidly by alcohol they are liable to show an opalescence due to the fixation of the structure, possibly the inclusion of gas bubbles. Again, a gelatin negative hardened in formalin remains permeable while

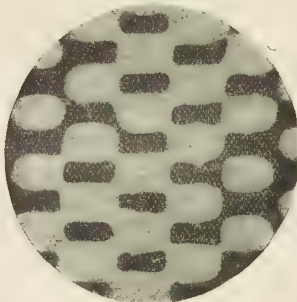




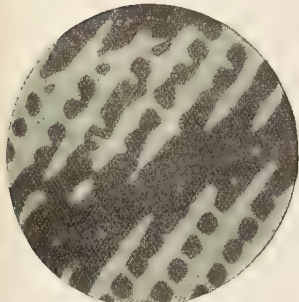
1. Half-tone.



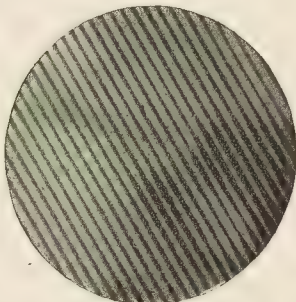
2. Levy four-line screen.



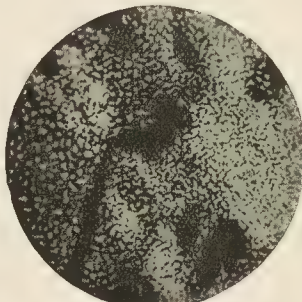
3. 60° screen.



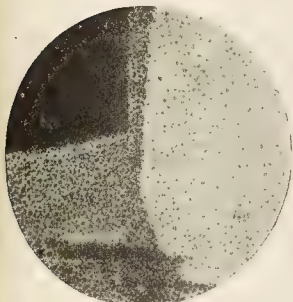
4. Ruled plaster relief.



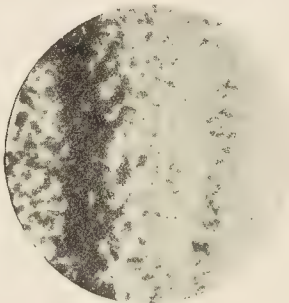
5. Akrograph.



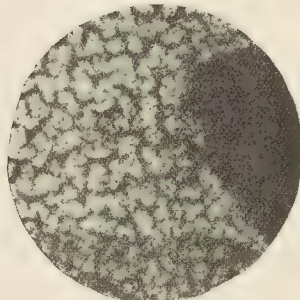
6. Metzograph.



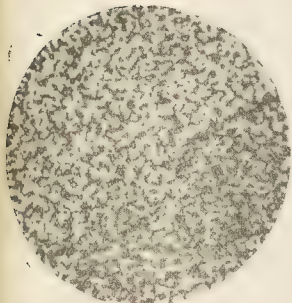
7. Spitzertipie.



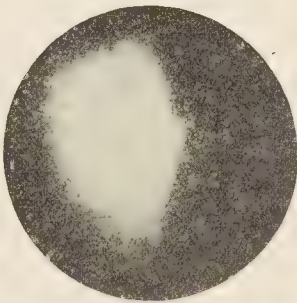
8. Lithographic chalk on grained stone.



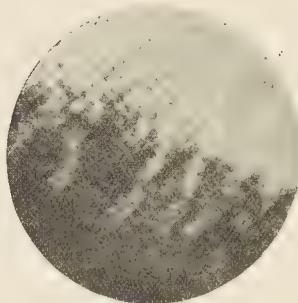
9. Collotype.



10. Inverted Photogravure.



11. Photogravure.



12. Machine-printed photogravure.

Photo-micrographs of the grains of photo-mechanical prints. Magnification 12.

Blocks made by Students of the L.C.C. School of Photo-Engraving.

wet and swollen, but when once dried, it will not swell again so readily, nor be easily permeated by water. The most probable explanation of this is that the formalin fixes the cell walls without closing the cells; on drying, the cell walls crush together too firmly to disentangle on re-soaking. It may be that the Spitzertype grain is derived from this structure.

#### Surface Printing.

In both lithography and collotype there is little or no relief, the distribution of the greasy ink being determined by the amount of water the plate retains, for as the water and grease do not mix, their surface tensions prevent any spreading of the ink to the parts of the printing surfaces retaining much water. No. 8 is the grain of a lithographic print where lithographic chalk has been used for drawing on a stone grained with sand. No. 9 is a coarse collotype grain.

The collotype grain is a quite characteristic network (see No. 9), of which only a thin outline is seen in the highest lights. It is often considered that the character of the grain varies from the lights to the shades, but from an examination of a number of grains there would appear to be an outline network of approximately the same size all over the plate; it is said to be a fine or coarse grain, according to the size of this outline network. This constitutes the highest relief of the grain, and is, of course, most swollen in the whites. In the lightest tones only the ridge of this network carries ink in an irregular manner; the darker tones are formed partly by the network widening, and also, in most cases, by a secondary network of lower relief commencing to print. Both of these effects can be seen in No. 9. In the deepest blacks both systems merge to a solid mass.

As to the manner of formation of this grain. It is often assumed that the grain is formed during the exposure (or at least that the exposure seriously modifies its character), or during the subsequent swelling in water. Its formation has also been likened to the folding of mountain ranges, but the case differs from this in that the collotype film is securely fixed to a firm base, and the elevated strata forming mountains have not a firm base, and are subjected to lateral pressure. Recently an explanation has been attempted, to the effect that the grain is formed during the washing with water by the swelling of an assumed layer of comparatively soluble gelatine under a top film of insoluble gelatine; though why the latter should be wrinkled, and not merely raised (as, for example, in the ordinary carbon print), and why the network should be fairly regular in size, is a trifle difficult to understand from this cause. I consider, however, that the grain is not formed in the swelling, for it can be seen in the collotype plate before exposure, when this is carefully lighted obliquely. Further, when thick gelatine plates are being coated, a grain of this kind can be seen to form on the surface while the bulk is still liquid. This may be due to any attractive force between the solid particles of gelatine as they are formed, such as might be furnished by the surface tension between the solid and liquid gelatine. Any such action would have an effective radius which would influence the size of the outline mesh.

As regards the collotype plate this grain is certainly present when the plate is first made, however it may be intensified by the later operations.

#### Intaglio Methods.

No. 11 is illustrative of the grain of ordinary photogravure where the grain is obtained from the bitumen dust as usual, while No. 12 is an example of machine-printed photogravure showing a screen pattern. An inverted photogravure process is illustrated in No. 11. Here a positive carbon print is developed on the grained copper instead of a negative one as usual, and the etching is carried deep enough for the printing to be done from the surface (typographically) instead of the hollows, as usual.

A. J. BULL.

## Photo-Mechanical Notes.

### Half-tone or Colour Screens.

A METHOD of making lined screens for half-tone block-making or for screen-plate colour photography has been patented by W. C. Masser, of Wigganhall Road, Watford, and W. Hudson, of Hatfield Street Works, Stamford Street, London, S.E. It consists in cutting up films into thin threads or bands and applying the latter to another film. According to the description in the patent specification (No. 25,730, 1907), the films or layers can be coloured transparent or opaque—e.g., one transparent and the other opaque; or the first layer or film can be yellow, the next red, and the third blue, with or without transparent or opaque layer between, or in any order in which they are placed after cutting.

The threads are led on to the screen so as to occupy parallel positions, or in the case where cross lines are desired they may be led so as to lie across each other at any special angle, but being preferred in such a case to use several films or sets of films so that the threads from one film or set may be led and arranged over those of the same or different kind. In such a case a film may be made as above described and then passed again through the pressure rolls to receive the second set of threads, the film being led in at the requisite angle to give the desired crossing to the threads or lines. Instead of forming cross lines in this manner two screens may be formed with parallel lines as before described and then superimposed as is usual with ordinary engraved screens.

The angle of the lines relatively to the sides of the screen may be varied either by directly varying said angle when applying the threads or afterwards by suitably cutting the sides of the film.

According to another method a number of films in the form of discs may be clamped together on a spindle and rotated against a knife applied to the circumferences of the discs, so that a shaving composed of a large number of threads is obtained. These threads may be applied to a carrying film as before described. A number of screens manufactured as above described may be superimposed to form a block, cross sections or shavings of which may be cut off in planes at right angles to the planes of the individual film which shavings may be used as screens having a square or irregular grain.

### PHOTO-MECHANICAL PATENTS.

The following patent has been applied for:—

**COPPER PLATES.**—No. 22,577. Improvements relating to a method for engraving, toning, stippling and etching on copper plates. Carl Quensel, 20, High Holborn, London.

**PHOTOGRAPHS OF THE FRANCO-BRITISH.**—During the last week the was displayed in the Congress Hall of the Franco-British Exhibition a collection of 300 photographs of scenes or objects in the exhibition. The photographs had been sent in in response to an invitation from the exhibition authorities, by whom nine prizes were offered. Those who took part in the "Great Congress" of September 1 were, we understand, invited to take part in this exhibition, or, any rate, had it brought to their notice; yet the results seen upon the stands at Shepherd's Bush last week formed a collection including much that was as bad as it is possible for photographs to be. Apparently everything sent in was shown. But if there had been an elimination of the unfit there would have been but few photographs left. An attendant, whom we found swinging his legs from a table, answered our inquiry as to his having been told off to guard the exhibits in the affirmative. On our suggesting that the money paid for his services was in excess of the value of the exhibits, he was understood to say that he knew which he would sooner have. But he excepted—as did we—from this comparison a set of lantern slides by Newton and Co., which were on a level with this firm's highest standard of excellence, as were another set labelled "by Mr. G. J. Freshwater," but obviously the work of our genial and talented friend who for many years past has acted as technical manager Messrs. Newton and Co.



## Patent News.

*Process patents—applications and specifications—are treated in Photo Mechanical Notes.*

The following applications for Patents have been received between October 19 and October 24:—

**CINEMATOGRAPH.**—No. 22,117. Improved cinematograph. Marius Auguste Ginoux, 322, High Holborn, London.

**COLOUR CAMERAS.**—No. 22,249. Improvements in cameras for taking colour photographs. Alexander Hutson, 6, Lord Street, Liverpool.

**CINEMATOGRAPH-PHONOGRAPH.**—No. 22,415. Pneumatic apparatus for effecting the synchronisation of a cinematograph and a phonograph. Casimir de Proszynski, 72, Cannon Street, London.

**SLIDING CAMERA.**—No. 22,543. Improved folding camera, with self-adjusting objective board. Wilhelm Kabelitz, 322, High Holborn, London.

**WAX-ROOM LAMPS.**—No. 22,571. Improvements in and relating to candle lamps for photographic dark-rooms. William Wallace Beasley, 63, Onslow Road, Richmond, Surrey.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

**THIOMOLYBDATE TONING OF BROMIDES.**—No. 22,218. 1907. The invention consists in the use of thiomolybdate compounds in place of sulphides in the sepia toning of bromide or other prints. A typical salt which is quite suitable for use as a toning reagent is ammonium thiomolybdate  $(\text{NH}_4)_2\text{MoS}_4$ , which is practically odourless in freshly prepared solutions. To make up a toning solution from this salt for use in place of the usual sodium sulphide toning solution, a 1 per cent. aqueous solution of the salt is made up, and about 60 minims or drops (1 drachm) of this are used, to one ounce of water to which 5 minims or drops of strong (.880) ammonia are added; or  $\frac{1}{4}$  grain of the solid  $(\text{NH}_4)_2\text{MoS}_4$  may be dissolved in one ounce (fluid) of water, and 5 minims of .880 ammonium hydrate added to form the toning solution. The silver image developed on the print is bleached in the usual manner and is then toned by the ammonium thiomolybdate solution of approximately the strength above set forth, and the action has been found to be intensifying to a certain extent so that flat or dull prints can be considerably improved by the toning process. The intensifying action is apparently due to the fact that, besides converting the bleached image into silver sulphide, the thiomolybdate also deposits on or the image a certain proportion of sulphide of molybdenum. It is found also that the thiomolybdate toning solution will act well with gaslight prints, and there is no tendency to produce the unpleasant yellowish tone above referred to in connection with the sodium sulphide toning.

After the print has been toned in the thiomolybdate solution it is rinsed, and then the whites or high-lights in the print may be given a creamy colour, which can be left if desired. If, however, the whites are to be cleared, which is generally advisable, this can be effected by using a bath of dilute ammonia of a strength of about 1 per cent., and after being immersed in this bath for a few minutes and then thoroughly washed the prints should come out with the whites quite clear.

If by mistake too strong a solution of thiomolybdate has been used, the film of the print may become somewhat stained. The stain, which is yellow, can be cleared by the use of a solution of alkaline metabisulphite, preferably sodium or potassium metabisulphite.

In some cases the bleaching is effected by a solution of potassium iodide and iodine, in which case the bleached image consists of silver iodide; in this case there is usually blue iodide of starch smeared on the print, and this should be cleared with sodium sulphite, as is usual, before toning. The thiomolybdate toning bath will usually remove the blue colour to a certain extent, but perhaps not completely in the ordinary duration of the toning operation. Sometimes the bleaching is effected by means of potassium bichro-

mate and hydrochloric acid, in which case silver chloride is formed on the print. The thiomolybdate toning solution can be used in such cases, but does not give nearly so good tones as when the more usual potassium ferricyanide and potassium bromide bleaching solution is used.

If the normal tone given by the thiomolybdates following the instructions given above is not quite what is required, darker tones are obtained by a shorter time in the toning bath, and warmer tones or a more prolonged action of the toning solution. The normal tone may be taken to be that given by about five minutes in the toning solution. Also if on drying the print is too dark it may be modified by re-bleaching, washing, and again immersing in the toning solution. The toned print will not entirely bleach in an ordinary bleaching solution, but five minutes' treatment with it is sufficient to greatly alter the final tone, though the visual effect of the second application of the bleacher might be slight. Increasing the proportion of ammonium hydrate in the toning bath is also a simple method of producing warmer tones.

It may be mentioned here that, although it is stated in Watts' "Dictionary of Chemistry" that solutions of thiomolybdates when dilute, and especially when free alkali is present, become turbid and decompose, yet the inventor has found that dilute solutions of thiomolybdates, such as ammonium thiomolybdate  $(\text{NH}_4)_2\text{MoS}_4$ , keep very well when made slightly alkaline with their own alkali, ammonia in this case. Solutions of thiomolybdates made alkaline with their own alkali keep excellently if they are concentrated.

The molybdenum may also be replaced in some cases by other metals of the same group (Mandeleeff's Group VI.), such as tungsten and uranium. Experiments have shown that ammonium dithiooxytungstate  $(\text{NH}_4)_2\text{WS}_2\text{O}_2$ , can be used satisfactorily as a toning agent in solutions of approximately the strength above suggested for ammonium thiomolybdate, and good sepia tones are obtained. It is best, however, not to mix ammonium hydrate with the thiooxytungstate in the toning bath. The thiooxytungstates, however, are not as good as the thiomolybdates as regards freedom from odour in solution, and the tones they give are not so good as a rule. Salts in which uranium replaces the molybdenum have been tried, such, for instance, as potassium thiouranate, but these salts are practically useless for toning purposes. Harry Edmund Smith, 3, Ezra Buildings, Ezra Street, London, E.C.

**MERCURY-VAPOUR PRINTING APPARATUS.**—No. 25,511. 1907. This invention has for its object to provide a portable apparatus or stand for supporting both the mercury-vapour lamps and the printing frames in such manner that the lamps can be readily adjusted for taking photographs or for printing without being removed from their stand. The apparatus comprises a metal frame forming a skeleton box or cage having detachable bars from which the printing frames are suspended by detachable clips. The bars are capable of being fixed at different heights or swung out of the way of the frames or rays of the light. A removable top is fitted to the cage, which thus forms a table, the whole being mounted to run on castors. The lamps are supported by a tubular stem or pillar fixed to the back of the cage and formed in two parts, one of which slides in the other, such parts consisting of a lower or socket part fixed to the cage and an upper part removably held in the socket. On the stem an arm is mounted to slide, from which the lamp frame or carrier is so suspended by an adjustable swivelling joint, that it can be moved towards or away from the stem or pillar, tilted and set at any suitable angle for exposure work.

In order to ensure easy working the arm from which the lamp frame is suspended is connected, by a cord passing over a pulley on the top of the tubular stem or pillar, with a counter-weight arranged to slide in the stem.

By sliding the arm up and down the rod the lamps are raised into the required position for exposure work or lowered into the cage for printing. To regulate the amount of current the lamps shall take and to adjust the burning on various voltages or supplies of electricity a regulating rheostat or resistance with ammeter in circuit, is fixed in a convenient position on the table stand. Oscar Thomas Banks, 49, Mortimer Street, London, W.

**ENLARGING AND COPYING CAMERAS.**—No. 9,349. 1908. The claim is for an apparatus comprising a "screen-room" and means for adjustably supporting a screen or plate therein; a lens frame mounted outside the "screen-room" and opposite an aperture in

the front wall thereof; a guide board supported independently of the "screen-room," but capable of being shifted in and out of the latter and adapted to enable the main lens frame to be slid from within the "screen-room" for the purpose of adjusting the focus of the lens; a copy-frame; bellows connecting the camera frame with the aperture in the front wall of the "screen-room"; small bellows and an attached lens frame and lens carrier enclosed in the main bellows, sliding on a stand and adapted to allow of the extreme movement of the lens towards the screen, otherwise prevented by the thickness of the lengthy main bellows. Alohanan Cohen, 69, King Edward Road, Hackney, London.

The following complete specification, etc., is open to public inspection before acceptance under the Patents Act, 1901:—

**SCREEN-PLATE.**—No. 20,111. Screen or plate for direct colour photography and process for manufacture of the same. Soc. Anon. des Plaques et Papiers Photographiques A. Lumière et ses Fils.

### New Trade Dames.

**PARLYTE.**—No. 306,516. Chemical substances used in manufactures, photography, or philosophical research and anti-corrosives. Thomas Parsons and Sons, 8, Endell Street, Long Acre, London, W.C., varnish and japan manufacturers. September 28, 1908.

**ROTOCHROM.**—No. 35,871. Coloured photographic reproductions and coloured photographs. The Rotary Photographic Company, Ltd., 12, New Union Street, Moorfields, London, E.C., manufacturers. August 29, 1908.

## Analecta.

*Extracts from our weekly and monthly contemporaries.*

### Drying Developing Paper Prints Without Curl.

I recommend a method of drying prints (writes J. B. Luttbeg, in "Abel's Photographic Weekly" for October 3) that has been tried out and can be endorsed as having much merit. Prints dried by my method will remain absolutely flat under all conditions, and can be used for loose mounting and folder work by attaching prints to the mount at the upper corners.

The principle of the process is to dry the prints in a roll with the emulsion side out. This keeps the emulsion stretched while drying, and when the dry prints are removed from the roll there is no tendency to curl.

Wooden rollers of the desired length (say 25in.) are used, and strips of ordinary manilla wrapping paper of this width should be provided. The manilla paper should be in one piece about 5 yards long.

Start at one end of the strip of paper by winding it around one of the wooden rollers. The prints should be placed face down on five thin blotters, with five thin blotters on top. These blotters and prints are then placed on top of the strip of manilla paper and rolled in.

Be sure to place the prints in the roll so that the emulsion side is towards the outside of the roll. It is also advisable to place prints in the roll lengthwise, or, in other words, so that the long way of the prints is the same as the long way of the roll.

Do not make rolls too big, or prints on the outside of the roll will not be dried with enough curve. Smaller prints should be placed towards the inside of the roll, and prints of larger size placed towards the outside. This will give them the same relative curve while drying.

Before putting prints in the roll they should be partly dried, as any surplus moisture carried into the roll will lengthen the time required for drying. To accomplish this end, when prints are removed from the wash water they should be stacked and allowed to drain thoroughly. They may then be placed face down on some clean surface until partly dry, or, better still, be placed between blotters for about one hour previous to being rolled up.

Always use perfectly dry blotters when rolling prints up, and it is well to leave prints in the roll over-night so that they will be dried thoroughly before being taken out.

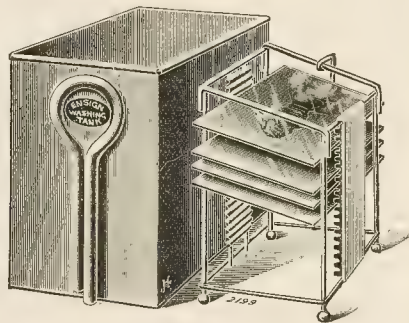
## New Books.

**"CAMERA WORK,"** No. 24.—The latest volume of this sumptuous periodical will not be thought to possess much in the way of new attractions. There are four still-life subjects and three portrait all of them off-met acquaintances of London shows and journal. Needless to say, they are by the Baron De Meyer. There is also literary effort by C. H. Caffin, which may be pronounced apotheosis of Steichen. The book is therefore a little suggestive of "souvenir" of the London Salon. The finest thing in the book W. E. Wilmerding's view called "Over the House-tops, New York." We do not care so much for the laborious imitations of Old Dutch masterpieces, by Guido Rey. They do not bear prolonged examination, their success as imitations being specious to the last degree. A great feature of the letterpress is a series of so-called interviews with several French painters as to the status of photography among the arts. Reading between the lines, it is not difficult to see that the French artists as a whole bear out the truth of the opening line of the article: "Photography has a very undesirable reputation amongst the artists of our times." A majority of the artists appealed to decide frankly that straight and uncontrolled photography is of the most value artistically. It would appear that "Camera Work" has gone a long way from New York to get something nice for itself; but has gone to the wrong shop nevertheless. We think it a bad policy for "Camera Work" to be always either blowing the trumpet of "art" photography or trying to get someone else to blow it. Mr. Caffin's comparisons between painting and photography are futile and wearying because of their antiquity. One who can see nothing but brush-marks in Sargent's portraits, and who pays his hero, Steichen, an alarming number of left-handed compliments, is scarcely well equipped to write upon such a subject.

## New Apparatus, &c.

The "Ensign" Film-Down Washing Tank. Made by Houghton & Co. Ltd., 88 and 89, High Holborn, London, W.C.

Made of stout zinc, this tank is of solid construction. The rack is a novel part of it, the plates being inserted into it in the ordinary



vertical way, but the rack is then placed in the tank so that the film side of the plates is downwards, thus facilitating the removal of the hypo. The rack holds eighteen plates, and costs, in quarter-plate size, 3s.; in 5 by 4, 3s. 6d.; and in half-plate, 4s. 6d.

The "Phaos" Anastigmat. Sold by A. E. Staley and Co., 19, Tavistock Inn, Holborn Circus, E.C.

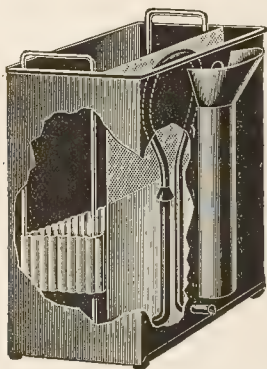
This is a symmetrical double anastigmat of low price but very good quality. The specimen (of 7in. focal length and aperture  $f/6.8$ ) that we have tested proves to be an excellent lens for half-plate work, as it is free from astigmatism, and gives sharp definition in all parts of the plate at full aperture. The field is very slightly curved at  $f/6.8$ , but this is not a matter of much practical moment. As far as the construction of the lens is concerned, the form of two combinations of three cemented lenses, having no air space, is adopted. The lens combinations are symmetrical, thus giving a single lens—either back or front used alone—of double the focus of the combination.



...and consequently working at an aperture of about  $f/13.5$ , sufficiently fast for all long-distance landscape work. The brilliance of the complete lens is remarkable, and the definition to the margin of the plate for which it is made very critical. The single combination also gives good definition at full aperture. The usefulness of  $f/6.8$  lenses of the double anastigmat type has long been proved. They are well suited to all purposes except the most rapid focal-plane work, and when they can be obtained for the prices quoted by Messrs. Halsey they form excellent bargains. The "Phaos" costs 50s. for a  $4\frac{1}{2}$ in. lens, and 72s. 6d. for a 7in. lens, and these are, perhaps, the two most useful focal lengths.

The "Scientific" Plate Washer. Sold by W. Butcher and Sons, Ltd., Camera House, Farringdon Avenue, London, E.C.

An excellently designed washer, which is certainly a great improvement upon the usual type as regards ensuring a constant change of water in which the plates soak, is shown in the drawing, from which it will be seen that the washer consists of a tank, in which is a division, solid half way from the bottom, and perforated in the upper part. A syphon communicates with the main portion of the tank in



which the plates are placed, and is provided with an air-hole, so that its action, which commences when the water covers the top of the bend, is arrested when the water has fallen to the height of the inverted cone, seen half way up the syphon tube. Thus the action of the washer is always to remove the lower portion of the water standing in the tank, and to replace it quickly by a supply of clean water, reaching it through the perforated division. The washer is therefore most economical of water, and most effective in its treatment of the plates. It is made to take both quarter-plates and half-plates, at a price of 3s. 9d.

## New Materials, &c.

"Ensign" Christmas Mounts. Sold by Houghtons Ltd., 88 and 89, High Holborn, London, W.C.

In varieties not so great as to be bewildering, in sizes and shapes all sufficient for photographers' purposes, and throughout of highly tasteful design and colouring, these "Ensign" cards of Messrs. Houghtons deserve to be successful in exact proportion to the care which has obviously been expended on them. Externally they are of attractive appearance, as are many others. Where they surpass many others is in the equal nicety and fitness of what is not exposed to view. Too often the effect of a colour harmony on the covers of the folding mount is destroyed when the card is opened. In these before us as much pains has been given to producing congruity inside and out as to designing a cover which looks well to begin with. It would be idle to attempt descriptions—soft delicate shades of brown will not admit of them any more than will linen textures or craftsmanship of colouring and embossing. Messrs. Houghtons do their best in a full list, illustrated by numerous half-

tone engravings, two of which we use, while yet advising the reader to pay a visit to High Holborn or his local dealer. The prices of the cards, we would say, range from 1s. per dozen; and we ought not to forget to mention the series of very moderately priced calendars



(with space for insertion of photograph), the utility of which outlasts the bathos of a score of Christmas card mottoes of the "In-friendship's-memory-ever-fond" description. And this reminds us



that Messrs. Houghtons have enforced a commendable *tapu* in regard to effulgent and super-Christmassy mottoes. "Sincere wishes" is about as much as one can hope to get from them for 3d. And enough too, say we.

Dr. Traube's Dye Toners (Permanent) for Lantern-Slides. Sold by John J. Griffin and Sons, Ltd., Kingsway, London, W.C.

A most valuable method has been placed in the hands of the lantern-slide worker by the introduction of the dye method of toning worked out by Dr. Traube, and mentioned over twelve months ago in our pages as the Diachrome process, the name given to it by its inventor. The production of slides of a warm tone is a task which is attended with a good deal of difficulty, and indeed, when slides have to be made by reduction, it is often found impossible to get tones of the same vigour or brilliancy which are produced, by over-exposure and restrained development, when printing by contact. And further, numerous as toning processes are, there are few which give a range of tones in which the image is at once permanent and of the requisite stain-like transparency, which is essential for a good slide. In fact, we doubt if three experienced slide-makers could agree that there was one such process. Therefore, a method which allows of a slide being developed in the first instance to a black tone and being afterwards given one or

other of a selection of warm tones is a method which should highly recommend itself to slide-makers, so long as it does not sacrifice other qualities which go to the making of a fine slide, and we can say in regard to the process now under discussion that it certainly does not.

Our own experience of the method dates back much further than the receipt a day or two ago of the outfit from Messrs. Griffin. We have had the method in use for some considerable time by means of materials specially sent by Dr. Traube, and it may be remembered that we briefly described the principle and practice of the process. However, we may say again that the process consists in the conversion of the silver image into silver iodide, and the subsequent attachment to, or combination with, this latter compound of one or other of a series of special dyes. The process thus very simply consists of bleaching the fixed and well washed slide, rinsing it to rid it of the yellow colour of the bleacher (this takes two or three minutes), and then dyeing it up in the dye solution. This latter operation will take about five minutes, but be the time long or short—and it becomes longer as the dye solution is used—the slide requires no attention, and when fully dyed needs only to be washed in running water for a few minutes; or, if the high-lights are slow in becoming perfectly clear of the dye, in a weak solution of acetic acid.

Messrs. Griffin include in the set of six dyes now being issued a better variety than that which we previously used, and the green tone in particular is a remarkably beautiful and effective colour. In the case of all the colours, the surface appearance of the toned slide or the colour of the solution is no serviceable guide to the tone which the slide will have when projected. A slide-maker would stand aghast at transparencies of the vivid colours of the dyes themselves, but the slides when seen only by transmitted light, e.g., on the screen or when held against one end of a long tube, exhibit none of these vivid garish colours.

The following are the colours (I.) of the dye solutions and (II.) of the slides when viewed by transmitted light—i.e., on the screen or pressed against the end of a long cardboard tube held up to daylight:—

I.	II.
Dark red.	Purplish brown.
Light red.	Warm brown.
Litmus blue.	Grey.
Greenish blue.	Greyish green.
Reddish brown.	Sepia.
Purple.	Purplish.

Messrs. Griffin in their circular of instructions direct the making of the slides on their "gaslight" lantern plates, yet their statement that "other plates may not work satisfactorily" allows us to assume that, on the other hand, they may. And in fact, it should be stated for the benefit of the slide-maker, who does not desire to be restricted to plates of the gaslight variety, but requires to make slides by reduction in the camera, that lantern-plates of the rapid class have been found by ourselves in the case of four or five leading brands to work quite well by the Traube process, and, so far as we could say, irrespective of the developer employed for them.

The outfit for the toning process consists of a tube of bleacher, a bottle of acid, and set of six dyes, and is sold at 4s. 6d. Messrs. Griffin point out, though the outfit may seem at first expensive, it is not really so. The colours should be made into solutions and bottled, and will then keep indefinitely, and will also be useable for an almost unlimited number of slides.

**CRITERION NONSTRESS GASLIGHT PAPER.**—The Birmingham Photographic Company, Criterion Works, Stechford, Birmingham, in sending us a sample of this paper, ask us to confirm their claim for it that it possesses the perfect freedom from abrasion-marking which marks the Criterion "Nonstress" paper of the bromide class. And we can say that in exposing the whole contents of the packet after cutting into small pieces we did not obtain one case of abrasion marks, although the particular sample of paper was employed to test the action of a developer when used to the point of exhaustion, and therefore in many cases the film side of the paper was rubbed against the bottom of the dish. The paper, we may add, tones excellently by the hypo-alum and ordinary sulphide toning processes.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

#### FRIDAY, NOVEMBER 6.

Loughborough Photographic Society. "On the Printing, Developing and Toning of Velox Papers." W. F. Slater.  
Sutton Photographic Club. "Slide Making." J. W. S. Burmester.  
Aberdeen Photo Art Club. Members' Lantern Evening.  
Colne Camera Club. "Exhibition of Thornton-Pickard Prize Slides and Apparatus." R. Hesketh.

#### MONDAY, NOVEMBER 9.

Lancaster Photographic Society. "Exhibition of Thornton-Pickard Prize Slides and Apparatus." R. Hesketh.  
Kidderminster and District Photographic Society. "Trimming and Mounting." H. W. West.  
Southport Photographic Society. "On the Printing, Developing and Toning of Velox Papers." W. F. Slater.  
Cripplegate Photographic Society. "Exposure and Development for the Subject." C. W. Coe.  
Bradford Photographic Society. "Photographic Fakes." J. F. Seaman.  
Southampton Camera Club. Amateur Photographer Prize Slides.  
South London Photographic Society. "Making the Best of It." H. Creighton Beckett.  
Gravesend Photographic Society. Members' Lantern Evening.  
Leek Photographic Society. Photography and Focus Prize Slides.

#### TUESDAY, NOVEMBER 10.

Royal Photographic Society. "Flies and their Foes, through Microscope and Camera." Illustrated by the Lantern and Cinematograph." Frank P. Smith.  
Widnes Photographic Society. "Exhibition of Thornton-Pickard Prize Slides and Apparatus." R. Hesketh.  
Seacombe Victoria Photographic Society. "On the Printing, Developing and Toning of Velox Papers." W. F. Slater.  
Hackney Photographic Society. "The Romance of London Streets." A. H. Blake, M.A.  
Leeds Photographic Society. "Holland and Hollanders." James W. Wright.  
Birmingham Photographic Society. Lantern Evening.  
Kinning Park Camera Club, Govan. "Art in Portraiture," and "Camera Notes on Nature." J. Peat Miller.  
Scarborough and District Photographic Society. "Mexico." Dr. Temples Anderson.  
Hanley Photographic Society, Y.M.C.A. "Flashlight Photography with Agfa Specialties." F. C. Hart.

#### WEDNESDAY, NOVEMBER 11.

South Suburban Photographic Society. "Afar in the Fatherland." W. L. F. Wastell, F.R.P.S.  
Wimbledon Park Photographic Society. "Trimming, Mounting and Colouring the Print." A. Osborne.  
L.C.C. School of Photo-Engraving, Bolt-Court. "The Artistic Treatment of Heraldry." W. H. St. John Hope.  
Stockport Photographic Society. "On the Printing, Developing and Toning of Velox Papers." W. F. Slater.  
Borough Polytechnic Photographic Society. "Lantern Slide Making." F. W. Crutenden.  
Croydon Camera Club. "A Talk on Autochromes." T. K. Grant.  
Worcestershire Camera Club and Photographic Survey. "Flashlight Photography with Agfa Specialties." F. C. Hart.  
North Middlesex Photographic Society. "Bromoil." Louis Dick.  
Leeds Camera Club. "Oil Printing." J. W. Charlesworth.

#### THURSDAY, NOVEMBER 12.

Oldham Photographic Society. "Exhibition of Thornton-Pickard Prize Slides and Apparatus." R. Hesketh.  
Fenton Photographic Society. "On the Printing, Developing and Toning of Velox Papers." W. F. Slater.  
Melbourne (London) Camera Club. "Photography in the Vale of Ewyas." S. Savage.  
Richmond Camera Club. Amateur Photographer 1908 Prize Slides.  
Liverpool Amateur Photographic Association. "Some Picturesque Midland and Cotswold Villages." Wm. A. Clark.  
North-West London Photographic Society. Slide Competition.  
Chelsea Photographic Society. "A Chat about Mont Saint Michel." A. E. Littleboy.  
Aberdeen Photo Art Club. Informal Meeting.  
Rugby Photographic Society. "Marine Photography." F. J. Mortimer.  
Maldstone and Institute Camera Club. "What Can be Done with a Hand Camera." T. Dadd.  
Handsworth Photographic Society. "Tabloid Photographic Chemicals."

### ROYAL PHOTOGRAPHIC SOCIETY.

MEETING held Tuesday, November 3, the president, Mr. J. C. S. Mummery, in the chair.

Mr. H. Lambert exhibited a piece of apparatus consisting of a combination of copying, enlarging, and reducing cameras, which can also be used for other purposes, for example, the photography of small objects such as flowers, scientific specimens, etc. Mr. Lambert explained the points connected with the apparatus, which are fully described in a booklet obtainable from his firm, Messrs. Lambert and Land, 15, Alma Place, Thornbury, Bradford.

Mr. Adolf Abrahams then delivered a lecture on the photography of sport, in the course of which he discussed the making of photographs of sporting events more from the point of view of a sportsman than from that of a photographer, although his numerous lantern



of sporting incidents showed him to have been an industrious photographer in this particular field of work. The lecturer had comparatively little to say on the photographic methods involved in obtaining negatives of extremely rapidly moving objects, but it was there that as regards choice of camera he favoured about equally folding focal-plane instrument of the Goerz Anschutz type and a box. He instanced and illustrated the advantage of using a lens long focus when taking photographs of moving objects of considerable perspective depth, such as a line of runners advancing towards a photographer, or a crew of eight on the river.

**ROYDON CAMERA CLUB.**—The syllabus announced for last week at "Mr. F. W. Bennett, F.R.P.S.," would show his method for developing the sulphide process for producing any tone, from pure black, through brown-black and deep brown, to a warm brown," and he well did the lecturer fulfil his task. It might have been expected that the champion of "control in negative development" might have applied the same principles so far as applicable to the development of bromide papers, but this was not the case, and the strictest adherence to standard and identical conditions was insisted on, and rubbed well in at frequent intervals throughout the evening. At another point which the lecturer laid stress on was that fresh developer should be used for every print, and he stated that if a small quantity was employed for a number of prints in succession it was not possible, by inspection of the finished prints, to say in what order they had been developed, a statement which undoubtedly induces Mr. Bennett to be the happy possessor of a very fine pair of eyes. Diamidophenol was preferred to other developers, and the lecturer drew a distinction between this preparation and amidol, chiefly in favour of the former. The strength recommended was: amidophenol, 6 grains; sodium sulphite, 60 grs.; potass bromide, 10 grs.; water, 4 ozs. The paper should be exposed to suit the developer, which should never be weakened unless it were compulsory to do so. Development itself should be semi-automatic. Turning to after-toning, the lecturer said that differences of exposure undoubtedly affected the final tone. Variations of degree of development, no difference. Reduction with ferricyanide and hypo, either general or local, no difference. It was essential that the prints be thoroughly fixed. If an acid fixing bath (recommended) were used immersion beyond the normal time within reasonable limits did no harm; the reverse might, however, be the case if a plain fixing solution were employed. The standard bleaching bath he had adopted was: Potass ferricyanide, 4 grains; potass bromide, 6 grains; water, 1 oz. The fixing bath: Sodium sulphide, 4 grains to the ounce, a good wash being given between the two. By the addition of small quantities of mercuric chloride to the bleaching bath a large variety of results were obtainable, or a mercury bleach alone could be employed. Whether mercury was used or not the prints might be regarded as permanent in the ordinary sense of the term.

In the discussion which followed Mr. W. H. Smith, referring to an alleged difference between diamidophenol and amidol, said that many chemicals sold as pure, and apparently identical, gave different results. A great deal no doubt depended upon the mechanical methods adopted in their manufacture. Dr. Mees pointed out that there were three diamidophenols possible. Two at least of these might occur in varying proportion in any particular sample, and he accounted for the difference observed. As to the question of "permanency," a bromide print (in which term he did not include light prints) consisted of reduced silver. This was so far satisfactory, but the compounds formed in the after-toning processes were a most weird description. He deprecated in particular the use of mercury. The president, Mr. J. M. Sellors, differed from the lecturer in local reduction not affecting the final print when toned; he had the contrary. Mr. E. A. Salt was unhappy about the definition of "permanency" given. Photographic pictures might be "absolutely" permanent, "practically" permanent, "reasonably" permanent, and "fairly" permanent. He objected to this list being extended, which was sufficient to meet all ordinary requirements. Mr. Bennett, in proposing a vote of thanks, complimented Mr. Bennett on an really excellent and instructive lecture. Personally, he had never used a bromide print in his life, "but one never knew what one might be reduced to." Mr. Bennett, in reply, said that if the last developer were never reduced beyond the bromide stage (a supposition which seems to involve some chemical difficulties) he might consider himself lucky. As to the question of "permanency," he had applied very severe tests, and adhered to the opinion he had expressed.

## Commercial & Legal Intelligence

**CHARGE OF THEFT.**—The further hearing of the case reported in the "B.J." of last week, wherein a photographer named De Jornette Plummer, a coloured man, charged a photographer named Thomas Styles with stealing some 300 negatives and photographs, was concluded at the Hastings Borough Quarter Sessions on October 28. The contention of the defence was that the photos and negatives were practically valueless, that many of them had been given by prosecutor's manageress to Styles as specimens of his own work, and that Plummer had declared he would crush Styles. Without waiting to hear the defence, the jury acquitted accused, a crowded court loudly cheering the decision. The Recorder said it was a trade dispute, and criminal proceedings should never have been instituted. Styles left the court without a stain on his character.

**A FOLKESTONE BANKRUPTCY.**—Benjamin Knight, photographer, Fairlawn, Lyminge, Canterbury, carrying on business at High Street, Folkestone, appeared for his public examination at the Canterbury Bankruptcy Court on Thursday in last week. The summary of accounts filed by the debtor showed liabilities estimated at £219 16s. 9d., and assets returned at £6 18s. 10d. Replying to questions put by the Official Receiver, debtor said he started business in 1905 with a small capital of his own. Subsequently he had businesses at Dover and Folkestone. He gave up the Dover business about twelve months ago, and at that time he owed £100. He attributed his insolvency to bad trade and competition. Debtor's age was twenty-one years and four months.

**ACTION FOR RETURN OF DEPOSIT.**—At the Birmingham Police-court, on Tuesday in last week, A. Marsh, of 190, Monument Road, Birmingham, trading as the Record Photo Printing Company, was summoned that he, being entrusted with £20, the money of Ernest Roy Simms, did unlawfully and fraudulently convert the same to his own use and benefit.

Mr. P. Baker, in opening the case, said that the prosecutor, who lived at 45, Crabtree Road, Brookfields, Birmingham, answered an advertisement which had been inserted by the defendant in an evening paper for a traveller and collector. On applying for the situation the prosecutor was told that he was a very suitable applicant, and would probably get the situation. The wages would be 30s. a week, but he would be required to find £20 as a guarantee of his honesty. On September 9 he parted with his money to the defendant, who said he would either give him a receipt for it, or he could take it on his word as a gentleman that the money should be placed in the bank and returned to him when he left, providing that he had been honest. Prosecutor entered upon the duties, and for two weeks received 30s. a week, but the third week defendant made excuses and only paid him 24s. 6d. The fourth week he was told there was no work and no money, and he had better take a holiday. After that defendant advised him to get another situation, and promised to help him to obtain other employment. Prosecutor applied to the defendant for his £20 deposit to be returned. Some correspondence passed between them, and ultimately defendant wrote saying he could not understand what prosecutor meant by "his deposit," as he had had more than his money's worth by obtaining an insight into the business.

Mr. Simmonds said the defence was that the money was paid as a premium for learning the business.

Prosecutor gave evidence, stating that he left the army in June last, and then had £50 which he had saved. One day the defendant wrote a few things down in a pocket book and gave it to him, saying he would try and teach him the business, and on another occasion he got him to help in the dark-room. He afterwards told him to look out for another situation, and inserted an advertisement in a newspaper recommending him. Afterwards, when prosecutor asked him for the £20 deposit, defendant said he could not give it to him, because he was in a fix, and the money was involved in the business. Up to the present time he had not received any of the money back. He had never entered into any agreement with the defendant to be taught the practical side of the business.

Cross-examined by Mr. Simmonds.—On one occasion the defendant took him to King's Heath when on a photographing expedition. This, however, was not to teach him how to use the camera, but to carry the bag. He admitted that defendant did try to teach him how to put

the plates in the camera once, but denied that he attended at defendant's house four evenings to be taught the practical side of the business. Prosecutor denied that the word premium was ever used in connection with the £20 deposit. He admitted, however, that on two occasions defendant sent him out alone with the camera to try and take a photograph of a road at Edgbaston.

The Deputy-Stipendiary held that this was proof that the prosecutor had received some instruction, otherwise he would not have been entrusted with the camera. The summons would be dismissed.

Mr. Carter (magistrate's clerk) suggested that the defendant might give the prosecutor a portion of his £20 back. It seemed a lot of money to pay for rather perfunctory teaching.

Mr. Simmonds said he would consult his client.

## News and Notes.

**THE AEROGRAPH CO.**—We learn that Mr. A. Aufholz has joined the Aerograph Co. as advertisement manager, to the duties of which position he brings not only a very intimate knowledge of the business, and of the manifold applications of the air-brush method, but also a most successful record as an actual designer and constructor of air-brush instruments, accessories, and installations. One thus acquainted with the business at all points should be a gain to the firm which Mr. A. L. Burdick has so successfully built up on his numerous mechanical inventions connected with the spray method of colouring.

**MESSRS. F. E. JONES AND CO.** notify us that they have unfortunately had their show-rooms and offices burnt out. A wooden beam caught fire from an overheated stove, and, having smouldered all night, broke into flame early on Thursday morning last week. Messrs. Jones are, however, carrying on business in temporary offices at the same address, 22, Gray's Inn Road, Holborn, W.C.

**THE FORREST AEROPLANE.**—According to a paragraph in the "Edinburgh Evening News," Mr. George Forrest, a photographer, of Brechin, is the inventor of a flying machine, a trial of which he hopes to make on an early date.

**NORTHERN PHOTOGRAPHIC EXHIBITION.**—With the close of the "Royal" and "Salon" we would draw our readers' attention to this important exhibition, which has now taken a high place in pictorial photography, and can certainly be well recognised as the most important in the provinces. It is run on broad progressive principles, and is well worthy of support by exhibitors. It will be remembered that this series of exhibitions are held alternately in Manchester and Liverpool, the one held last year in the latter town having been the greatest success of the series. The forthcoming exhibition will be held in Manchester, January 6 to 27, three fine rooms being placed at the disposal of the Manchester Amateur Photographic Society for this purpose. Pictorial photography, lantern slides, and colour work are to be the leading features, and already promises have been received from most of the leading workers in this country, and a good measure of support is expected from Russia, India, Italy, Germany, Austria, France, South Africa, and America.

The President of the Royal Photographic Society, Mr. J. C. S. Mummery, will act as judge, and all work hung will pass before him.

Fifteen handsome plaques, about 9x5, will be placed in his hands for awards. The plaque has been specially designed and modelled at the Manchester School of Art, and will be reproduced by the "Kupron" Company. Those of our readers who have not yet received entry forms should obtain one from the Hon. Sec., Mr. S. L. Coulthurst, Broad Oak Road, Worsley, Manchester. Special attention is to be given to Autochrome and all forms of colour photography, and to this we draw the special attention of our readers. A specially fine catalogue, on the model of past years, is being prepared, and we are informed that it will contain upwards of 35 full-page illustrations, the size of page being 10 x 8. Lantern lectures on photographic subjects have been arranged for each of the nineteen evenings the exhibition is open.

## Correspondence.

- \**Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*
- \**We do not undertake responsibility for the opinions expressed in our correspondents.*

### LANTERN SLIDES BY REVERSAL.

To the Editors.

Gentlemen,—Will you kindly permit me, through your columns, to thank Mr. Fenske for the suggestion made in his letter of last week's issue to the effect that it would be advisable to expose lantern glass slide towards the lens, in the process of reversal described in the "B.J." for October 23.

I will certainly give the suggestion a trial when opportunity affords, though I must confess that neither does the theory nor the results of the *rationale* of my process encourage me in anticipating better results from its adoption, nor do I follow Mr. Fenske's argument on which he bases his suggestion—viz., that if the image has been through the glass the reversal is easier and more complete, the image being on the top of the film; whereas, in ordinary exposure, film to lens, the image is at the bottom, that is, near the glass.

Surely the locations of the images in the two methods of exposure are just the very opposite to those here alleged.

I would submit that the reason for the superior results Mr. Fenske obtained when using a screen may have been due solely to the fact that the actual exposure with the screen was not exactly equivalent to the exposure without it, and just happened to be better adapted to the reversal process, the success of which depends so largely on the exact amount of exposure (as measured by the density of the negative image) that the plate receives.

I have on several occasions experimented on the method of reversal referred to in the last paragraph of Mr. Fenske's letter—a method which dates back to the collodion era of photography, and which was first described by Sebatier. But I found the method so uneconomical in operation and generally so unsatisfactory in its results that I abandoned all hope of its successful adaptation to the production of passable lantern slides.—Yours faithfully,

November 2, 1908.

DOUGLAS CARNE

## Answers to Correspondents.

- \**All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C."* Inattention to this ensures delay.
- \**Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.*
- \**Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & CO., 24, Wellington Street, Strand, London, W.C.*
- \**For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24 Wellington Street, Strand, will undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, and two unmounted copies of each photograph must be sent with the fee.*

### PHOTOGRAPHS REGISTERED:—

- Mrs. M. Egerton, Cheynton Cottage, Alresford, Hants. Photograph of the interior of the Tichborne Dole.
- Mrs. M. Grainger, High Street, Heanor, Derbyshire. Photograph of Becket Square, Heanor, Derbyshire, Queen's Jubilee, 1887.
- W. E. Turtin, 59, Blacker Road, Birkby, Huddersfield. Photographs of the Wagstaff, Wm. Kitchen, and Percy Holroyd, all Northern Union Football Players.
- L. Roberts, 140, Fairbridge Road, Upper Holloway, London, N. Photograph of the Rev. T. H. Arber, M.A.; Rev. W. Stephens Muntz, B.D., LL.D., Rev. A. W. Couch, B.A.
- W. H. Warburton, Harris Promenade, Douglas, Isle-of-Man. Photograph of the Manz House of Keys (the House in Session).
- Cristabel O'Shea, 7, Lewes Crescent, Brighton. Three Photographs of the Summers, Bower; three photographs of J. W. Summers and H. Paul, Esq.

**ARTIFICIAL LIGHT.**—Of the two we should choose incandescent which is capable of good work for heads and busts, but i



ual to the work of an arc lamp. Several incandescent lamps supplied by the Tress Co.

**OUR PHOTOGRAPHY.**—1. Could you oblige me by giving me the address of the Hoechst Dye Works mentioned by E. J. Wall in his book on Colour Photography, or their agents in this country, they have such? 2. Also can you tell me where I can get Dr. H. Smith's, of Zurich, "Uto" paper, and the Warner-Powrie plates? 3. Regarding the paragraph in the correspondence in our October "Colour Supplement," re bathing Autochrome plates in potass. metabisulphite solution, and then developing by yellow light, can you tell me if this can be done with Panchromatic plates (Wratten and Wainwright's)? I have tried it and the plates fogged, but this may have been owing to some (unknown to me) defective condition.—ALEX. HUTTON.

1. Meister Lucius and Brüning, Hoechst, Frankfort-on-Maine, or Ernst Bros., 17, Philip Lane, E.C. 2. Neither are at present obtainable, so far as our information goes. 3. We have no reason for assuming that it would affect all plates similarly, in fact, experiences are discordant as to its effect with Autochromes.

**RIGHT.**—I recently copyrighted a negative, describing it as a "photographic negative"; part of the description was scratched out, the "ic" of photographic, and the word "negative," and the form was returned with instruction to describe of what the photograph was I had sent a print. Does the copyrighting of a photograph secure the copyright in the negative?—S. H. C.

If you turn to the "Copyright Act" on page 906 of the "Almanac" you will see that the wording expressly mentions the negative. Protection is given to the "photograph and the negative thereof." It is not usual to enter the subject as a negative when registering.

**PAPER.**—3. Are self-toning C. C. papers largely used by professionals of repute? 4. Which do you consider the best camera for Press work? I have a half-plate focal-plane reflex, but it is rather a heavy thing to take about.—X. Y. Z.

Neither are quite as permanent as collodion paper toned with gold bath followed by platinum. 3. It is not easy to say, but we should judge that the most general method is the gold-toning, although the use of self-toning papers is undoubtedly on the increase. 4. It is an excellent camera for a large portion of Press work, and your particular make of instrument is almost always to be seen at Press functions. For sport and general photography of rapidly moving objects a camera of the Leica-Anschutz type is more generally employed.

**(Rochdale).**—You must prove damages. In the case of infringement after registration you can sue for penalties, in which case you have only to prove the infringement. See the Copyright Act, page 909 of the "Almanac."

**GUILD (Manitoba).**—1. The difference lies in the mechanical construction (automatic) of the arcs. The lamp is quite different in construction from the usual pattern of open arc. 2. Both types of arc are largely used here, one as much as the other should say. 3. The colours used are the secret of the manufacturers. Up to now they have the reputation of permanency.

**Q.**—Try a warm solution of oxalic acid.

**ON NEGATIVE.**—Could you kindly let me know how the stains on the enclosed negative? It came when developing (metol-roquinone), etc. It was near no hypo, and I am very careful to touch the film when changing. As I take a good few at a time I should be glad if you will enlighten me on the matter. I say I have had three like it, and the stains are all alike, in about the same place.—T. D. S.

The marks are all alike and in the same place it would appear either the dark slide is at fault or else the packer or maker of the plates. If all the plates were exposed in the same slide we should suspect that, but if this was not the case we should send negatives to manufacturers and ask their opinion. The appearance suggests a grease stain on the plate, but we cannot suggest any special cause.

**PRINTS.**—We have just had the enclosed print returned to a customer, and should be glad to know your opinion as to the cause of the fading. The print is about fifteen months old — sulpho-cyanide bath. It was washed with a batch

the remainder of which are all right. You can see the class of board it is mounted on.—STICKYBACK.

The lines visible on the print suggest that this particular one has had less perfect washing than the others in the same batch, owing to prints sticking together in the wash water. At the same time the mount looks doubtful, and we suspect it is not of very pure material. You do not say what mountant was used. This, of course, might be responsible for the effect, and possibly the lines simply show brush-marks. We should test the mount for hypo, and if it passes the test the cause must obviously be one of the other two things. If the print was not quite perfectly washed and the mountant was slightly acid, the effect would be produced very readily.

J. C. W.—We doubt if anything will now move this stain, but you might try a bath of alum and citric acid. If this fails, the only remedy we can suggest is to bleach the image and redevelop. A suitable bleacher would be potassium bichromate, 10 grains; hydrochloric acid, 20 minims; water, 1 oz.

**GROUND GLASS VARNISH.**—Please give me formula for ground glass varnish, to stand heat, as on incandescent electric globes.—F. HARTLEY.

We fear the ordinary sandarac varnish would be useless. The lamps are usually matted, we believe, by a mechanical sand-blast or similar method.

**AUTOCHROMES.**—(1) I always place Autochromes before developing for three minutes in a 3 per cent. solution of formalin to prevent frilling. A letter in the "B.J." recommended placing the Autochrome in a 3 per cent. solution of potassium metabisulphite for thirty seconds in order to destroy the colour-sensitiveness, and thus enable one to develop in a bright yellow light. Can I combine these two operations without injury to the plate, and use a solution composed of formalin 3 parts, water 100 parts, and potassium metabisulphite 3 parts? (2) With the pyro I always use sodium bisulphite as a preservative, and I also use this chemical for clearing off stain after the acid permanganate. Will potassium metabisulphite be equally effective in both cases?—E. Y. E. N.

(1) We are doubtful as to the effect of combining formalin with an acid sulphite. It is possible that the acid would prevent the hardening effect of the formalin. You might use formalin alone and follow with the pyro acid sulphite solution, for, say, twenty seconds. Then pour off the pyro solution, add the ammonia to it, and re-flood the plate. We are doubtful as to the safety of the "bright yellow light." Why not use Lumière's special green light? The materials are cheap and the light very pleasant to work by.

(2) Metabisulphite should be quite as effective, but it cannot be made up in such a strong solution, so the soda-bisulphite is more convenient.

**LENS FOR GROUPS.**—In "Answers to Correspondents" of April 17 last, page 316, I note your advice to "Lens Query" is to get a "Stigmatic portrait lens working at  $f/4$  for groups." This is what I want, as my 8 $\frac{1}{2}$ in. focus portrait lens (first-class English make) has not sufficient depth of focus or definition (as I don't suppose any portrait lens has) for groups of four, two sitting and two standing behind, unless I stop it down to  $f/6$ . This is too slow for gaslight work. If I am right in thinking that it is a Stigmatic portrait lens you advise for groups, please let me know, through your journal, where I can get one. Dallmeyer, Ross, etc., I have no doubt make them, but their prices are too high for my class of work.—P. STEWART.

The Stigmatic lens is only made by Dallmeyer's. But you must keep it in mind that no lens, whatever its make, with a large aperture will give much "depth of focus" unless it is stopped down. The portrait ( $f/4$ ) Stigmatic, however, is fitted so that the focus can be diffused, and that gives more-apparent depth.

**RESTORING PAINTINGS.**—I should feel obliged if you could kindly give me formula for cleaning and restoring oil paintings. I am a photographer and oil artist, and am often asked to do this class of work. I have on hand now a large-size painting (size about 50 x 30), which I should say is over 100 years old, and is quite black with age, and almost invisible, and cannot repaint without cleaning, as I have done in previous cases.—OIL PAINTING.

There is no formula for this kind of work; it is a business that

requires considerable knack and experience. In the first place the old varnish has to be removed, and that is done by rubbing it off with the finger, which is a very tedious work, and requires considerable time and patience. It is not within our province to give detailed instructions for restoring oil paintings. We should advise you to get the "Carver and Gilder's Guide," published by Kent and Co., Paternoster Row, E.C., if you are going to attempt to do the work yourself; or, better still, if the picture is a valuable one, place it in the hands of a professional picture restorer.

**LENS QUERY.**—I have a lens and engraved on same is "P.A.C.S.A., 43, Charterhouse Square, E.C.,  $8\frac{1}{2} \times 6\frac{1}{2}$ , wide angle, 740." Can you tell me through the medium of your journal value of same second-hand?—ALBERT DAY.

P.A.C.S.A. means the Photographic Artists' Co-operative Supply Association, a concern that became defunct many years ago. The lens has practically no market value.

**IVORY FOR MINIATURES.**—Can you tell us cheapest houses supplying bleached ivory for miniature work?—DISCLES.

All artists' colourmen supply ivory for miniature painting, but we cannot say which of them supply it the cheapest. Better procure one or two price lists and compare.

**JACKS BROS.**—We would suggest that you remove the partition between the chimney breast and the south-east side. This will give you a good length. The fact that you would have to work the studio a little crosswise is of no moment whatever. As the roof is so low the glass had better be carried up about half way, where the tiles now are, and commenced 3ft. or 3ft. 6in. from the floor. As you say that the south-west side is blocked by high buildings there is no need for glass on that side.

**CARBON PRINTS, ETC.**—(1) Some time ago you published particulars for carbon prints on vellum. Will you please give dates of your journal in which they appeared? (2) I have been trying to block out backgrounds, but cannot get a good clean outline round figures for sketching fresh backgrounds. Can you tell me how this is best done? Is a pen used or brush, and shall I work on film? I am told it is done by means of a transparency (carbon) and then printed by single transfer. Your valuable help will be much appreciated.—OTALP.

(1) The article appeared in the "Journal" for January 17 of this year. (2) The blocking out is generally done with a brush, and on the film side of the negative. If you do not get a clear outline it is because you do not do the work neatly enough. Photopake, as sold by the Vanguard Company, is a good medium to use.

**DUN-DOWN.**—Name and address, not necessarily for publication, should accompany inquiries to be answered in this column.

**PRICES.**—I have photographed three carved mantelpieces on whet-plates, charging 5s. for each exposure and one print of each, receiving an additional order of six copies from each unmounted at 2s. each. The customer now refuses payment on the ground of very excessive price, offering me 7d. only for each copy, quoting from a catalogue of which I have no knowledge, and further demands my negatives without additional payment. Would you kindly answer the following queries through your esteemed "Answers to Correspondents" column. 1. Is 5s. for one exposure and one print excessive? 2. Is 2s. for each additional copy excessive? 3. Am I obliged to give up my negatives without further payment?—J. A. McPHAIL.

1. A moderate price, certainly, for good work. 2. It depends on the class of work; they should be first-rate prints at this price. 3. You cannot be compelled to give up the negative under any circumstances, unless you specially quoted for supplying them to the customer.

**PRESERVING NEGATIVES.**—I should be glad to hear what you think the best way to preserve the gelatine negatives of to-day. I have tried several methods, but none seem quite satisfactory. They do not keep anyhow with me so well as the old collodion ones; varnished or not varnished they deteriorate.—CLIMAX.

The best protection we can suggest is a celluloid varnish such as that of the Vanguard Co.

**A CASE OF DELIVERY.**—I had occasion to take a series of twelve views for a country dealer from which he gave me an order for a great gross. I have sent him to date a consignment of 56 dozen.

He now writes saying, "Please stop printing for a time as d has fallen off." What he has had he has paid for, but I like to know if I can finish off his order and send in for b of account, as I have put all other work on one side for I do not want to have this one order hanging on indefinitely it now appears likely to do. I had the order verbally.—

PRINTER.

So far as we can judge you cannot force acceptance remainder in view of your acceptance of payment for part order. It seems to us that such partial payment entitles you to ask for delivery in batches.

**BACKGROUNDS.**—Kindly say (1) whether all the necessary tints white to black can be produced by the artists' powdered colour mentioned a few weeks back in your "Ex-Cathedra." Where can I get suitable copies for backgrounds? Those advertisement pages of the "Almanac" or "Journal" may copyright, whilst the natural pictures produced by the lack that good composition so necessary in artistic work. There on the market any fixed focus cameras having a working aperture than  $f/8$ ?—ARTIST.

(1) Apply to Marion and Co., 22 and 23, Soho Square, L.W., or Reeves and Co., Farringdon Avenue, E.C. (2) We have none, except those in paintings, etc., copyright in which has expired. (3) Not that we know of, nor is there likely to be seeing that depth at  $f/7$  and larger is so small. See the title of the "Almanac," p. 960.

**GEO. COLLINS.**—Of the two materials sent, the darker one is the best for your aspect of studio. But the fabric is a little thin though the colour is right enough. We should think those who supplied you with the patterns could procure thicker material, if they have it not in stock. (2) In your spring rollers for the roof would be the more convenient and for the sides curtains running on rods or wires.

**ALBUMEN PAPER.**—I wanted a little albumen paper to see and I ordered some from our local chemist and photographer, and he obtained it for me. When I opened the paper was met with a most offensive smell; in fact, a "fair stink" that the case with this paper?—NOVICE.

Some albumen papers have a very offensive odour, while others have not. The odour is due to the paper being prepared from decomposed albumen, but that does not seem to interfere with working.

**THE LATE RICHARD WICKS.**—Many of our readers will remember the death of Mr. Richard Wicks (of the Brighton Photographic Company), who was well known among professional photographers. The deceased was 71 years of age. His experience of photography dated back to the Daguerreotype era, and he practised the art in the West Indies in 1860. His knowledge of the older photographic processes was very extensive. He died of a paralytic stroke only four days' illness, and was buried on the 29th ult. at Brighton. The deceased gentleman had been in business in Brighton for many years, and was greatly respected in the town.

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## The British Journal of Photography

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## SUMMARY.

"The British Journal Almanac."—Our publishers desire to advise readers that nearly the whole edition is exhausted, and that therefore orders for the "Almanac" should be put in without delay.

An exhibition of the work of Mr. William Crooke is now being held by the Edinburgh Photographic Society. (P. 872.)

An American worker has advised a method of local development for use in studio work. (P. 865.)

Some practical points in the cutting up of prints and mounts and the rapid packing of photographs are mentioned on page 862.

Advertisement Photography.—One or two notes on this branch of professional work are given by an American photo-engraver. (P. 870.)

Test Negatives.—A further article on the method of making multiple-negative test-plate by means of cinematograph film appears on page 863, and describes the method of preparing a negative in such a form that it can be used with any series of separated strips.

Screen-plates by a ceramic process and by a selected dye process are among the patents of the week. (P. 873.)

Mr. J. F. Duthie has contributed his experience in the photography of rapidly moving objects. (P. 871.)

It is announced that "Australian Kodak, Limited," under the direction of Messrs. Baker and Rouse, will manufacture Kodaks, and Kodak roll-film, plates, and paper, in Australia. (P. 872.)

Testing Shutter Speeds.—Mr. Douglas Carnegie describes a simple method of testing the speed of a shutter by photographing a falling dy. (P. 864.)

Dr. W. J. Russell, in continuance of his researches on the action of photographic bodies on the photographic plate in the dark, has examined the action of resin and similar substances, and has discovered a difference in the action of coals on a dry-plate which would appear to have some value as a means of distinguishing between different classes of coal. (P. 866.)

## EX CATHEDRA.

### Lectures at the Society of Arts.

The arrangements for the session of lectures upon scientific and industrial subjects at the Royal Society of Arts are now published, and are found to contain several fixtures of photographic interest. On December 9, Messrs. G. Albert Smith and Charles Urban are to read a paper on "Cinematography in Natural Colours," which will doubtless be accompanied by a demonstration of the remarkable results obtained. Although these latter have been shown semi-privately, they have not yet been brought before a society, and the paper should therefore be of exceptional interest. Among the Cantor series of lectures, that on "Methods of Artificial Illumination," by Leon Gaster, should be of importance to photographers, and we may therefore say that, though the proceedings of the Royal Society of Arts are officially confined to members and their friends, the courtesy of admission to a particular lecture is usually granted on application to the secretary, at John Street, Adelphi, London, W.C.

\* \* \*

### Formula for Profit and Loss.

We are afraid we do not know enough of the forms which German humour may take to decide whether a recently reported address by Dr. Miethe on the application of algebra to the supervision of business accounts is to be taken in earnest or as a piece of mock seriousness. In it is given the formula:—

$$\sqrt{a/b}(A + c/d \cdot M + C),$$

in which, so we are told, the symbols must have certain values in the case of a business which is prosperous, others in the case of one being run at a loss. We doubt if any material consolation in regard to a concern which is, say, £600 on the wrong side is derivable from a confirmation of this fact by the formula, or whether a pressing creditor, by a Germanised version of the methods of Mr. Harold Skimpole, could be convinced that, according to the formula, it should be the easiest thing in the world for him to collect his account, that virtually the money is in his hands, and in that case why prolong a distressing interview?

\* \* \*

### Concentrated Developers.

Many of our correspondents express a preference for strong stock solutions of developers, and sometimes we have to point out that the solutions cannot be as concentrated as they wish, owing to the slight solubility of some of the ingredients. As most photographers know, Mr. Watkins has recently introduced a very excellent developer in such a concentrated form that some of the ingredients are not dissolved. By inverting the bottle three times the solid matter is brought

B

into a state of suspension, in which condition the required quantity can be measured out. When diluted to a working strength, the undissolved particles quickly go into solution, and so we get the developer into working order. Such a concentrated preparation as this cannot properly be described as a solution, but it is a very convenient substitute for one. It is far easier to measure out the solid when suspended in water than it is to weigh it in the dry state, and there is no reason why the idea should not be more often adopted. It is not applicable to a good many substances that form large crystals, but it is to many developers that are not very readily soluble. It is, however, very necessary to be sure that the suspended matter is quite dissolved before applying the developer to the plate, otherwise spots will most certainly appear on the film. For this reason such a developer should be mixed about ten minutes before use, and it should be carefully inspected in a good light. Solution can be hastened by pouring the solution backwards and forwards from one measure to another, and the safest course is to do this for half a dozen times, and then wait ten minutes. The advantage of a clean, perfect solution is, however, so great, that a little trouble is worth taking. It is certainly always worth while turning up the light to examine the solution before actually starting on development, and, in the case of time development as distinguished from the factorial system, there is no objection to occasional full light in the dark-room.

\* \* \*

#### **Dissolving Sulphite.**

Many workers make a great fuss about the preparation of a fresh solution of sodium sulphite on the ground that it does not dissolve readily, and to save trouble they often use stale solution, even though fully aware that fresh ones are the most reliable. In point of fact, sulphite dissolves very readily indeed, and when it fails to do so it is more often than not due to the use of hot water. It is much less soluble in boiling water than in water at a much lower temperature, and it dissolves with the greatest rapidity in water at about 90 deg. F. If put in a bottle with water at this temperature and well shaken, the rate at which the crystals disappear will probably be a surprise to those who quite unconsciously have always hindered its solution by the use of hot water. If required to keep the solution in cold weather, it is generally found that a strong solution that has once been heated up to boiling point will not crystallise out so readily as one that has never been heated, but the heat should not be applied until after solution is complete. The attempt to boil the liquid while crystals remain in it simply delays solution for a very long time.

#### **THE USES OF A PAPER-CUTTER FOR PACKING AND OTHER PURPOSES.**

We recently noticed in the "Answers" column a query for a machine to cut a number of prints and attached dry-mounting tissues together. There are various machines to cut quantities of paper in this fashion, but for the particular purpose we can scarcely think that the result would be quite satisfactory. For instance, the head on a dozen similar untrimmed prints will never be in exactly the same position in each one, so that were they trimmed in a pile the position of the head or other feature would in some be incorrect. This defect would be the more apparent in a photograph containing perpendiculars, such as architectural work, street scenes, or studio work with a panelled background or one containing a pillar. Although possessing drawbacks for wholesale trimming of prints the recent acquisition of a cutting machine leads us to recommend a similar purchase to a business of any size. A great saving of time will be effected in the smallest place, whilst its use in a large business would greatly simplify and quicken certain operations. The work the machine will do can be equally well done by the local printer, but the time and trouble taken to cart material off the premises, and the convenience of having the machine always ready to hand, make the purchase of a cutter the most economical policy.

The most perfect machines, and those with the greatest capacity, are the various types of the printing trade guillotine, varying from the lever press of twelve-inch cut and costing about six pounds, to the elaborate electrically-worked instruments running into hundreds. With a machine of less than twenty-six inch cut, however, one will be constantly handicapped, and seeing that a proper guillotine in this size would be of an excessive price for a photographer, and the chief advantage of these machines—viz. the great thickness they can cut at one stroke—is not of much advantage to us, we have obtained an extra large specimen of blunt knife print-trimmer that costs three pounds odd only and gives a twenty-six inch cut. Similar machines are listed by all the big dealers.

For accuracy and ease in working it is advisable to fix the machine with a fence that will move absolutely parallel to the blade and can be fixed rigidly in any position. This fence not only renders it easy to make any number of cuts of exactly the same width (determined by the distance of fence from knife), but it also ensures perfect correctness of right-angles—a most important matter when cutting mounts or tints. The beds of these machines are carefully ruled with squares, but it is much simpler to be able to push the work up to the fence. This addition can be made in wood by the joiner and should not cost more

#### **THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC FOR 1909.**

Edited by GEORGE E. BROWN, F.I.C.

THE forty-eighth annual issue of THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC will be published on December 1. This year's ALMANAC reached a total of over 1,000 pages, and the entire edition of 25,000 copies was sold out immediately. Of no other photographic book ever issued can two such unique facts be recorded. The edition for 1909 will also consist of 25,000 copies.

The editorial article will deal very completely with the important subject of

#### **REFLEX CAMERAS,**

and the systematic review of the work of the year under the title "Epitome of Progress" will be a strong feature of the volume.

The lines followed in the previous editions of the

ALMANAC will be maintained in general, but in a number of particulars the arrangement of the volume for 1909 will be modified to make it more than ever the book of universal photographic reference.

The ALMANAC for 1909 will appeal to photographers all the world over as a daily reference guide in practical work. The standard matter and formulæ will be revised and added to where necessary, and, wherever practicable, new features of an informative nature will be added.

**NOTICE—IMPORTANT.**—Our publishers ask us to inform agents that the issue of 25,000 copies is now almost booked and, as a second edition will not be printed, those news agents and dealers who have not yet sent in their orders are advised to do so without delay.



an half-a-sovereign. If the man does not understand, advise sending him to see the printer's machine, and he will grasp the idea at once. It may assist the reader if we enumerate a few of the uses to which the machine can be put, though its use and convenience should be fairly obvious. For trimming single prints larger than whole-plate size it is handier than keeping large shapes that can break, whilst the thickness of the paper makes no reference to the cleanness of cut. For cutting up sensitized paper in quantities up to two quires it is far quicker than with the knife or tearing. The clean edge is preferable to the rough one if the paper is cut very close to the finished size, whilst there is no danger of small bits getting between negative and paper. Nowadays it is not advisable to stock many large 12 x 10 or 15 x 12 prints, since taste with regard to colour varies so much. The mount paper of selected tint on to a mounting board required, trimming afterwards. Photographers who will find the machine a saver of time and energy, use the thickest card is cut perfectly clean, with no effort, a tenth of the time taken to use the mount-cutting knife. For folders, which are blocked with name and address in hand-press, the saving is equally great, it being most impossible to carry a full stock of printed folders of the innumerable sizes and colours from midget to 12 x 10 both upright and view way. In the case of the favourite cabinet size, 10 x 8 outside size, which cuts six to the sheet, one would get a lot of waste or odd sizes if all the prints were cut from one sheet and the folders from the other. With the machine one cuts an equal number of prints and folders to match at the same time, two mounts in a 3 in. x 8 in. and two folders 16½ in. x 10½ in., which just makes the full sheet.

Whilst the machine is most indispensable for trimming prints of all descriptions, it will be found to wonderfully simplify packing, at present a troublesome matter that gets little attention from photographers. Packing seems simple, but as usually carried out, especially for the post, is lengthy and frequently not too neat. We think that a great impression conveyed to the recipient of the parcel comes to no slight degree their appreciation of the contents. The client would not admit this influence, probably does not know it, but that it exists is recognised and advantage taken of it by all the big retailers who put up their prints ready packed. The photographs cost money, and they should be wrapped up with all the care the jeweller exercises with his goods, so as to convey an idea of value. We think it advisable to place prints complete in their folders, first in a wrapper of good paper fixed with sealing wax impressed with an initial, then either between corrugated paper, if for stiff mounts, or between stout strawboard if paper ones, enclosed in the outer wrapper and tie. All this sounds tedious, but if packing arrangements are made in a methodical fashion it is as easy to do well as badly.

In a business such as a photographer's, where the outside dimensions of various stock sizes are similar, it is easy to systematise the matter. If your mounts are not all of equal area in the respective sizes, you should take an opportunity of bringing them into line. It simplifies matters from beginning to end to have all mounts, all papers, all tissues of the same size. We may name as most economical carte mount size 6 x 4, cabinet 10 x 6, whole plate 12 x 10. For these sizes we cut a number of sheets of strawboard and corrugated paper to dimensions very slightly larger and keep on special shelves for each size. The white paper and the brown are also cut to correct sizes for use, the machine getting through sheets of brown at one cut. With everything ready stacked in their positions and a good string-holder, it becomes almost a pleasure to pack after long association

with the untidy time and space wasting muddle to be noticed in many photographic establishments. Sealing was rather a nuisance until we obtained one of the small Bunsen burners, price one shilling, used by chemists, and had it fixed in a convenient position on the bench. With a method of this sort, almost as quick and much cheaper than the old book-form wrapper, it becomes a good business policy to offer on one's circulars to pack individual prints for customers. This offer will be eagerly accepted, especially at Christmas, and no doubt would bring extra business. Many people who would otherwise purchase photographs fight shy of the labour entailed in their distribution. That this is natural must be admitted, for troublesome as it is to us, how much more so must it be to the ordinary household that always lacks such necessities as card, paper, string, and labels. With regard to these latter, to save trouble, avoid mistakes, and secure an extra advertisement, the client should be supplied with your stick-on labels, upon which to write the necessary name and address.

### CELLULOSE TEST NEGATIVES.

In our issue for August 21 we pointed out the usefulness of test plates made up by mounting short lengths of cinematograph films on a glass plate, and varying the opacities of each picture by masks of tracing-paper or papier minéral. When made up in this way it is obvious that the paper series of opacities must lie between the film images and the glass, therefore if different test plates with varying scales are required each one must be made complete in itself. It is far more convenient to have the series of small pictures mounted on celluloid, for then different series of paper gradations can be used in conjunction with the same set of film pictures. After a little experimenting and a few failures we have found a very satisfactory and easy way of mounting the films on celluloid, and a description of it may be useful. If we fix the cinematograph films across the length of the plate we can get three strips side by side, and fifteen pictures in all on a quarter-plate. By mounting the strips across the width of a plate we can, however, get sixteen pictures in the same space, so this is the method we have adopted. First cut four strips of film, each containing six pictures. From two of these strips trim off the perforations on both sides, and from one of the others trim off the left-hand margin, and from the last strip the right-hand one. The four strips when placed side by side will now measure just about 4½ inches. The total length of film used will be about 18 inches, and if the film available has been kept for an hour or so rolled up with the gelatine coating outside there will be little or no trouble from curling. The two strips that have been trimmed on one side only will be the outer strips on the finished plate, and the perforated edges will come at the margins.

Next, take a piece of stiff card and lay one of the outside strips face down upon it, holding it down with a quarter-plate cutting shape so that the three central pictures are covered by the glass. Lift up the ends, which will each contain one picture, brush a little cement on the face of each, and also on the card underneath, and then press them down firmly. Then take one of the centre-trimmed strips of film, slip it face down under the cutting shape, and arrange it edge to edge against the previous strip, so that the pictures are in alignment. Cement the ends down as before, and then proceed in exactly the same way with the third and fourth strips. The trimming of the strips should have been effected with a knife and straight-edge. If carelessly cut with scissors the edges will not lie close together, and close joints are most desirable to prevent cement oozing through to the front in the

after operations. The four strips are now face down and side by side, attached by their ends to the card, and held down flat in the centre by the weight of the cutting shape. To prevent them from rising when the shape is removed it is as well to put a piece of lantern binding-strip along each end, half on the card and half on the celluloid. The cement takes some little time to set, and the films will rise if there is any curling tendency left in them. The cement referred to is that described in our former article—gelatine dissolved in acetic acid. To make a solution the bottle must be placed in boiling water. The bottle can be about one-third filled with strong acetic acid, and then gelatine is added until the consistency is about that of glycerine. Powdered soup gelatine is most convenient in use. Heat is applied until solution is complete, but after that the cement can be used cold.

When we are sure that the film strips are firmly secured at their ends to the card, we remove the glass shape and join the strips together with four-inch lengths of lantern-slide binding, cut down to about 3-16 of an inch in width, and moistened with cement. Gum cannot be relied upon for this purpose, and even the fish-glue variety is hardly safe. We always use fish-glued strips moistened with cement. Wide strips can be used at the extreme sides over the perforations and overlapping on to the cardboard, and similar strips can be used across these to form the other boundaries to the sixteen pictures utilised. These latter strips will overlap the pictures at top or bottom by

about  $\frac{1}{8}$  of an inch, and they must be cut so that double thicknesses of paper occur at the corners.

All that now remains to be done is to paint a line cement down each of the paper strips, and then quickly down a piece of  $4\frac{1}{4}$  in. x  $3\frac{1}{4}$  in. celluloid over the whole as to just cover the sixteen pictures and their margins. A cleaned quarter-plate "cut film" is just right for the purpose. The whole is then left under pressure for three or four hours, and finally a sharp knife is run round the edges of the celluloid cover, and the completed negative lifted up.

As an extra refinement the pictures may be separated horizontally by strips of black binding paper about 3-32 of an inch wide. These are cut about five inches long, cemented down right across the whole length of the plate. Two or three minutes after they have been rubbed down the short pieces that overlap the vertical strips are removed with a knife on either side of the verticals, the extra thickness of paper is picked off. This is necessary, otherwise the celluloid cover which is put on will not lie flat.

We can now build up suitable graduated screens, tissue paper, etc., either upon glass plates or celluloid, and our test film can be backed up with any one of these screens that is most suited to any particular purpose. Numbers are wanted on the test pictures they can be easily written in Indian ink on the film itself. They should be written backwards for preference.

## A NOTE ON SHUTTER SPEEDS.

FROM the review of Professor Worthington's fascinating book, "A Study of Splashes," in the "B.J." for September 11, the following paragraph is quoted: "The catapult method of releasing the falling ball and the device for making the exposure at a pre-determined time are both suggestive of ways of arranging shutter-testing apparatus."

Some years ago I employed, on the first camera I ever possessed, a method of shutter-testing in which there was a "device for making the exposure at a predetermined time" similar in principle to that adopted by Professor Worthington. The accompanying rough sketch (Fig. 1) explains the principle

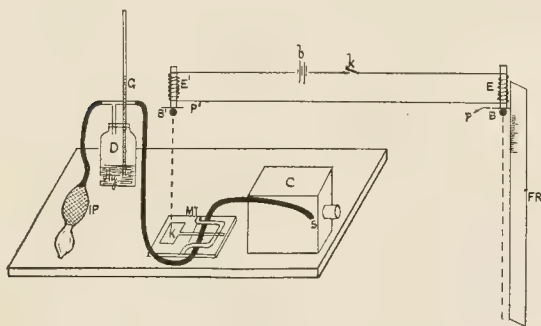


Fig. 1.

of the method. C is the hand camera, the shutter of which could only be actuated by pneumatic ball. A piece of stout rubber tubing was attached to the nipple S at one end, and to a bottle, D, containing mercury, at the other end. On its way from S to D it was gripped air-tight in a simple form of mouse-trap, MT, which was much in vogue some years ago, and was vended at twopence or so, under the name of "the break-back trap."

By means of the rubber hand pump IP a predetermined pressure sufficiently great to actuate the release mechanism of shutter was established in the bottle D, the pressure being indicated on a gauge D. (I remember being rather surprised at the magnitude of the pressure necessary.) A battery, E, of Leclanché cells sent a current round the circuit bKEE<sup>1</sup> when the key K was closed. E and E<sup>1</sup> are two electro-magnets made by coiling the circuit wire a few times round short length soft iron rod about  $\frac{3}{16}$  in. in diameter. The electro-magnets lift up two steel balls taken from the crank bearing of a cycle. Small pieces of cigarette paper were interposed between

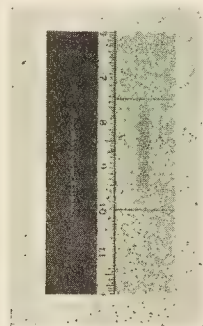


Fig. 2.

poles of the electro-magnets and the balls. On breaking the circuit with the key K, the ball B falls in front of an inch rule, FR, graduated in sixteenths of an inch, while simultaneously B<sup>1</sup> falls on the release lever K of the mouse-trap and snaps the shutter. The whole apparatus showed quite appreciable mechanical inertia, so that a measurable time elapsed between the impact of B<sup>1</sup> on K and the opening of the shutter. For high shutter speeds the height of E<sup>1</sup> at



K was increased in order that the ball B might be caught in the later portion of its 18 in. fall from rest, and so leave a conveniently long record of its progress on the photographic plate. If necessary for very low shutter speeds, the height of B above K could be lowered as far as was consistent with the sensitiveness to shock of the trap.

Fig. 2 is a reproduction of one of the photographs obtained. The shutter opened when the top of the ball had fallen 9.16 in.; it closed when the bottom of the ball had fallen through a height of 10.1-16 in. It will be noticed that the photographic trace of the ball falls off in density at each end, the decline being more rapid at its upper extremity.\* This cannot wholly be ascribed to the time required for actually opening and closing the shutter, for even with a shutter of ideal efficiency the photographic trace of a body of finite size must, from the very nature of the case, be more or less nebulous at its extremities. As can be seen by scaling Fig. 2, the breadth of the trace is  $\frac{1}{4}$  in.—i.e., the diameter of the ball was  $\frac{1}{4}$  in. When the shutter opened, the centre of the ball was therefore opposite 7 11-16 on the foot rule; when the shutter closed, the ball centre was opposite to the 9 15-16 division on the scale.

To evaluate the shutter speeds from such data as the foregoing I made use of the curve in Fig. 3, which plots the relation between distance fallen through from rest in sixteenths of an inch on the one hand, and the time taken in decimals of a second on the other hand. Drawing horizontal abscissæ from the axis of distance fallen at the points 7 11-16 and 9 15-16, and then vertical ordinates from the points where these abscissæ intersect the curve, it is seen that the time of exposure was .2268 — .2000 seconds = .0268 second = 1-37 second. These experiments furnished my initiation into the questionable ethics of the shutter-speed marker. The camera—a hand-camera of French make—had ostensibly a range of seven shutter-speeds, numbered empirically from 1 to 7, and in the trustful innocence of my novitiate I fondly believed this

\* Were I to repeat these experiments I should, with a view to a more pronounced and definitely definite photographic record, be inclined to substitute for the bright red balls formerly used two short iron cylinders painted dead black.

meant that the highest speed was seven-fold the lowest. My experiments, however, soon showed me that the highest speed was only about 1.3-7 times the lowest, and that in spite of all the specious mechanism for the variation of the shutter-speeds I had command of practically only two speeds—to wit, 1-37th and 1-50th of a second.

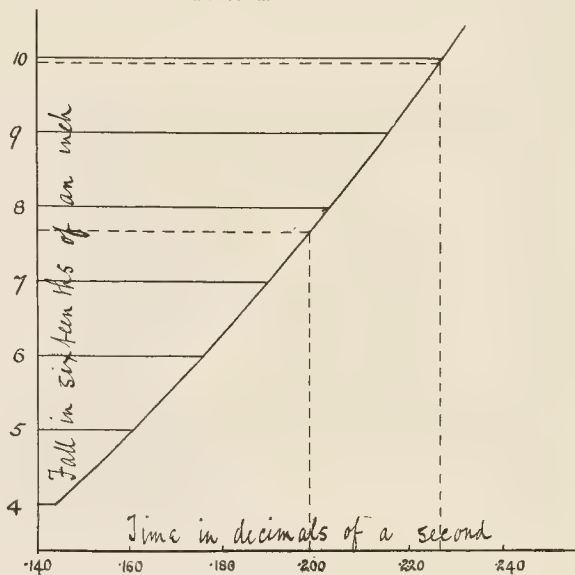


Fig. 3.

More recent experiences in shutter-speed testing by other, perhaps similar but not more accurate, methods, have led me to conclude that Mark Twain was not a photographic devotee when he threw current on our vernacular such a feeble and emasculated simile as "lying like a gas-meter."

DOUGLAS CARNEGIE.

## BRUSH DEVELOPMENT, OR LOCAL TREATMENT OF NEGATIVES WHILE DEVELOPING.

[The following note, by a Philadelphian professional photographer, is contributed to our contemporary of that town, the "Bulletin of Photography," where it is illustrated by a portrait which is certainly an excellent argument in favour of the method, presuming that the use of the developer has been largely responsible for the result.—Ems. "B.J."]

The following is the method I have found most successful for local work on negatives. The developer used is the old standby B. C. Pyro. [We interpolate the formula, which is evidently that for the Seed plates, though not included among the latest instructions in this country for the use of these plates.—Ems. B.J.]—

A. Water .....	8 oz.
Sulphite of soda (crystals) .....	$\frac{1}{2}$ oz.
Pyro .....	1 oz.
Citric acid .....	10 gr.
B. Water .....	16 oz.
Sulphite of soda (crystals) .....	4 oz.
C. Water .....	16 oz.
Carbonate of soda (crystals) .....	4 oz.
To develop take—	
A .....	$\frac{1}{2}$ oz.
B .....	1 oz.
C .....	1 oz.
Water .....	8 oz.

I make up two forms of solutions, one the regular one ounce

of each to eight or ten ounces of water, as you would in developing straight, the other, separate the carbonate from the pyro and sulphite by making up a solution in regular quantities of pyro and sulphite with the regular amount of water. Then use a solution of one-half carbonate and half water, or two-thirds carbonate and one-third water, whichever you find will suit for the strength of the negative desired. Now, we will suppose you have your negative exposed with a subject in white drapery. You develop the plate until your general composition is apparent on the surface of the plate, then pour off this regular developer and wash the plate. Now pour on the pyro and sulphite solution which you have previously made up, and hold the negative up to the light in the hand, FLAT, then use a brush, or soft cotton, saturated with the carbonate solution, and rub over that portion of the negative which you wish to bring out the most prominently. This must be done the first time very quickly, placing the negative immediately back in the solution, and then repeat the operation, blending the carbonate well over the plate so as not to get streaks. There is no special method of manipulation which will suit all cases. Each individual worker will

have to experiment in his or her own particular way for his or her own particular result. The principle involved is this: The negative is developed only to a slight extent in the first immersion, and as soon as the pyro and sulphite solution is poured on, development practically ceases. Then you control the accent of high-lights absolutely with your carbonate solution. Considerable practice will have to be had in most cases before you become master of this form of local work. I should caution the

beginner to under-time rather than over-time negatives for brush development, as the full-timed negative is much harder to control. In developing a 6 x 8 or 8 x 10 plate I use a one-inch camel's hair brush for the first brushing, going all over the plate with this, twice over the parts I wish to accent to one over the other part of plate. Then a brush less than half the size also of camel's hair can be used for pointing up.

RYLAND W. PHILLIPS.

## THE ACTION OF RESIN AND ALLIED BODIES ON A PHOTOGRAPHIC PLATE IN THE DARK.

(A paper read before the Royal Society and reprinted from the "Proceedings" of the Society.)

In former papers it has been shown that certain metals, woods, juices of plants, etc., have the property of acting on a photographic plate in the dark; that a similar action is exerted by coal resins and allied bodies is proved by the following experiments.

Ordinary resin or colophony is the solid remaining on the distillation of crude turpentine, and the substance known in commerce as "amber resin" is ordinary resin slightly purified, and is of a lighter colour.

To prove the activity of these bodies it is only necessary to lay them on a photographic plate in the dark, and afterwards to develop the plate in the ordinary way. The plates used in the following experiments were in almost all cases "Imperial Special Rapid." At ordinary temperatures the action is but slow; the contact of resin and plate would have to be for two to three days in order to obtain a fairly good picture. The amber resin is, however, slightly more active than the ordinary resin. If the temperature be raised, and contact be at 30 deg. to 40 deg. C., the action is much more rapid, and three to four hours is long enough to give a good picture. In fact, in four hours, ordinary resin will give as much action at 40 deg. as it would in three days at 15 deg. to 20 deg. A still higher temperature cannot be used with safety, for then the resin softens and adheres to the photographic film.

Absolute contact between resin and photographic plate is not necessary, for if the plate be held above the resin the action still takes place, and will, in fact, pass through a considerable distance. In one case when powdered resin was placed at the bottom of a glass cylinder and the dry-plate on the top at a distance of 120 mm., and in another case when the distance was 210 mm., in both cases after 18 hours' exposure at a temperature of 40 deg., a dark picture was produced. Another experiment which shows this action of resin was made by filling a glass tube, 1 inch in diameter and 10 inches long, and slightly contracted at one end with small pieces of resin, the tube being held in a horizontal position, and a dry-plate placed vertically at 1 mm. from the open end of the tube. On passing a slow current of air through the tube, which was maintained at 40 deg. C., a dark indication of where the air struck the plate was produced in two hours. On continuing to pass air through the tube the activity of the resin gradually decreases, but if the resin be taken out and again broken up its activity is restored.

If the tube containing the resin instead of being straight is bent at a right angle, and a dry-plate be placed below the bend, on passing a slow current of air through the tube a large amount of action is produced upon the plate.

The presence of oxygen appears to be necessary for the action to take place.

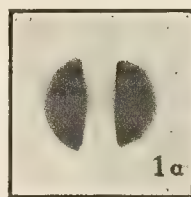
Two slabs of resin were placed separately in two desiccators: one was filled with dry air and the other with dry carbon dioxide; a photographic plate was fixed at 1 mm. below the resin plate, and both desiccators were kept at 40 deg. C. for 18 hours. It was then found that, although considerable action had taken place in the desiccator filled with air, none had occurred in the one filled with carbon dioxide.

A very marked and important character of this action of resin is that it is not able to pass through the thinnest sheet of glass or mica or aluminium. Glass 1/200 inch thick and mica 1/750 inch thick absolutely prevents the action passing through. This seems to separate this action from others of a somewhat similar character.

Another important point with regard to the action of resin and other allied bodies is the form of the shadow which they produce. If, for instance, a glass screen is placed in front of a piece of resin on a photographic plate the shadow is not bounded by straight lines, but the action, like that of a vapour, creeps in behind the screen, and in time meets from both sides. To prevent this action arising from any side action of the resin plate, a glass tube was filled with resin and directed against the centre of the screen. The experiment was repeated with the same apparatus, and a copper screen and ordinary light. Fig 1 (a and b) shows the effect produced in the two cases.

With regard to other properties of the resin plate, a thin plate acts as energetically as a thick one; thus a plate only 0.017 inch thick gave a picture of the same density as one 0.29-inch thick.

To obtain a suitable slab of resin for experiment it is best to melt



the resin and cast it on a bright metal plate, and afterwards, to free the surface which has been in contact with the metal from air bubbles, to pass a gas flame over it.

Another way of using resin for experiments is to dissolve it in alcohol and saturate a card or paper with the solution and allow it to dry. Even very dilute solutions may be used: a card which has been soaked in an alcoholic solution containing 0.25 per cent. of resin will give a dark picture, and with solutions of only 0.125 and even 0.086 per cent. of resin, faint pictures may be obtained. Again another way of using resin is to pour the alcoholic solution on to a glass plate and allow it to dry there. There are, of course, other solvents which may be used in place of alcohol.

A card prepared with an alcoholic solution of resin was placed in the dark slide of a camera, and the light of an arc lamp focussed upon it for five minutes. The card was then put up with a photographic plate at 55 deg. for one hour. A good and dark picture of the arc was obtained.

If resin be heated to a temperature of 40 deg. to 50 deg. for a short time it does not affect its activity, but if the heating be continued for 20 or 30 hours it slightly diminishes it. At higher temperatures the action is more marked; for instance, at 140 deg. the activity of the resin is much decreased after only four hours' heating, and, although resin may be fused without appreciably diminishing its activity, still, if it be kept in a liquid state for three or four hours, its activity is much decreased. An interesting experiment is easily made with a slab of resin owing to its brittleness. A weight placed on the slab cracks it in all directions; this can be slightly warmed on the underside so as to prevent its falling to pieces, and then on putting it up with a dry-plate for a short time



dark picture of the cracks is obtained (fig. 2). Another interesting experiment shows that the activity existing in resin can be transferred to a non-active body, making it as active as the original resin. A glass vessel was nearly filled with crushed resin, and a piece of inactive Bristol board placed on the top of it, at a distance of 5 mm. above the resin. This was left for a week at ordinary temperature, then on putting the Bristol board in contact with a dry-plate at 55 deg. C. for five hours a dark picture was obtained.

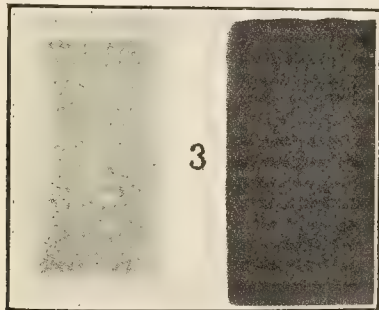
There are other ways in which this action of resin may be diminished or destroyed; for instance, by the action of sulphur



oxide. A slab of resin was broken into two pieces; one was placed for five minutes in a saturated solution of sulphur dioxide, then very thoroughly washed and dried; the other piece was treated in the same way, but with water alone, and both pieces were put up at 55 deg. C. for 18 hours. The one which had been washed with water alone gave a dark picture, and the one treated with the sulphur dioxide gave no picture.

### Excitement of Resin by Sunlight.

It has been shown in a former paper that wood, after exposure to sunlight, has its power of acting on a photographic plate in the dark much increased, and this increase of activity is not permanent, but gradually passes away. Resin acts in the same way: expose it to sunlight or to the arc light, and then bring it in contact or proximity to a plate, and it will be found that its activity has been greatly increased. Fig. 3 shows the picture given by the resin in its ordi-



nary state and after exposure to the arc light for half an hour. In one experiment a slab of resin was exposed to a bright July sun for 10 seconds, and this caused no increase of activity; but after 30 seconds, a slight increase occurred, and after an exposure of 60 seconds the activity of the slab had greatly increased; but on a still longer exposure no further increase took place, so that in about 60 seconds the resin was charged to its maximum amount. Another experiment, when the exposures were for 1 minute, 5 minutes, and 15 minutes, the 1 minute and the 15 minutes gave similar results. When the arc light was used in place of sunlight the same kind of action was observed, only more slowly. In one experiment the exposures were for 5 seconds, 15 seconds, and 30 seconds, and no marked increase of activity took place, but after 60 seconds' exposure a great increase was evident. With another sample of resin exposed to an arc light

it was found that it required 5 minutes' exposure to obtain its greatest amount of activity.

If amber resin, in place of ordinary resin, be used, it requires a longer exposure to light to charge it to its greatest amount. Resin is, however, a body which varies so much in composition and constitution that exact measurements cannot be relied on for different specimens, and the above experiments are only intended to show the nature of the action which occurs. The effect of heat on resin in its ordinary state has already been described; if, now, a resin slab, charged to its maximum by exposure to light, be heated to 55 deg. C. for only one and a half hours, all this extra activity is destroyed, and it returns to its original state of activity.

This increased activity induced by light acts generally in the same way as the original activity of the resin: it is destroyed by sulphur dioxide and does not pass through glass, mica, etc. In all cases of stimulating resin by the action of light a short interval occurs after the application of the light and before the increase of activity begins; when once begun, the increase takes place rapidly and it soon becomes charged to its maximum, so that longer exposure produces no further increase of its activity.

In order to ascertain which rays of the spectrum were most active in producing this change, a spectrum obtained from an arc lamp, with a quartz prism and lens, was allowed to fall upon a slab of resin for one and a half hours, and this gave, after contact with a dry-plate for two hours at 40 deg. C., evidence of action having taken place where the blue rays had fallen on the resin and not elsewhere. On placing slabs of resin in double bell jars with different coloured liquids, the blue, a solution of ammonia sulphate of copper, and the red, potassium bichromate, it was found that, even after an exposure of one hour in strong diffused light, the resin which had been exposed to the blue light had been strongly acted on, and gave a good dark picture, while the one exposed to the red light gave no increase of activity. The amber resin acted in the same way. A beam of blue light or of red light thrown on a slab of resin or a card saturated with resin gave the same results. On exposing resin under different coloured glasses the same effects were produced: after an exposure of one hour to bright daylight, under a blue glass, the resin became very active, under a red glass no change took place, and under a green glass there was only a very slight increase of activity.

It thus appears that the action of light in this respect, on resin, is similar to its action on wood, as described in a former paper. This increased activity of the resin slowly passes off, even at ordinary temperatures, on keeping in the dark or in red light. A slab was exposed to the arc light for one hour and then cut up into eight pieces. One piece was put up with a plate at once at 40 deg. C. for two hours; it gave a good dark picture; the other pieces were kept in the dark at ordinary temperatures: after three days a piece was tested, the picture it gave was only slightly lighter than the former one. After nine days, again, a loss of activity had occurred and the same was the case after 18 days. The experiment was carried on for nine months, and at the end of this time, although the picture it gave was much fainter than the first one, still it was slightly darker than the picture it would have given before exposure. If the resin be only slightly stimulated by exposure to bright daylight, the same gradual decrease of activity was traced. In red light the decrease was apparently the same as in darkness.

Although glass and some other bodies are opaque to the action of resin, porous bodies, of course, allow the action to pass through; for instance, with ordinary paper, if a slab of resin be placed behind it, a very good sharp picture is obtained; if, however, the paper be highly glazed and dressed, it is perfectly opaque. With ordinary papers interesting pictures, showing their structure and water-mark, and stencil pictures are easily obtained.

If paper be treated with different substances in solution, it is made more or less transparent. As a general rule it would seem that acid salts, such as the sulphates, which do not act on the photographic film, make a paper opaque, but that neutral salts do not alter its transparency. If a paper be dried by warming it, it becomes rather less transparent.

### The Effect of the Acid of Resin.

The principal constituent of resin is said to be an acid, known as abietic acid. It is not a body which has been thoroughly examined, but it has the property of acting on a photographic plate in the

dark to a remarkable extent. It can be obtained by dissolving resin in alcohol and passing hydrochloric acid gas into the solution; the acid then separates out in a crystalline form. By repeating this process it may be purified, and will then have a melting-point of 156 degrees C. It is with an acid so prepared that the following experiments have been made. If a small glass vessel be nearly filled with the crystalline acid and a dry-plate be laid on the top, not touching the acid, at ordinary temperatures, after two hours no action will have occurred, but after 18 hours the plate will give a strong dark picture. If, however, the acid be kept at a temperature of 40 deg., then a fairly good picture can be obtained in two hours, and with longer exposure a very dark one.

Thus it acts in the same way as resin, and has about the same amount of activity. Exposed to sunlight or to the arc light, its activity is much increased. Exposed to the arc light for an hour, it gives a good and dark picture, and even on an exposure of half that time a picture only slightly lighter is obtained; in fact, in little more than half an hour it is charged to its maximum amount. Light acts upon it as it does on resin.

The acid dissolves readily in alcohol, and if the solution be allowed to evaporate on a glass plate, it gives a film suitable for experimenting with. Paper saturated with the solution becomes very active. The acid also dissolves in ether, benzene, chloroform, etc., and behaves in the same way as with an alcoholic solution.

If the acid be heated to 100 deg. it slowly loses its activity; after eight hours' heating the picture it gives is only slightly fainter than before heating, but after 56 hours' heating it has become much fainter, and after being heated for 162 hours it has lost entirely its power of acting on a dry-plate.

If the acid be fused it becomes quite inactive, but its activity is restored if it be powdered, or if its surface be rubbed with sand-paper—in fact, if the smooth surface be broken up. If exposed to sunlight or to the arc light its activity is much increased, and different coloured rays affect it as they do resin. Exposed under blue or white glass to six hours' sunshine it gives a dark picture, but under a red glass only a faint one. All the metallic salts of this acid are entirely without action on a dry-plate; neutralise a solution of the acid with potash or soda and its activity has gone, and there is the same loss of activity with the copper and the lead salts, whether in solution or in the solid state. Decompose the metallic salts and the liberated acid is as active as before.

To purify the acid the lead salt, which is very insoluble even in alcohol and other organic liquids, was boiled several times with pure alcohol, and afterwards treated with sulphuretted hydrogen, the acid well washed and dried, and recrystallised from alcohol, and it was found to be quite as active as before this treatment. Another specimen of the acid was treated with an insufficient amount of alcohol to dissolve the whole of it. After boiling and digesting for a considerable length of time the undissolved acid was filtered off, washed and dried, and was found to be quite as active as before this treatment, so that neither process of purification affected the activity of the acid. If the fused and inactive acid be simply exposed to light it will again become active. If the activity of turpentine depends to any appreciable extent on the presence of abietic acid, then if it be treated with an alkaline body its activity should be decreased. Turpentine is known to be a very active body, and a plate placed about one-eighth of an inch above it will, even at ordinary temperatures, in three hours give a black picture. Some turpentine was allowed to stand for 18 hours with a small amount of solid caustic potash; this was then filtered off, and the liquid distilled and put up with a dry-plate for three hours; no trace of action was visible. Another dry-plate was placed above the same turpentine solution and allowed to remain for 18 hours; even then only a very faint action took place. Another specimen of turpentine was shaken up with magnesium oxide and allowed to stand for 24 hours. The clear liquid gave a much fainter picture after this treatment. The same occurred when dry sodium carbonate was used, but lead acetate had no action on the turpentine.

### The Action of Amber on Photo-Sensitive Surfaces.

Amber, although classed as a resin, differs so much from the substance already described that it was of much interest to ascertain how it would act under similar conditions. It is a remarkable

substance, known from the earliest times, and has been used for many purposes.

Quarried at one time, like a stone, it was naturally looked upon as a mineral, but is now known to be of vegetable origin: the extinction of certain trees, probably mostly coniferous ones, which have been buried in the ground for ages. Even in the Green-sand formation some amber has been found. At the present time the principal supply of amber comes from the shores of the Baltic, but a small amount is still picked up on the east coast of this country.

If a piece or pebble of amber, either in its rough state or cut as to give it a flat surface, be laid on a photographic plate in the dark, no action takes place, even if the contact be continued for hours and the temperature be at 40 deg. to 50 deg. C., thus differing from resin. This has been tried with a large number of specimens from different parts of the world, and with true amber has always been found to be the case.

There are many bodies closely resembling amber in appearance, chiefly resins, which act strongly on the plate, and although readily distinguished by an expert in the subject, can easily be mistaken for true amber. It often happens that a piece of amber, after long exposure to a plate, will develop on it small spots of action; the local actions are produced by fine cracks in the amber, which frequently occur, and it is above the opening of these cracks that the action takes place. If the amber be laid for a minute on a hot surface the opening of the cracks fills up and the action ceases. This resembles the action of resin, and apparently points to the collection of volatile matter within the cracks.

Another way of showing that, although a flat surface of amber does not act on a plate, still there is a trace of active vapour connected with it; for if powdered amber is placed in a glass dish with a plate above it, but not necessarily touching the powder, after the usual exposure a dark picture is produced. Amber, as is well known, is practically insoluble in alcohol, but in all cases a very small amount of some substance dissolves out of amber; now if the substance be collected by filtering the alcoholic solution and evaporating it to dryness, the residue is found always to be a very active body and gives a dark picture, thus a lingering indication of the amber's origin seems to be indicated.

Following the same line of experiments as that applied to resin, amber was exposed to sunlight and to the arc light, and its activity was found to be much increased. Four pieces of amber were exposed to sunlight for different lengths of time, namely, for two, three, five, and seven hours. After two hours only a very faint picture was produced; after three hours the picture was much darker and strongly outlined; after five hours it was still darker, and after seven hours a very dark picture was produced. The arc light acted in the same way. A specimen of good amber was cut into four pieces, and all of them were exposed at the same time, at a distance of 9 inches from the arc light: one piece for one hour, another for two hours, and the other two for respectively four and six hours. All of them were afterwards put up with dry-plates at 55 deg. C. for 18 hours. The amber exposed for one and for two hours did not act on the plate; the one exposed for four hours gave a considerable amount of action, and the one exposed for six hours gave a dark picture. Another experiment of the same kind showed that the amber became slightly active in two hours, and was much increased after four hours, but after six hours and even after ten hours but a very slight increase of activity occurred. As amber is a body which varies so much in constitution and composition, the action of light on it will vary slightly with every sample. For instance, five pieces of amber, all from different sources, were exposed at the same time for three hours to an arc light: two of them gave dark pictures, two only faint pictures, and one no picture at all.

Amber, like resin, if stimulated to increased activity by the action of light, gradually loses this increased activity on keeping it in the dark or in dull light, but for a long time retains a slight amount of its increased activity. If, however, the amber be heated, this loss of activity takes place rapidly, even when heated to only 50 deg. C. and if a flat surface of it be brought in contact with a piece of heated metal for one minute the amber loses entirely its activity. It has already been shown that resin is stimulated especially by the blue rays of the spectrum; the same thing occurs with amber. Specimens of different ambers were exposed both to sunlight and to a light under different coloured glasses, and it was always found that under the blue glass it became strongly active and that under the



ed glass it remained quite inactive, and if black glass and colour-glass were used the black glass acted like the red glass and the white one like the blue, only rather stronger. When double bell glasses with coloured liquids were used in place of coloured glasses, exactly similar results were obtained. One experiment of this kind was continued for four months and gave the same result.

Lignite, jet, and peat have also been tested in the same way as resin and amber. Two specimens of lignite from the Museum of Practical Geology, Jermyn Street: one an ordinary brown coloured piece, the other a sample from Tasmania; both were quite inactive and light did not stimulate them to action; even the alcoholic extract was inactive. Another specimen from Nigeria was also inactive, but one from Bovey Tracey was slightly active, and a specimen of "Brown coal" from Victoria, after an exposure of 44 hours, was found to be also very slightly active. Several specimens of jet from different sources were tried. None of them, if simply laid on a photographic plate and warmed, gave any action, but if powdered and a plate placed at 1 mm. above it, at 55 degrees for 18 hours, gave a faint picture. Again, if powdered jet was extracted with pure alcohol, the small amount of dissolved matter evaporated to dryness gave a dark picture. So that jet, although not in ordinary conditions an active body, still in the form of powder has the property of acting on a photographic plate. Light does not appear to have the power of making it active.

Graphite from Ceylon did not act on a photographic plate. A specimen of peat was found to have the property of acting on a photographic plate, but its activity was not increased by exposure to light.

#### The Action of Coal on a Photographic Plate.

One other substance belonging to this class of bodies—namely, coal—remained to be examined, and it was interesting to find that all ordinary coals, if brought into contact with a photographic plate at a temperature of about 50 degrees, were capable of acting upon it and giving a clear and distinct picture; so sharp are these pictures that they may be enlarged five or six times and still show clearly all the details. Through the kindness of Dr. Teall and Mr. Strahan, of the Museum of Practical Geology, I have had the opportunity of examining coals from different localities. Taking first the specimens of English coals, they all seem to be active, that is, have the power of acting on the photographic film in the dark. The best way of trying them is, first, to saw off a piece from the rough block, and then rub it down first on coarse sand-paper and then on fine, till the surface is flat and true, then on laying this flat surface on a photographic plate at about 50 deg. C. for in most cases about 18 hours, but in some cases it may be well to continue the contact for as long as 48 hours, a good picture is obtained. If the coal contains much water it must be dried, either by heating it for a short time at a temperature of about 40 deg. C., or by drying it over sulphuric acid.

In place of using a slab of coal, it is sometimes convenient to use it in the form of powder, and this is done, as in previous cases, either by simply placing the powder on the photographic plate or by filling a small glass vessel with it and placing the photographic plate at the top, either in contact with the powder or at a small distance above it. As long as the coal is used in form of a slab and is fairly dry, its action is very uniform, different pieces of the same coal giving pictures of the same density; but when the coal is in powder, a small amount of moisture modifies the density of the picture to a very considerable extent.

The effect of slightly heating a coal is shown by the following experiment:—Four samples of a Seaham coal in powder were treated as follows: One sample was at once put up with a plate, and gave a fairly good picture; another was heated for 24 hours at 100 deg. C., and gave a much darker picture; a third one was heated at 50 deg. for the same length of time, and its picture was much lighter, only slightly darker than the first one; and the fourth sample was heated for 24 hours at 200 deg., and gave no picture.

In another case the heating was continued for only three hours at 200 deg. and it gave a faint picture. If the drying be effected by placing the powder over sulphuric acid, phosphorus pentoxide, or solid caustic potash, it seems in many cases to increase the activity of the coal to a very considerable extent, so much so that some coals which under ordinary conditions give only a faint picture can be made to give a dark one. But on the other hand

there are coals which are not altered by this process of drying. In the specimen of coal, a Seaham coal, powdered was exposed 11 times to a glass vessel over sulphuric acid, each time for 24 hours, with no diminution of its activity; but if the coal was exposed to the air for 24 hours its activity considerably decreased, but was restored by again placing it over sulphuric acid.

Coals exposed to sunlight or arc light do not perceptibly increase in activity, as many other bodies do, nor does the small amount of substance dissolved out of them by boiling alcohol appear to be active.

#### Differences Between Coals.

Although there must necessarily be a strong resemblance between coal pictures, still it may prove that a certain specific and recognisable character belongs to coals from different beds. For instance, judging from the few specimens which have been examined, the South Wales coals appear to have their active strata fine and near together, whereas the coal from Derby and Nottingham has active strata which are much thicker and very sharply defined; but considering the small number of experiments made, this may be purely accidental. The pictures, however, clearly show differences in coals; for instance, all the anthracites that have been examined have given pictures different from the foregoing: they are fainter in appearance, the structure they represent is more complicated and the active matter more evenly distributed through the mass of the coal. There always appear to be cracks in anthracites, and these cracks are always white. There is also another curious point with anthracites: if they are dried over sulphuric acid the picture they give is much darker than the picture obtained in the ordinary way. Only a few Cannel coals have been examined: these gave pictures in character like the anthracites, but with less detail and not so dark.

From coal plants of different kinds and from different localities no pictures have been obtained. If the soft powder so common in bituminous coals and known as "Mother of Coal" is carefully removed and tested it is always found to be very active. The fibrous substance so often present and easily removed from coal is also very active, but the hard glistening surface of coal is only slightly active. Of the coals which have been examined, a Boora coal from the Lower Oolite, a Jurassic coal from Mexico, and some Argentine coals and a Tertiary coal from India are ones which have been found to have little or no action on the photographic plate. No doubt the long exposure of small specimens in a museum may affect their activity.

The foregoing experiments indicate the nature and to some extent the results which may be obtained by allowing coal to draw its own picture on a photographic plate, and in the hands of a geologist may help to explain the process of its formation.

#### A Theory of the above Actions.

With regard to the nature of this action on photographic plates in the dark, it has been suggested in former papers that it is owing to the presence of hydrogen peroxide, and that the effects described can be imitated by means of this body. It now seems that actions of this same kind are obtainable from many other bodies, but still bodies of the same kind, and these additional experiments strongly indicate that the action is produced by a vapour rather than by any form of radio-activity. For instance, it is shown that the shadows thrown by resin are not bounded by straight lines, but curve round a screen; that the action is not capable of passing through glass, mica, or aluminium foil, even of extreme thinness, and does not affect an electrical field. The action can pass along a glass tube, even when it is bent at a right angle, and may be swept out of a tube by a slow current of gas; and, further, an experiment described above shows that the activity of resin can be transferred to a piece of perfectly inactive Bristol board, which will then give a black picture. Further, no action takes place in an atmosphere of carbon dioxide. On the other hand, resin dissolved in an inactive liquid, such as alcohol or petroleum spirit, causes it to become active.

The action which strong light has in increasing the activity of many bodies is important. For instance, it has been shown that pith may be in contact with a photographic plate at 55 deg. for 48 hours and no trace of action is visible, but if the pith be exposed

darklight for two or three hours it will then give a dark picture. In some action occurs with old printing, with pure india-rubber, and many bodies which under ordinary conditions are but slightly active become very active after exposure to bright light or simply to blue rays.

My thanks are due to my assistant, Mr. Bloch, who has made all the photographs and given me much aid in carrying out the experiments.

The work has been carried on in the Davy-Faraday Laboratory of the Royal Institution. W. J. RUSSELL, PH.D., F.R.S.

## POSING FOR ENGRAVINGS.

[One of the profit-earning branches of photography which we find photographs for advertisement. The importance of a really good rarely a demur on the part of the purchaser to pay a good price, and the advertising manager of a large photo-engraving firm may be directly helpful in this class of work, but because they call attention Eds. "B.J."]

THE chief aim of illustrations showing articles of merchandise offered for sale is to arouse in the mind of the observer a desire to purchase. To attain this end advertisers frequently resort to the plan of showing the article in use. This not only gives an idea of the manner of manipulation, but care is usually taken to show the article in a way that will convey a favourable impression regarding its adaptability to the purpose intended and ease with which it may be manipulated. This plan of illustration is usually most effective with articles that are in themselves unattractive and rather difficult to illustrate in an interesting manner.

Undoubtedly the most attractive illustrations are those reproduced by the half-tone process. This gives photographic effect, and is usually more realistic than illustrations made from pen drawings. There are two methods of producing illustrations for half-tone reproduction. One is by taking a wash drawing of the figures to be shown; the other is by making photographs of models posed for the purpose. As a rule, when drawings are used, only those of superior artistic merit are desirable. Drawings that are incorrect in proportion or lacking in the essentials of correctness are undesirable, and are usually detrimental to the advertisement in which they are used. This means that drawings must be of good grade, and therefore somewhat expensive.

The growth of amateur photography has been an important factor in promoting the popularity of photographs of models in connection with advertised articles. A large percentage of the population is more or less familiar with photographic processes, and therefore more or less curious regarding illustrations which are manifestly made from photographs. It is sometimes rather difficult to determine whether an illustration is made from a wash drawing or a photograph, but, as a rule, the distinction is easily made and interest in the illustration correspondingly increased.

The demand for models in connection with advertisement illustrations makes it necessary for concerns engaged in this line of production to have a large list of available models, subject to call at all times. These models comprise people in all walks of life. It is not

being followed *sub rosa* by many a professional is that of preparing photograph to an advertiser makes this work one for which there is therefore the following notes (from the "American Printer") by be recommended for study, not because they contain much that is to the many profitable applications of clever work of this kind.—

at all unusual for young women occupying social positions of prominence to offer their services as models for photographic purposes. These women are always possessors of good figures and usually have faces which produce pleasing photographs. They are very desirable as models, for the reason that their carriage is usually graceful, and they are more intelligent than the average professional model. As a rule, they object to having their faces reproduced without alteration, and this is accomplished by retouching the photograph in such a way as to make it unrecognisable without this change being apparent to the observer.

Actresses sometimes offer their services as models, and, as a rule, they are the most satisfactory of any class available for this purpose. Their training enables them to grasp the spirit of the occasion, and the result is usually a picture possessing a large amount of human interest. The producer of commercial photographs must rise to the spirit of the occasion to produce the best results. Usually the article to be shown suggests ideas that are not particularly difficult of execution. The advertiser frequently has ideas that are more or less definite, but occasions frequently arise where the advertiser is completely at sea and unable to suggest a method of showing the article which he fully realises is of the most prosaic nature. The article itself is about as interesting as a sand pile. Under the magic hand of the expert, however, a series of illustrations is prepared by photography showing an entire process of making from start to finish.

The cost of photographs produced from models is an uncertain quantity. A model is usually paid by the hour, and, as a rule, several photographs are made in order to have a choice in selection. Sometimes very little retouching is required, and in other cases the retouching expense is considerable. As a rule, the cost is less than it would be if wash drawings of good grade were used. The wise advertiser, however, is after results, and the cost of engraving is not regarded as a vital point. He realises that when he expects to spend several thousand dollars for space in magazines, it does not matter if his engraving cost varies a few dollars. He knows that the money is well spent. F. B. MILLER.

## HIGH-SPEED PHOTOGRAPHY.

[Presidential address delivered by Mr. J. F. Duthie at the First General Meeting of the Edinburgh Photographic Society, for Session 1908-9.]

IN selecting a camera for high-speed work, the first essential is a shutter which will give very short exposures. There are practically only two forms of shutter now fitted to hand cameras, which for simplicity I might term as the lens shutter and the focal-plane shutter. The former is usually fitted between the combinations of the lens, and while it has the advantage of being compact and light, the lens is fully open for a fraction only of the whole exposure, so that this form of shutter does not allow the maximum of light to reach the plate. With the focal-plane shutter, on the other hand, the lens is fully open during the whole exposure, and as the slit of the shutter passes across the plate, the part of the plate exposed receives the full amount of light passing through the lens. It is impossible to draw a close comparison between the two shutters, or to say exactly how much better the exposure will be with a focal-plane shutter than with a lens

shutter, but an exposure of 1-200 part of a second with a focal-plane shutter would pass about the same amount of light as an exposure of 1-50 part of a second with a lens shutter, and the faster the shutter is used the greater will be the difference in favour of the focal-plane shutter. Thus the focal-plane shutter has a great advantage over the lens shutter for all classes of work, particularly when the exposures are of very short duration. The next consideration is the lens, and this is of extreme importance. It must be capable of giving good definition much beyond the extreme corners of the plate, so that the rising front may be used with the full aperture of the lens. It must also be of large aperture to allow of very short exposures. These requirements can only be fulfilled by the modern anastigmats, which are made with apertures varying from  $f/4$  to  $f/6.8$ , the former being preferable. It must be remembered, however, that depth of definition



depends on the aperture and focal length of the lens, so some compromise has usually to be made between the two. While a short focus lens giving good depth of definition is to be desired, because the blurring of distance by focussing has not to be so exact, it is objectionable because of its exaggeration of perspective. The longer focus lenses, although requiring more care in focussing, and if carelessly used giving a larger proportion of fussy negatives, gives better perspective, shows the operator to be farther away from the object, and gives an image of a fair size on the plate. In much high-speed work it is far more desirable to be near the object. But the choice of the lens must depend to a certain extent on the kind of camera to be used, whether the folding or collapsible type with direct vision finder, or the bulky but more efficient reflex camera. Of the two, I prefer the latter. The camera, lens, and shutter having now been considered, the next matter that calls for attention is the exposure. As a rule, for very high-speed photography a meter is useless. It is usually a case of the largest aperture of the lens, and the longest exposure the velocity of the subject will allow of. One exception to this, however, is shooting subjects, and here, owing to the much better light to be got at sea, a meter will often be found useful in deciding the best stop to use. The speed of shutter must be set according to the circumstances under which you are working, and they vary very much. In photographing from a pier or anything stationary, the points to be considered are the movements of the yacht, the distance she is off, and the length of focus of the lens. With a 5in. lens on a quarter-plate, or a 6 $\frac{1}{2}$ in. lens on a 5 by 4, an exposure of 1-100 to 1-150 part of a second will be ample, but, with the single combination of the lens, 1-200 of 1-250 will be required. In photographing from a small boat on a moving steamer, the speed of the shutter will require to be increased considerably. When arrangements have been previously made to photograph a yacht, or when photographing groups of yachts, it will be an easy matter to get them sufficiently large on the plate with an ordinary lens, but when trying to get pictures of single yachts from a steamer at a regatta, it will be found a great advantage to be able to use the single combination of the lens. On shore the light will not usually allow of the use of the single combination. At sports the exposure will vary principally with the angle and speed at which the subject is moving and the length of focus of the lens. Supposing the distance from the subject to be constant, the shorter the focus of the lens the slower the shutter can be used. Personally, I use an 8in. lens with an aperture of  $f/6$  to a 5 by 4 plate, and will give a few examples of the exposures I find necessary.

Runners coming towards the camera, 1-300; runners at a slight angle, 1-600; runners at right angles, 1-800. Jumpers much the same as above, but occasionally a slightly fuller exposure can be given if you study the style of the jumper.

For horses jumping and trotting at a slight angle, 1-800 second. For horses galloping at right angles, 1-1,200.

These may be taken as a general guide, but I will speak of others when showing the slides on the screen.

As to the plate to use. For sea work I prefer orthochromatic plates; in fact, I may say that they are essential. The intensity of illumination, the preponderance of the blue rays, and the delicate tone values require a colour sensitive plate, and, when the light will allow of it, a screen will be found a great advantage. A few years ago the one drawback to ortho plates was that they were rather slow, but great strides have been made lately in their manufacture, and a plate such as the Imperial "Special Sensitive" will allow very short exposures.

As a rule, on land, the fastest plate obtainable should be chosen, and it takes a very good plate to meet the requirements for subjects such as I have mentioned this evening.

It must, while having a fair amount of latitude, stand forcing in development, such as a very strong soda solution at a rather high temperature, without frilling or fogging. After having used several makes of plates, I may say I find the Ilford "Monarch" very satisfactory. It is astonishing what it will stand in the way of temperature and forced development, and the grain is very fine for such a rapid plate. I always prefer to use backed plates, and for yacht photography they are absolutely necessary. At sports, where the plates are usually clad in white, and especially where they have to be photographed with only the sky behind them, backed plates are of course a benefit. I have seen it stated somewhere that backed plates are slower than unbacked plates, and the theory put forward was that

the backing absorbs the light which penetrates the emulsion, while in the plate without the backing the light is reflected again on to the film. However, in practice I have not found, even after careful trials, any disadvantage by using backing.

In treating of development, I would first like to say a few words on the conditions under which it is carried out. Although very sensitive plates are used, the "dark-room," as it is called, should not be altogether a place of darkness. There should be enough light to see about. If you can readily see what you are doing, you can handle your plates smartly, and run less risk of fogging than when moving slowly about close up to a small light. It is surprising the amount of light fast plates will stand if it comes through good ruby glass or fabric. The time you have to be most careful with a fast plate is during the first minute or two of development, when it can either be kept covered or at a safe distance from the light. When the image shows up it may then be exposed quite safely to a good ruby light, and after it is fully developed and well rinsed, it can be even exposed to daylight without any harm resulting, although, as there is no benefit by this, it is really better, if convenient, to fix before leaving the dark-room.

With chromatic plates, and others which have been fairly well exposed, I prefer a pyro-soda developer. The Ilford or Imperial formulae I have found very satisfactory, but prefer to leave out the bromide of potass, unless I know the plates have been fully exposed. If the developer is kept made up without bromide, a few drops from a 10 per cent. solution can be added as required. In using these formulae I usually begin with the following proportions of 4oz. No. 1 to 1oz. No. 2, and about 1 $\frac{1}{2}$ oz. water. If, as development proceeds, the detail comes up readily, more of the pyro solution may be added to give density, and a little bromide to give the necessary contrast. With short exposures the best result will usually be got with the quantities mentioned. For "Monarch" plates where the exposure has been rather meagre, I take a pyro-metol developer, using a large proportion of the soda solution and a little warm water. A cold developer is not only very slow, but fails to give the requisite vigour to a negative. The best temperature to use the developer at is about 65 deg., but where the plate has been very much under-exposed it will be found an improvement to use it even warmer than this.

I would like to say a few words about photographing some of the most popular subjects which require a focal-plane shutter. From some photographs of runners at sports I have noticed some workers prefer to take them from right in front. In a short race, where the competitors are well together, this is the best way of getting them all in focus, but to my mind it gives the figures a most unnatural appearance. I much prefer to take them from one side and a little ahead, as it gives a much better idea of action in the figure. The same applies to high jumping and hurdle racing. With the latter it is better to choose a hurdle near the start of the race so as to have the competitors pretty well together, getting them all in focus, and thus conveying a good idea of keen competition. When photographing a golfer, I think the best position is just before the finish of the swing. The club has a good bend on it, and there is usually an alert look on the face of the player. Another good position is when the golfer is playing out of a bunker, the sand that is knocked up often helping the effect.

To get good results of horses requires some study of the animals themselves, as the results to be appreciated must show good action. Do not attempt to take them coming towards you with a short focus lens. In photographing yachts, also, it is better to have some knowledge of the handling of them if you wish the results to look well. Taken from a bad position, with bad lighting, or with the sails not "drawing" well, it is an easy matter to make one of the finest boats look a mere "hulk." In fact, to get the best work when photographing most of the subjects I have spoken of this evening, it is necessary to know your subject thoroughly first. The focal-plane worker more than any other must be alert, quick, and decisive, as usually the slightest hesitation means failure. When the time comes for making the exposure, don't clutch the camera vigorously and make a sudden jerk at the shutter release, as it will simply mean vibration of the camera and a spoiled plate. Don't get excited. Hold the camera easily, and with a gentle pressure of the finger release the shutter.

In conclusion, I expect it to be said that what I have spoken of is really summer work only, but I would just like to point out that the

principal apparatus required, viz., a focal-plane shutter and large aperture lens, is also the best material for getting successful pictures in winter.

J. F. DUTHIE.

#### AUSTRALIAN KODAK, LTD.

THE "Australasian Photographic Review," the organ of the Baker and Rouse Proprietary, Ltd., in its September issue just to hand makes the following statement:—

"We have to announce that the manufacturing portion of our business has been acquired, and will in future be conducted, by a company to be known as 'Australian Kodak, Ltd.'"

"The policy of this company will be directed by Mr. T. Baker and Mr. J. J. Rouse, and its objective will be to supply photographic goods equal to any in the world, and at prices, in most instances, not higher than those charged in Great Britain.

"To attain this object Mr. Baker recently visited the United States, and succeeded in arranging for the Australian manufacture of all the products of the Kodak factories which it is practicable to handle here, and the new company is now erecting large factories in Victoria for the establishment of an important industry, which will provide employment for a considerable number of workers, and at the same time place within reach of consumers the perfectly fresh goods which are so eminently necessary for all photographic processes.

"The requisite arrangements are being pushed forward with all possible despatch, and we trust soon to be in a position to announce a very considerable reduction in the prices of Kodaks, roll films, Velox paper, and most other Kodak productions.

"We therefore anticipate, and confidently ask from Australian photographers, both amateur and professional, such measure of support as an Australian industry is justified in expecting from Australians.

"All branches of our business throughout the Commonwealth will continue to be conducted under the name of Baker and Rouse Proprietary, Ltd., as hitherto."

## Exhibitions.

#### WESTERN COUNTIES.

THOUGH there is no great gain in numbers in the matter of prints, and not so much progress as those interested in pictorial photography in the West could desire, yet the collection of work is decidedly helpful to the ever-growing army of photographers. When the admittedly strong pictorial quality of the West is taken into account, it is curious that there are no more photographic societies than there are in Devon and Cornwall, which, for its area, is poor in this respect. This exhibition ought to quicken work into life, because it is not so ephemeral as most things of the kind, and a great number of people, to the total of many thousands, see the works that have been submitted. Of course there is an aim to encourage Western workers and the delineation of Western scenes, but there is little wrong with this—the West is clannish, and it has much to offer all who come that way, especially for photographic purposes. Of the exhibition as a whole it may be said that the average is moderate. There is no striking bit of work, nor anything very bad. There are examples of the shiny—probably there always will be. But, as a rule, the work is decently printed, and, usually, mounted quietly and in better taste than formerly. Even in the West this ought to be. It would be better for the workers in the West if they could see more examples from the best people, but the exhibition does not draw them so much as could be desired, and the country folk are not helped as they might be. Among works which rejoice in the inappropriate title of "champion" there is a fine thing, impressive and suggesting vastness and power—"Mauretania Leaving the Tyne," by Gladstone Adams, which just misses being a great thing. The fault is hardly the photographer's, but the accident of circumstance. E. O. Hoppé's "Student" is an impressive study of figure work. Dan Dunlop's "Edinburgh Castle from Grey Friars" is suffused with delicacy and charm, and the point of selection is happily chosen. J. C. Trudgeon's "Land's End," while a fine study of rocks and cliffs, suffers from having no sky whatever. A. B.

Fellowes Prynné's "Sand Dunes" deserve commendation. A. Stafford's "The Stag Rock" is quite a painter's subject, and handled very well indeed—especially in atmospheric quality. F. W. Beken's "Silver Sea" does convey the idea of the title: it is little flat and grey, still it is very enjoyable. E. T. Penrose's "Autumn in the Woods" does really convey the sentiment which the title suggests; and the same may be said of Graystone Bird's "To the Hills," which is probably as good as anything he has done in the line. Rev. W. E. Windle may be congratulated upon his selection of the charming subject—"Les Arcades, Bellagio," but not on the pronounced diffusion he has treated it to. So small a print will not stand so much "softening." Rev. E. T. Clark has certainly got a very charming thing in the "Triforium." J. S. German's "A Ray of Light" is a beautiful architectural interior; but "ray" is hardly the word to use. Miss Muriel I. Hunt's studies of "Cats" are really deserving of much more attention than they will get. The others are very well done. Thomas Hood's picture of a "Thrush at Young" is very fine work. A. W. Walburn's celebrated "A Sylva Scene" wins no more than deserved attraction and praise. Rev. H. W. Allen's "Grindelwald" is most impressive and technically first class. A beautiful little picture is Rev. S. Williams' "Finshauts," an Alpine scene. His "Ancient Mariner of Borgherla" is good, too. A. B. Fellowes Prynné's "A Sunny Day" is really suggestive of sunlight, and might have won higher distinction by a little change in composition. The work contributed by those who have never secured an award, and the juniors, is distinctly full of promise and is most encouraging. The judges were Mr. Walter D. Finch and Mr. F. J. Mortimer, who made a large number of awards.

#### THE WORK OF MR. WILLIAM CROOKE.

THE Edinburgh Photographic Society has arranged two one-man shows for this season by Wm. Crooke, Edinburgh, and J. Craigh Annan, Glasgow; the first of these is now open in the Society Rooms, Castle Street. Mr. Crooke's fame as a portraitist is well assured, and in this one-man show—surely the severest test that any artistic worker can be subjected to—he sustains, if he does not intensify, previous opinions. His work is that variety characterised as "straight," and the effects he obtains seem one of the strongest possible arguments for what is now scoffingly termed "pure" photography. If the personality behind the camera can, by the aid of his camera plus his own artistic instincts, obtain Crooke pictures, where is the necessity for the "personal control" so much boasted of by moderns? May not the personal control, as well, if not better, applied in the taking of the picture as in the faking of the print?

The exhibition shows Mr. Crooke's work in its many phases: the dignity of old age, the manliness of vigorous manhood, the grace of the débutante, or the bewitchery of the child; in all the "age" the characteristic of the time is apparent, and over and throughout all the hall-mark of Crooke is evident. That professional work can be highly artistic and at the same time "like" the sitter is evident here, and the E. P. S. is to be congratulated on placing such an exhibition before its members and the public. Earlier work was printed in carbon, but platinotype being much used in the work-a-day business Mr. Crooke found it more convenient to print in that medium, hence its adoption. The exhibition is quite up-to-date, and includes seven pictures the produce of this year's work.

Here we have a photographer who, business apart, follows photography not in its business aspect, but as an artistic pursuit, and therein you have the true amateur.

#### THE WORK OF J. M. WHITEHEAD.

It is fashionable in certain circles to despise, blatantly, the work of the country professional, and columns of elaborate satire have been hurled at the devoted head of the pro. with a sma' way o' dae. A one-man show, held in the rooms of the Glasgow Southern Photographic Association, promoted by the Glasgow Photographic Circle, however, gives the lie direct to the accusation of universal incapacity. The author of the fifty-three pictures on exhibition J. M. Whitehead, The Studio, Alva, known to the folks of the Borders as "the photographer," and known to a world-wide circle of admirers as a photographer of much merit. At the R.P.S. and



London Salon his work is always in evidence, while he shows his pride o' country by enthusiastically supporting the Scottish Salon. It was in still-life subjects that Mr. Whitehead first earned the acclamations of the exhibition-going public, and so new, so simple, and yet so satisfying was the work that came from his camera that he has been acknowledged to be among the leaders of the pictorial movement.

From his still-life pictures he wandered to landscape, and here he has evolved, or rather interpreted, a phase of landscape that has been identified with his name, and at any of the exhibitions a "Whitehead" is easily distinguished by even the most casual exhibition attendant. He does not practise any of the slap-dash methods adopted by many of the modern school, his pictures nowadays being all printed in platinotype, not by any means a process readily adaptable to the cult of "fake." Most of his work owes much of its power to composite printing, three or four negatives being occasionally used, but this is not visible to the finished product.

## Patent News.

*Process patents—applications and specifications—are treated in Photo Mechanical Notes.*

The following applications for Patents have been received between October 26 and October 31:—

**DEVELOPING.**—No. 22,670. Improved method and means for developing photographic films. John Gordon Hume, 122, George Street, Edinburgh.

**CINEMATOPHOTOGRAPHS.**—No. 22,970. Improvements in and relating to cinematography or moving pictures in colours. William Norman Lascelles Davidson, Rammore, Cross Road, Southwick, Sussex.

**GELATINE PAPERS.**—No. 23,020. Improvements in the manufacturing of gelatine photographic papers containing silver salts. Edwin Ebenezer Burnett, 2, Heber Road, Cricklewood, London.

**TRANSFER FILMS.**—No. 23,146. New or improved process for the manufacture of photographic transfer films. William Mounsteven Gillard, Chancery Lane Station Chambers, London.

**DAYLIGHT DEVELOPMENT.**—No. 23,148. Daylight developer. Alfred Hamburger and Heinrich Imhof, 33, Cannon Street, London.

**CINEMATOPHOTOGRAPH-PHONOGRAPH.**—No. 23,153. Improved means for securing synchronous movement in moving pictures and talking machines. William George Barker and William Cecil Jeapes, 55, Chancery Lane, London.

**COLOUR PHOTOGRAPHY.**—No. 23,273. Improvements in "carbon" processes for use in colour photography. Edgar Clifton and Arthur Ernest Wells, 3, Broad Street Buildings, Liverpool Street, London.

**CINEMATOPHOTOGRAPHS.**—No. 23,274. Means for angularly adjusting the feed-drums of cinematographs with Maltese cross-feed mechanism. Alfred Duskes and Duskes Kinematographen und Film-Fabriken G.m.b.H., 31, Bedford Street, Strand, London.

**CINEMATOPHOTOGRAPHS.**—No. 23,275. Means for securing automatic adjustment of the shutters of cinematographs coincident with the adjustment of the picture strip relative to the shuttered aperture. Alfred Duskes and Duskes Kinematographen und Film-Fabriken G.m.b.H., 31, Bedford Street, Strand, London.

**CINEMATOPHOTOGRAPH-PHONOGRAPH.**—No. 23,276. Improved method of and means for controlling the conjoint action of cinematographic and sound-recording apparatus for the purpose of securing synchronism. Alfred Duskes and Duskes Kinematographen und Film-Fabriken G.m.b.H., 31, Bedford Street, Strand, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

Specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

**CERAMIC COLOUR-SCREEN PLATES.**—No. 22,228. 1907. The screen-plate is made by first of all coating glass with a suitable "tacky" substance, and then with ceramic colours or chemically stained "fluxes" in the proper proportions of the necessary colours for the negative or positive plates. After levelling with a squeegee or by application to pressure, these coloured sub-coatings are then

varnished if required, and afterwards super-coated with pan-chromatic or other colour-sensitive emulsion, or the plates may be covered evenly over with these ceramic colours or fluxes and then passed through a ceramic kiln or furnace. By the firing process they are melted, and form a coloured transparent glaze of the most minute particles of the necessary colours, which are chosen to form their required tints after firing. The process of firing fills up any minute spaces there may be between the coloured particles, and forms the coloured glass screen upon which the colour-sensitive emulsion is coated direct.

The colours used are composed of silica, minium, and borax, or with saltpetre added if required, and for the colours are oxide of cobalt for the blues, cupric oxide of copper or oxide of chromium for the greens, and with the addition of ferric oxide to either of the former for the reds, ferric oxide of iron or chromate of lead for yellow and orange, and gold with oxide of tin for magenta or pink, in their required quantities so as to obtain the necessary optically correct intense colours to reproduce the natural tints of the picture taken.

By this ceramic process all varnishes, mediums, and sub-strata are entirely done away with, and the sensitive emulsion can be coated upon the screen glass direct, and there will be no dissolving of dyes and no change of the original colours, and no frilling during development. The plates can be made in graduated shades of colour and blended to suit landscape, seascape, portrait, or highly coloured work, by depositing more or less of the powdered colour in different parts of the plate.

The inventor mentions that it has been previously proposed to form multi-coloured screens by means of coloured particles of glass melted into the supporting plate of the sensitive film. Henry William Hamblin Palmer, 45, St. Martin's Lane, Charing Cross, London, W.C.

**COLOUR SCREEN PLATES.**—No. 17,065. 1908. The invention relates to a method of producing colour screen-plates, which is based on the property possessed by various dyestuffs of behaving selectively towards other substances to be stained therewith. Thus, for instance, a dry collodion film is immediately stained blue on being dipped in an aqueous solution of basic methylene blue containing a little alcohol, whereas it stains with difficulty on being dipped even in a purely alcoholic solution of acid erythrosine. On the other hand, a dry gelatine film, which is difficult to stain, by immersion in a purely aqueous solution of methylene blue, acquires a stain at once when dipped in an alcoholic solution of erythrosine containing only a little water. If the two dyestuff solutions be mixed, and a film of gelatine and one of collodion be dipped simultaneously in the mixture, the dyestuffs separate, the collodion taking a pure blue stain whilst the gelatine is stained pure red. If a solution of gelatine that has been stained with methylene blue and treated with a little alcohol for the purpose of softening the collodion, be applied to a dry collodion film, the methylene blue migrates from the gelatine into the collodion. Conversely erythrosine will migrate almost completely from a collodion solution stained therewith, into a gelatine substratum.

This differential behaviour of the acid and basic dyestuffs toward certain substances, such as gelatine, collodion, laces, gums, resins, caoutchouc, and many others, are utilised for the production of three-colour screens as follows:—The substratum intended to receive the screen, and consisting of a film of gelatine, collodion, etc., is brought into contact with the dyestuffs, which are mixed with substances for which these dyestuffs have a less powerful affinity than they have for the film of collodion or gelatine. The dyestuffs then migrate from their carriers into the gelatine or collodion film, and after the dyestuff carriers have been removed, as, for instance, by washing, the three-colour screen is left in a finished state.

The manufacture of the screens is carried out as follows:—Three solutions of gelatine are prepared, and each of them is stained with a dyestuff possessing a stronger affinity for collodion than it has for the vehicle—e.g., gelatine. The stained solutions are then evaporated to dryness and ground to fine powder.

The three powders are mixed and applied to a freshly prepared and therefore still rather sticky collodionised substratum, either by sifting them through sieves on to the substratum travelling underneath, or else by means of a dusting-on device. The dyestuffs migrate from the powder into the collodionised surface, and

the powder, now colourless, is then removed by washing. Although in this method the coloured powders overlie each other to a large extent, no interchange of their dyestuffs occurs; but, on the other hand, uncoloured patches may remain in many parts of the substratum, owing to no colour having been absorbed, through defective contact between the powder and the substratum. This defect, however, may be remedied, as, for example, by dusting on only two differently coloured powders, and producing the third colour by treating the substratum in a bath containing the third dyestuff dissolved in a substance of such kind (*e.g.*, gelatine) that the dyestuff will migrate from it into the collodion, the gelatine being then removed by washing. Or, again, three differently coloured powders may be dusted on, a smaller quantity being taken of one than of the others, and the treatment then completed as above.

Instead of gelatine, a solution of gum arabic, for example, may be used for absorbing the dyestuffs, since for this substance also the dyestuffs have a lower affinity than they have for collodion. If, on the other hand, the substratum be coated with a film of gelatine instead of being collodionised, the reverse method is adopted, that is to say, the dyestuffs are dissolved in collodion, dried and dusted on to the substratum. In this case, of course, the dyestuffs dissolved in the collodion must be such as exhibit a greater affinity for collodion, and will therefore migrate from the coloured collodion powder into the gelatine film.

Instead of dusting the substratum over with coloured powders, it may be sprayed directly with the coloured liquids, for instance, with the above-named three-coloured gelatine solutions or the like, simultaneously or in succession. In this case the following procedure may be adopted as an example:—

A collodionised substratum is sprayed first with, say, a red coloured solution of caoutchouc (in chloroform), then with a blue coloured solution of gelatine, and the plate finally bathed in a solution of the third dyestuff (yellow-green).

The dyestuff migrates from the solutions of caoutchouc and gelatine into the collodion, and the caoutchouc and the gelatine are removed by washing, whereupon the substratum appears stained with the three colours. The third colour is not necessarily applied by bathing in a solution of the dyestuff, but may also be applied by spraying. By using dyestuff solutions that will not mix together they may all be applied at the same time by means of two or three spraying devices, as the case may be.

Another typical method consists in first covering a collodionised substratum, such, for instance, as film, glass, paper, etc., with figures (dots, for example), by any process, *e.g.*, by printing with colourless gelatine, this operation being performed in such a manner that the coated surface occupies one-half the total superficial area of the screen. Then regular figures (*e.g.*, dots) are applied cross-wise, so as to cover only one-third of the surface of the screen, by means, say, of a yellow-green varnish colour. Provided the figures or dots have been distributed with geometric uniformity, the two groups of figures or dots will overlap each other to an extent equal to one-sixth of the area of the screen. A collodion film prepared in this way is bathed for a short time in the above cited mixture, consisting of a solution of methylene blue and erythrosine. Since the fatty yellowish-green colour will not absorb any of the dyestuff solutions, only the parts left uncovered by the fatty colour, and consisting one-half of collodion and the other half of gelatine, will be stained. Since the gelatine is stained red and the collodion blue in such a mixture of dyestuffs, it is clear that a three-colour screen, free from imperfections of covering, can be obtained by this means. Separate baths of erythrosine and methylene blue, or similar dyestuffs, may be used instead of the mixed bath. Again, the fatty colour may be applied first, and a gelatine solution stained (red) with rhodamine may be applied over and partly covering it. In this case the red rhodamine migrates from the gelatine into the collodion, but it is not absorbed by the fatty colour. The free collodion is then stained by bathing in a solution of methylene blue or similar dyestuff, which is not absorbed either by the fatty colour (which will not take up any dyestuff at all), or by the gelatine. Both the stained gelatine over the parts in contact with the fatty colour and the gelatine from which the rhodamine has been absorbed by the underlying collodion, are then removed by a short bathing in lukewarm water, leaving a completed three-colour mosaic free from any imperfections of covering.

Another method of carrying out this process consists in the following:—Three filaments stained with different primary colours are prepared from stained solutions of gelatine or the like, and are made into a tissue or fabric; or three powders, made from differently coloured gelatine, are mixed together and pressed to form a block; or thin leaves of gelatine stained with different colours are laid alternately one upon another until a block of a certain thickness is obtained, this being then divided into two parts by a vertical cut. The fabric, or compressed or divided block, is used as a printing block, by being applied for a short time to the collodionised surface of the substratum, whereupon the adjacent and uniformly distributed dyestuffs in these blocks migrate into the collodion. These printing blocks may be used for the same purpose more than once, whilst any traces of gelatine adhering to the substratum after the impression may be removed by washing. If the substratum be gelatinised, then the printing blocks must be made of stained collodion, the dyestuffs used in this event being such as will migrate into gelatine.

In order, for optical reasons, to dispense with an insulating layer between the three-colour screen and the panchromatic emulsion, the screen stratum, on the surface of which the patches of colour are carried, must consist of some material other than that of the panchromatic stratum. If the panchromatic stratum be a gelatine-silver-bromide emulsion, the screen substratum must be made of collodion or caoutchouc, for instance; but if the panchromatic stratum consists of collodion or other substances, then the substratum carrying the screen must no longer be of collodion, but of some other material, such as gelatine. The inventor also refers to the use of paper for producing paper prints. Jan Szczepanik, Luisenhof, Weisser Hirsch, Dresden.

**COPIING SCREEN-PLATE COLOUR TRANSPARENCIES.**—No. 28,614. 1907. The invention relates to the use of the polychrome colour screen plates obtained by the section-cutting method, applied to a block formed of a series of superposed films or layers of coloured collodion or similar material. In using such plates, as in the case of plates of linear structure, it is proposed, in order to distribute the colour field of the screen uniformly, that the line screens of the negative and positive should be so arranged that their lines intersect each other at a right or at an oblique angle, whereby it is also made possible to make enlargements of the coloured screen negatives. The invention therefore consists in providing the negative and positive plates or supports with screens prepared by cutting section from compressed blocks of superposed foils of different colours, applying sensitised emulsion to such line screen-plates or supports, and arranging the second or positive line screen-plate with its lines intersecting the lines of the first or negative line screen-plate when exposing the positive screen-plate. The screens produced in this manner are preferably provided with a protective coating, for which it is best to use collodion or celluloid film. Arthur Schwarz, 27, Siemensstrasse, Steglitz, near Berlin.

The following complete specification, etc., is open to public inspection before acceptance under the Patents Act, 1901:—

**COLOUR STEREOSCOPY.**—No. 28,764. 1907. Apparatus for taking photographs in colours and causing them to appear stereoscopically. Geisler.

### New Trade Dames.

**CINE-PHONO.**—No. 304,769. Phonographic apparatus, other talking machines, and accessories included in Class 8 relating thereto; cinematographic apparatus, projecting lanterns, and accessories included in Class 8 relating thereto, including films included in Class 8; and synchronising apparatus included in Class 8 for simultaneously synchronising phonographs and cinematographs. Compagnie Générale de Phonographes, Cinématographes, and Appareils de Précision, 99, Rue de Richelieu, Paris, France, manufacturers. July 16, 1908.

**RAJAH COMPETITIONS.**—Messrs. Rajah, Ltd., send us a new circular relative to the monthly competition in which they offer a folding pocket camera, fitted with Beck-Steinheil  $f/6.3$  anastigmat, valued at £8 3s. 6d., for the best print or enlargement on any of the Rajah papers or postcards. There is only one condition—viz., the goods must be purchased from a photographic dealer. All prints, including winning prints, are returned if return postage is included.



## Analecta.

*Extracts from our weekly and monthly contemporaries.*

### A Useful Cement in the Studio.

The "Artura Bulletin" suggests that a cement made by fixing litharge with glycerine will be found very valuable for making nearly all kinds of repairs in the photographic studio, as it may be applied almost on any surface or material and, when thoroughly hardened, is practically water, acid and heat proof. The litharge should be added to the glycerine. For repairing broken graduates, porcelain trays, etc., it should be of the consistency of thick cream. The edges of the break should be pressed firmly together and allowed to set until thoroughly hardened, while for repairing large-size cracks in wood or metal dishes, it should be mixed considerably thicker, almost to the consistency of putty. There are a hundred and one instances in which this cement will be found to be exceedingly useful.

### Bromide Solution of Hypo-ferricyanide as a Reducer and Clearing Bath.

An editorial article in "Photo-Notes," dealing with the modification of the Farmer reducer, published by Mr. C. Welborne Piper in our issue of May 1, 1908, recommends the following formula:—

Hypo, 40 per cent. solution	...	2 ozs.
Potassium ferricyanide, 20 per cent. solution	...	2 drams.
Potassium bromide, 10 per cent. solution	...	2 drams.
Water	...	12 drams.
Ammonia (strong)	...	2 drops.

This is a strong reducer, and if a weaker one is desired the ferricyanide and bromide can be reduced to half quantities. It will be found that this reducer has a very marked effect on plates, and a plate that is slightly veiled is cleared very rapidly. Indeed, we use the reducer as a clearing solution for both negatives and lantern slides. For this purpose we fill a deep dish and after simply dipping the plate once or twice into the solution. After each dip it is rinsed under the tap and carefully examined to see if the effect is sufficient. Sometimes one dip alone is quite enough. The clearing is generally carried out after fixing, but before any washing. It can, of course, be done after washing, but a second washing becomes necessary. In any case no attempt should be made to either reduce or clear a half washed plate. If the film is either free from hypo or quite saturated with it then the operation may be carried out with safety, but if the hypo is only washed out, uneven markings are pretty sure to result. Yellow stain is often a trouble when Farmer's reducer has been applied to a plate for a long time, or when the same solution is used for several plates in succession. Quick action in a strong solution is the best preventive of this trouble, but the modified reducer recommended is much less prone to give it than the old formula.

### FORTHCOMING EXHIBITIONS.

December 11 to 14.—Cambridge and District Photographic Club. Sec., T. J. Sowdon, Sunny Side, Guest Road, Cambridge.  
 December 20.—Redhill and District Camera Club. Sec., J. Paterson, News House, Redhill.  
 December 23 to 26.—Lancaster Photographic Society. Entries close November 14. Sec., J. Holt, 11, Fern Bank, Lancaster.  
 December 9 to 12.—Bolton Amateur Photographic Society. Secs., A. N. H. Wylde and J. Bailey, 25, Croston Street, Bolton.  
 December, 1908, to January, 1909.—Kiew International Photographic. Sec., S. T. Horowitz, Technical Society, Kreshchatik, 10, Kiew, Russia.

1909.

January 6 to 27.—Northern Photographic (Manchester). Entries close December 11, 1908. Sec., S. L. Coulthurst, Broad Oak Road, Worsley, Manchester.

January 13 to March 13.—South London Photographic Society. Sec., H. Creighton Beckett, 44, Edith Road, Peckham, S.E.

## Dew Apparatus, &c.

A New Projection Arc Lamp. Sold by A. E. Staley and Co., 19, Thavies Inn, Holborn Circus, London, E.C.

A new automatic feed arc lamp, which should be very favourably received for enlarging and lantern purposes, has been introduced by Messrs. Staley and Co., at whose showrooms in Thavies Inn it can be seen working. The lamp is provided with magneto automatic adjustment, and certainly gives a most steady light, requiring no adjustment, and being brought into action simply by switching on the current. The mechanical construction of the lamp is of a very solid character, and rack adjustments, vertically, up and down, and sideways, are provided. The lamp is supplied for either direct or alternating current at the following prices:—

	£	s.	d.
6 ampères, 110 volt, direct current	4	5	0
6 ampères, 110 volt, alternating current	4	15	0
6 ampères, 220 volt, direct current	4	15	0
6 ampères, 220 volt, alternating current	5	5	0
15 ampères, 110 volt, direct current	5	15	0
15 ampères, 110 volt, alternating current	6	10	0
15 ampères, 220 volt, direct current	6	10	0
15 ampères, 220 volt, alternating current	7	5	0
30 ampères, 110 volt, direct current	12	10	0
30 ampères, 110 volt, alternating current	14	0	0
30 ampères, 220 volt, direct current	14	0	0
30 ampères, 220 volt, alternating current	15	10	0

## New Materials, &c.

Photo-Fans. Sold by J. Fallowfield, 145, Charing Cross Road, London, W.

Quite a novelty, which the firm of Fallowfield has just placed upon the market in time for photographers to make a Christmas specialty of it, is a hand-painted fan, measuring about 6 x 7 inches, and of the series of shapes shown in the illustration. The designs number six in all, each providing space for the attachment of a photograph, and



it is easy to see that a photographer might create new business in the use of these new introductions by offering them, not only as a form of portrait photograph, but also for the presentation of menu cards,

ball programmes, and similar articles which might be purchased in numbers for social functions. The fans retail at 6d. each, 5s. 6d. per dozen, or 60s. per gross.

**CALENDARS AND CHRISTMAS SEALS.**—The Crown Photographic Manufactory, Rotherham, send us samples of the attractive gilt mottoes and gummed seals, both devices of which good use may be made during the imminent Christmas season. The former are sold at 1s. 6d. the latter at 1s. per 100. The firm also supplies an inexpensive line in calendars in the shape of a mount  $6\frac{1}{2} \times 4$ , with space for circle print of  $2\frac{1}{2}$  in. diameter. The mount bears a calendar table for the year 1909, and is sold at 1s. per dozen.

### CATALOGUES AND TRADE NOTICES.

**SECOND-HAND LENSES AND CAMERAS.**—We are in receipt of a list just published by Mr. Arthur Spencer, 41, Harrow Road, London, W., in which is priced a very conveniently arranged selection of lenses, cameras, and other photographic apparatus. Mr. Spencer handles a large amount of apparatus, and we can vouch for the fair and business-like manner in which customers are treated. The present list is particularly strong in lenses, hand and stand cameras, all of which are classified and arranged in order of size.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

FRIDAY, NOVEMBER 13.

Birkenhead Photographic Association. "On the Printing, Developing and Toning of Velox Papers." W. F. Slater.

SUNDAY, NOVEMBER 15.

South London Photographic Society. Excursion to the City and Westminster. H. C. Beckett.

MONDAY, NOVEMBER 16.

Southampton Camera Club. "Making and Toning of Gaslight Lantern Slides." W. H. Trigg.

Acton and Chiswick Polytechnic Photographic Club. "On the Printing, Developing and Toning of Velox Papers." W. F. Slater.

Scarborough and District Photographic Society. "A Chat About Reptiles." W. J. Clarke, F.Z.S.

Bradford Photographic Society. "On the Fringe of the Austrian Alps." C. B. Howdill, A.R.I.B.A.

Kidderminster and District Photographic Society. "Photographic Lens Making." Taylor, Taylor and Hobson.

South London Photographic Society. 1908 Affiliation Prize Slides.

Stafford Photographic Society. Photography 1908 Prize Slides.

Catford and Forest Hill Photographic Society. Monthly Competitions. Criticism by W. Benington.

Rodley, Farsley, Calverley, and Bramley Photographic Society. "Enlargements." Messrs. Mellor and Hartley.

Lancaster Photographic Society. "The Causse." J. W. Pickard.

TUESDAY, NOVEMBER 17.

Royal Photographic Society. The 11th Traill-Taylor Memorial Lecture. "On the Regulation of the Rays in a Lens System." F. Wandersleb, Ph.D.

Halifax Camera Club. "Exhibition of Thornton-Pickard Prize Slides and Apparatus." R. Hesketh.

Leeds Photographic Society. "The Oil Process." Rev. Henry W. Dick.

Hackney Photographic Society. "Some Novel Lighting Effects." H. Essen-high Corke.

Hanley Photographic Society, Y.M.C.A. Photography Prize Slides.

Chiswick Camera Club. "Ancient Abbeys and Churches of Essex." C. Forbes.

Worthing Camera Club. "Enlarged Negative Making." J. F. W. Goodwin.

Wimbledon and District Camera Club. "On the Printing, Developing and Toning of Velox Papers." W. F. Slater.

Blackburn and District Camera Club. "Picture Making." Walter J. Pearse.

Epsom and District Literary and Scientific Society. "Flashlight Photography, Development, Rapid Fixing and After Treatment of the Negative." Chas. Zimmermann & Co.

WEDNESDAY, NOVEMBER 18.

Borough Polytechnic Photographic Society. Lantern Slide Competition.

Wimbledon Park Photographic Society. "Framing the Finished Picture by Means of a Passe-Partout Outfit." J. Adams.

L.C.C. School of Photo-Engraving, Bolt-Court. "Book Ornament." E. F. Strange.

Woodford Photographic Society. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.

South Suburban Photographic Society. "Haunts, Habits and Homes of a Few Rare Birds." J. Cyril Crowley.

North Middlesex Photographic Society. "Enlarging." D. Fox.

Croydon Camera Club. "The Intensification of Negatives." Walter Wood.

Leeds Camera Club. "Some Dutch Places and People." Arthur Marshall, A.R.I.B.A.

THURSDAY, NOVEMBER 19.

London and Provincial Photographic Association. "Telephotography." Ernest Marriage.

Richmond Camera Club. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.

Handsworth Photographic Society. Photography Prize Slides.  
Liverpool Amateur Photographic Association. "Hints on Lenses for Photographers." F. W. Parrott.  
Leek Photographic Society. "A Winter Holiday in Switzerland." H. A. Blad.  
Midlothian Photographic Association. Members' Night.  
Aston Photographic Society. "Exhibition of Thornton-Pickard Prize Slides and Apparatus." R. Hesketh.

### ROYAL PHOTOGRAPHIC SOCIETY.

MEETING held Tuesday, November 10. Mr. Frank P. Smith gave a lecture on "Flies and their Foes through Microscope and Camera," and employed both lantern and cinematograph to illustrate a most humorous lecture. The lecturer treated his subject in a manner calculated to both interest and amuse his audience, the cinematograph illustrations proving particularly entertaining, and the proceedings terminated with a hearty vote of thanks to Mr. Smith.

**THE PHOTOGRAPHIC CLUB.**—The annual general meeting was held in the club room, Red Cross Hotel, Paternoster Square, on Wednesday, the 4th inst., Mr. F. A. Bridge in the chair. The report of the committee and the balance-sheet were adopted. The election of the officers and committee for the ensuing year resulted as follows: Trustees: Messrs. F. A. Bridge and H. Snowden Ward. Committee: Messrs. R. R. Beard, D. Bradford, T. W. Derrington, G. Edey, Mackie, H. Muller, C. H. Skillman, W. Wiedhoff. Hon. Sec. and Treasurer: A. Corbett.

## Commercial & Legal Intelligence

**THE CANVASSING FRAUD IN DORSET.**—Lilian Welch, a married woman, living in Monmouth Road, had been sued, before the Dorchester County Court, by Allan Richard Macartney of Bridgwater, trading as the Modern Art Company, for 7s. 6d., balance of a charge of 12s. 6d. for the supply of an enlargement of a photograph of her husband, framed. Defendant's husband appeared on her behalf, and said that he wished to expose plaintiff's methods. A canvasser came round from house to house and offered to take any photograph and make an enlargement of it for nothing. Tempted by this offer people gave him photographs. The enlargements were made, and then plaintiff came round with them framed and asked 12s. 6d. for the framed production, the money being ostensibly for the frame. His wife was one of the victims. She had paid 5s., which she considered to be far more than the value of the frame, as the portrait could be framed quite as well in Dorchester for two or three shillings. After hearing the evidence the Judge dismissed the summons. Defendant then said that if plaintiff would give him back the five shillings which had already been paid he could take the framed portrait away.

**THE CANVASSING GAME AT BRENTFORD.**—At Brentford Police court last week, a charge of attempting to obtain 10s. 6d. by fraud from an Ealing servant girl against Adolph Breslaner, of Blenheim Crescent, Notting Hill, was heard. The girl was seen at the door of her house in an agitated condition talking to the prisoner. Sergeant Hambrook made inquiries, and the girl told him that a week or two young women called on her and asked her for a photograph, stating that they would give her an enlargement free, as they were opening a studio at Ealing. She gave them a photograph, and received a paper with the words, "Special offer, 10s. 6d." The prisoner then brought the enlargement and demanded 10s. 6d., when she refused to pay, told her she would be summoned. The girl, Heldmann discharged the prisoner, but added that there was no doubt that the girl foolishly believed the story of the women.

**BRISTON BANKRUPTCY.**—In a notice appearing under this heading in our issue of October 30 we regret that two figures were inadvertently transposed, the amount of the debtor's liabilities being given as £534 13s. 6d. instead of £354 13s. 6d., the latter being the correct amount.

**A GENERAL MEETING** of the members of the Art Photogravure Co. Ltd., is to be held at 113, Wool Exchange, London, on December 15, for the purpose of having an account laid before them showing in manner in which the winding-up has been conducted and the property of the company disposed of.



## News and Notes.

**NEWMAN AND GUARDIA, LTD.**—We learn that Mr. A. S. Newman is no longer connected with the firm of Newman and Guardia, Ltd., of which since the death of Mr. Guardia a little over two years ago he has been a director. Mr. Newman, it is hardly necessary to say, has for nearly twenty years past contributed his exceptional talents as a mechanic to the design and construction of the cameras and other instruments which under the name of "N. and G." have become not only famous but, it is not too much to say, hall-mark of quality and of punctilious workmanship.

The business of Messrs. Newman and Guardia, Ltd., will, we learn, be carried on as hitherto. In the manufacture and supervision of the standard "N. and G." instruments the firm will retain in their service those who have long been in their workshops, while the general management of the business remains in the hands of Mr. Frank Polwell. Patrons of the firm thus have the satisfaction of knowing that the high quality of the "N. and G." manufactures is to be maintained, and the supply of the standard instruments and accessories continued without interruption.

**CINEMATOGRAPH SCANDAL.**—A case of revolting cruelty to a horse was decided last week at Lorient against a cinematograph company which has made a specialty of reproducing dramatic scenes. The company accepted for production a scenario which included an episode of a runaway horse throwing itself over a precipice, and some employees of the company were instructed to obtain pictures of such a scene. The men harnessed a horse to a light cart, drove it towards the edge of a cliff 300 ft. high, and then flogged the animal until it dashed off in terror and threw itself over the cliff, while an operator cinematographed the scene. The photographer was acquitted, but the others concerned were fined 12s. each, that being the maximum penalty under French law for cruelty to animals. The company was ordered to pay costs.

**LOSS OF A CAMERA AT THE EXHIBITION.**—At Marylebone County Court on November 2, Mr. F. C. Becker, of the Odol Chemical Works, Southwark, S.E., sued the Franco-British Exhibition Co. for £4, the value of a camera which had been lost in the Exhibition. On May 23 Mr. Becker entered the Exhibition carrying a Kodak, and an attendant stopped him and said that he could not take the camera with him until he had a ticket to use it, adding that it would be quite safe if he left it with him. Mr. Becker handed the camera to the attendant, who deposited it in a side-room. He left the grounds by the Wood Lane exit, and when he applied for his camera it could not be found. Search was made, but with no satisfactory result. His Honour, in giving judgment for the defendants, said the plaintiff had not taken the precaution to see whether the attendant was authorised to take the camera, so he left it at his own risk. His Honour declined to give the defendants costs.

**THE "WORLD NUMBER"** (Welt-Nummer) of our contemporary, "Photographische Industrie," is a production in which our confrère, Herr K. Wolf-Czapek, has our congratulations. The issue for £4, the value of a camera which had been lost in the Exhibition. On May 23 Mr. Becker entered the Exhibition carrying a Kodak, and an attendant stopped him and said that he could not take the camera with him until he had a ticket to use it, adding that it would be quite safe if he left it with him. Mr. Becker handed the camera to the attendant, who deposited it in a side-room. He left the grounds by the Wood Lane exit, and when he applied for his camera it could not be found. Search was made, but with no satisfactory result. His Honour, in giving judgment for the defendants, said the plaintiff had not taken the precaution to see whether the attendant was authorised to take the camera, so he left it at his own risk. His Honour declined to give the defendants costs.

**A PHOTOGRAPHIC SOCIETY FOR GODALMING.**—A society has recently been formed for Godalming and district, membership of which is open to both ladies and gentlemen. The annual subscription has been fixed at 2s. 6d., and a syllabus, which will include lectures, demonstrations, outings, etc., is well understood in course of preparation. Those wishing to avail themselves of the advantages offered by such a society should communicate with the hon. secs., Messrs. S. R. Verstage and R. Steadman, Jun., Holloway Road, Godalming, who will be pleased to furnish full particulars on application.

**"TRAVEL AND EXPLORATION."**—On January 1, Messrs. Witherby and Co., 326, High Holborn, will issue a new monthly magazine under this title. The new periodical will be devoted to all aspects

of travel and will include such features as:—"Personal Narratives by well-known explorers in wild and little known parts of the world." "Colonisation and Travel on the Outskirts of the Empire." Articles by experts on "Where to Travel and What to Explore; How to Travel and What to Take." "New Highways for Travel, Yachting Trips, Extended Motor Tours, Balloon and Airship Journeys." "Biographies of Noted Travellers." "Literature of Travel." "Notes and News by Specialists." The price will be one shilling, and as the magazine will utilise photographic illustrations largely, it will undoubtedly interest many of our readers—some possibly in the way of providing a new outlet for the disposal of rights of reproduction.

**MR. F. H. STANDISH**, who has acquired the business carried on by Mr. W. C. R. Crooke, trading as the National Photo Co., at 152a, King Street, Hammersmith, applied to the local council for three months' renewal of the tenancy agreement which terminates shortly. Subject to certain conditions, the council has granted Mr. Standish the premises on a quarterly tenancy at a rental of £90 per annum. The council state that the tenant will not be entitled to claim any compensation in connection with the widening of King Street on the setting back of the premises let to him.

**L.C.C. PHOTOGRAPHIC RECORD.**—In July last the London County Council referred back a recommendation from the Records Committee that a water-colour drawing of the site of the new County Hall should be obtained. The Council invited the Committee to consider the advisability of providing a suitable photograph, and this week the Committee reported having, in accordance with the foregoing, arranged for photographs of the site to be taken from different positions and mounted on linen for the purposes of record.

## Correspondence.

- \* *We do not undertake responsibility for the opinions expressed by our correspondents.*
- \* *Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*

### LANTERN SLIDES AND BROMIDE PRINTS DIRECT IN THE CAMERA BY REVERSAL.

To the Editors.

Gentlemen,—In my letter to you on reversal there are two mistakes; one, a printer's error, instead of "reversal exposure" please read "increased exposure." The other, which Mr. Carnegie points out, is obvious. It is a transposition of sentences. Naturally, it should read: "That if the exposure has been through the glass, as in the Autochrome plate, the reversal is easier and more complete, the image being at the bottom of film, etc., and vice versa."—Yours truly,

Thornton Heath,

November 9, 1908.

E. FENSKE.

### CATCHING DRIP FROM BOTTLE NECKS.

To the Editors.

Gentlemen,—We have hit upon a method of obviating the objectionable drip which often runs down the label of a bottle after pouring. We had a difficulty in this respect with our "time" developer, and in many cases a drip from the neck of the bottle destroyed the lettering on the label, and even the reading thermometer, which indicates the time to develop at all temperatures. We have now quite cured this defect by a band of several thicknesses of blotting-paper round the neck, which absorbs the drip and does not allow it to reach the label. It is true it gives the bottle a "sore-throaty" appearance, but that is better than a slobbered pinafore, and all our developer is now sent out in this way.—Your truly,

Hereford,

November 9, 1908.

WATKINS METER CO.

### ACTION FOR RETURN OF DEPOSIT.

To the Editors.

Gentlemen,—We notice in your last issue a report of a case in which a Mr. Marsh is described as trading as the Record Photo Printing Co., of Monument Road, Birmingham. This description is incorrect,

inasmuch as the Record Photo Printing Co. is the property of the above company, and Mr. Marsh was not even a partner in it, but was in our employ on a salary and commission.

With regard to the complainant in the case, a Mr. E. Sims, Marsh had our permission to take him as a pupil, and we understand the salary Marsh offered him was conditionally that he obtained certain orders, and this salary to be paid out of Marsh's own commission, but Sims apparently found the work too heavy and backed out of it.

We think that it is only just your readers should understand the true state of affairs, and since Marsh is no longer in our employ, kindly dissociate all reports of this case with the Record Photo Printing Co., which has been in existence some twelve years.—Yours faithfully,

THE CAMERART Co. (per C. R. Sugden),  
Proprietors of the Record Photo Printing Co.

3, Cherry Street, Birmingham,  
November 9, 1908.

#### PHOTOGRAPHS IN RELIEF.

To the Editors.

Gentlemen,—As subscribers to the "B.J." we have read the article on page 828, "Photography in Relief," which will lead your readers astray. On page 257 of issue No. 2,290 and page 202 of No. 2,288 you have given a good account of our process and of what would happen if instructions in your last article were followed. Not only is the relief obtained by the known process which you describe extremely slight, but it is also absolutely wrong when printing is done from an ordinary negative. We have studied mixtures and processes specially for this purpose, and allowing of the production of reliefs exceeding 1 cm. in depth, and we have experimented with another process in order to obtain a negative the transparencies in which are proportional to the relief of the original (which no other process will give), which is in course of being patented, and the results of which have already proved excellent in practice. Results obtained by our system may be judged from the article in the last number of "Je sais tout," and other journals containing the account of Mr. Carlo Baese. We shall make a communication of this new process and of the results as soon as the necessary patents are concluded. In order to recall to your notice the English accounts of the process we mention "Photography," issue No. 832, page 345; "Process Photogram," No. 129, page 151; "Photographic Journal," August, 1904; and "Scientific American," January 1908, page 57.

FOTOSCULTURA BAESE.

3, Via Nazionale, Florence, Italy.

[It was not claimed for the process which we described in our issue of October 30 that it gave a facsimile reproduction of the relief in a natural object, but it is nevertheless a thoroughly practical process for the production of a considerable degree of relief, the distribution of which is, of course, dependent on the lighting of the subject. Our correspondents are doubtless aware that the method we described in a modified form was much used in the past for photo-mechanical purposes; also for the production of bas-relief medallions.—Eds. "B. J."]

#### PROFESSIONAL PHOTOGRAPHY IN BRITISH COLUMBIA.

To the Editors.

Gentlemen,—In your issue of August 28 there appeared an article entitled, "In the Land of Makeshift," from the pen of a contributor who signs himself "B.J.'ite in British Columbia." Whilst there is much to commend itself to the energetic photographer who is unwilling or cannot invest capital in his business, there are also one or two points in connection with this contribution which, I think, are liable to convey a wrong impression of the state of the profession in the province of British Columbia. In the first place, your editorial comment which prefaces this article might lead some of your readers to suppose that it is not possible to obtain high-class photographic materials in the province. As far as the city of Victoria is concerned this is not the case, as there are two good houses here which carry a full line of all the ordinary stock required by the professional or amateur photographer, and even if some exceptional article should be required it can readily be obtained from Seattle in two or three days' time.

As far as the city of Vancouver is concerned, which is the place from which your correspondent is apparently writing and is located, I should imagine that an even better state of affairs pertains,

although I cannot speak as specifically on this point from my own actual experience. However, Mr. Frank Butcher, who was out here a short time ago, could give you exact information on this point, and he will, I am sure, bear out the above remarks regarding the city of Victoria.

The very title of your article is calculated to be very misleading to those who have never travelled, as though it is perfectly true that your correspondent has, according to his own admission, been sufficiently ingenious to make use of "makeshifts," it is, as I have pointed out above, unnecessary to do so had he wished to call upon the stock houses and obtain his materials from them in the ordinary course of trade.

There unfortunately seems a tendency on the part of some Englishmen who come out to British Columbia and who do not allow themselves sufficient time to become acclimatised or to thoroughly understand the conditions of this country, to write to the papers in the Old Country, as witness the recent correspondence in the "Yorkshire Post," and to malign the whole province of British Columbia. This is, I need hardly say, unjust, and while I wish it to be clearly understood that I am sure your contributor cannot be classed in this category, yet, at the same time, I think a certain sentence in his article—i.e., "Here to-day, to-morrow—where?" coupled with your predatory remarks, is calculated to convey a wrong impression of the conditions prevailing in this province. It may interest you to know that in this city we have a very flourishing photographic society, several of the members of which do exceedingly good work, and the recent joint exhibition which they made at the Provincial Fair, which was held here last month, was an exceedingly creditable one. As the judge of the photographic sections at this Fair for the last two years, I can also assure you that the professional exhibits called forth most favourable commendation, and could not be turned out by anyone who had not been working in this line for quite a number of years.

As time goes on this happy state of affairs will no doubt show still further development; and, in conclusion, may I draw your attention to an article which appeared in "Photograms of the Year 1904," from the pen of Mr. H. Mortimer Lamb, entitled "Pictorial Photography in British Columbia," from which you will see that the work done here, even at that date, called forth both the favourable comment of this recognised critic as well as that of the editors of this standard publication.—Yours truly,

ARTHUR V. KENAH.

Law Chambers, Bastion Street, Victoria, B.C.

[Our correspondent reads into the article by "B.J.'ite" and into our introductory paragraph a meaning which is not in either of them. Our contributor did not state that it was not possible to get high-class apparatus; on the contrary, he stated that it was; but he counselled the policy of keeping equipment which, on account of its cost, must be taken to any new location the photographer may choose, at a minimum. And in view of the still active development of the country which is going on it is reasonable to assume that his judgment is worth more than that of an armchair critic.—Eds. "B. J."]

MIDLAND PHOTOGRAPHIC FEDERATION.—The report for the first year (1907-1908) states that at the present date the membership is 43, and there are only a few societies in the Midland area outside its ranks. This may be taken as a proof that the usefulness of such an association as this is generally recognised. The Council would like to urge all societies to be represented at Council meetings. This is most important, as it is the best means whereby intimate connection can be secured between the members of the societies composing the Federation. The lecture list has been largely drawn upon, forty lectures having been given before sixteen societies. The circulating portfolio and slides have been exhibited at most of the societies. On June 9 the first united excursion was held, Oxford being the place selected. Forty-two were present from eight societies. The Federation is much indebted to Mr. Reginald A. R. Bennett, M.A., of Oxford, for his kindness in meeting the party and facilitating arrangements. Council meetings have been held at Birmingham (2), Leicester, Derby, Handsworth. The first annual meeting was held in Birmingham, October 1908, and the following officers were elected:—President, Mr. Harold Baker (Birmingham); vice-presidents, Mr. G. Whitehouse (Birmingham), Mr. W. T. Mason (Leicester), Mr. C. Barrow Keene (Derby), Mr. A. E. Cope (Handsworth); treasurer, Mr. Arthur Black (Nottingham); secretary, Mr. Lewis Lloyd (Birmingham).



# Answers to Correspondents.

## PHOTOGRAPHS REGISTERED:—

South London Photographic Company, Limited, 129, Newington Causeway, London, S.E. Photograph of Ernest Barry. Two Photographs of Harry Blaxter, 82, Chapel Road, Rochdale, Lancashire. Photograph of Hansom Cob with Men Advertising Adolph's Dairy, Rochdale. Photograph of the Stockton-on-Tees Amateur Football Team, 1908. T. Shrubsole, 82, Chapel Road, Norwich, Norfolk. Photograph of the Norwich Musical Festival Band and Chorus. Laidlaw, 6, Gayfield Place, Edinburgh. Two Photographs of Dr. W. F. P. Higgins, Holyrood Street, Chard, Somerset. Photograph of St. Mary's Church, Chard, Men's Bible Class. Photograph taken at Corn Exchange, Chard, of Ancient Custom of letting Market Tolls of Chard Borough by Minnie Sand Glass. Davis, 18, Princes Street, Edinburgh. Photograph. Group, Executive Council, Scottish National Exhibition, Edinburgh, 1908. G. Skellman, 23, Uxbridge Road, Shepherd's Bush, London, W. Photograph of Miss M. Walker in Colleen Dress.

G. W.—You must be guided by the fact that you cannot take action for infringement done prior to registration. It is usual to accept double fees for photographs innocently reproduced without permission, but apparently the use in this case was not innocent. Perhaps if you intimate your intention to stick out for your rights they may make you an offer, but we advise you to make quite sure beforehand what your rights are.

DEVELOPER.—Please let me know which developer you consider best for focal-plane photography. Would you advise pyro-metol?—LONG READER.

It is one of the most suitable, and used, perhaps about equally, with pyro-ammonia and the softer working developers, such as sodinal, etc.

MATRICAL PHOTOGRAPHY.—Are there any objections to the taking of photographs in theatres during the performance, (a) for personal use only, (b) for subsequent publication?—A. W. BROWN.

It is entirely a matter for the management of the theatre, who have, in the case of some actors, to bear in mind the fact that they (the actors) may have agreements with photographers for the sole right of making portraits of them.

FRY GLASS.—I have a studio, which is covered on the top and sides with ground glass. The outside is all right, but the inside, which is the rough side, is very dirty and inclined to look smoky. This defies all efforts to come clean, and I have tried chemicals of various sorts, and now is the time we want all the light we can get. Will you kindly let me know what will answer the purpose?—ANXIOUS ONE.

We should advise you to thoroughly wet the glass with strong soda and water. Then, after a time, scrub it with a brush and soap and water, and finally rinse with clean water. It is possible that the glass itself has become discoloured. Some kinds of glass discolour with long continued exposure to light. When that is the case the only thing to be done is to replace it by new.

PRINT.—Would it be possible to restore the photograph enclosed? cannot tell what paper it is on, but think the faintness is due to under-printing or developing. It has not faded, but is the same as I received it, some seven or eight years ago.—E. P. CONWAY.  
Nothing whatever can be done in the way of improving the print. If you could get the loan of the negative it is possible you might be able to obtain a better print from it. The print has been returned to you.

HAIR.—We should esteem it a favour if you would kindly inform us a formula how to make up oxgall, as we are told this is the best stuff to use to clean plate-glass before squeegeeing on same. This pretty well prevents sticking, and gives a much better gloss.—MR. GEORGE LAWRENCE PUBLISHING COMPANY.

The preparation of oxgall, as supplied by the artists' colourmen, is a troublesome and very unpleasant operation, therefore we would recommend you to purchase it ready prepared. It is not expensive, and a little of it goes a very long way.

APPRENTICESHIP.—Being a constant reader of the "Journal," I should be much obliged if you would kindly give me a little information re the enclosed. My son was apprenticed to a firm of photographers for three years. He has now just a month to complete his apprenticeship. The agreement states that in return

for his services he was to be fully instructed in the business of a photographer and the "art of photography." I have just had an interview with his master, and asked him whether he was not going to instruct my son in the studio work, re lighting, etc. He declines to have anyone in there with him. I believe the operating-room plays an important part in the "art of photography." Is this the usual method that an apprentice is not allowed to be instructed in the studio work? If not, what remedy have I? Can I take action?—AGREEMENT.

Of course, studio work, lighting, posing, and dealing with sitters generally is what the apprentice should be taught, as it is one of the most important parts of the "business and art of photography." If the indenture is properly stamped you can proceed against the master for the return of the premium paid, if any, and for damages for the loss of the young fellow's time.

UNSCRUPULOUS BUSINESS.—I gave an order to a firm of postcard publishers for a series of postcards, the same to be reproduced with my name on and called the ——— Series. Same were duly delivered. I find since that this same firm has been supplying other people with these postcards, which bear my name. Have I any remedy? The views are not registered.—POSTCARD.

Yes, you have a remedy. You can obtain an injunction restraining further use being made of your negatives; also you can sue the firm for damages. Better put the matter in the hands of your solicitor without delay.

BOOK ON X-RAY WORK.—I have a 10in. coil and record X-ray tube and 12 volt accumulator. Will you kindly inform me in your "British Journal" the best focus for radiographing a knee or thick portion of body? The hand I can manage all right, but cannot get anything much on a Lumière negative, after giving two minutes exposure. Is there a book which would direct me?—C. D.

"Practical Radiography." By Ward and Isenthal. (Dawbarn and Ward, Ltd. 6s.).

CONRAD.—(1) "Photography in Colours," by R. Child Bayley, will give you a good account of most of the processes. (2) Autochromes you could get, but examples and apparatus for the other processes are difficult to obtain. (3) Certainly a prism can be used in conjunction with a projection lantern. (4) Yes, apply to Sanger-Shepherd and Co., Gray's Inn Passage, Holborn, London, W.C. (5) They do, if strongly illuminated.

DEVELOPER.—I shall be obliged if you can give me a good pyro-soda tank developer formula to take about 25 to 30 minutes for portrait work.—S.

Pyro 1 oz., potass metabisulphite 4 oz., water 10 oz. This is diluted at time of use to make A solution. B is—Soda sulphite 2 oz., soda carbonate cryst. 1 oz., water 20 oz. Developer—A 1 part, B 1 part, water 8 parts, for a time of development of thirty minutes at 60 to 65deg. F. But almost any developer can be used, and in any case the time must be tested for a given brand of plate.

JOS. FORREST.—1. See page 818 of the "Almanac." 2. Amidol is an excellent developer for bromide papers; for plates we should prefer others which keep better in solution. You do not say what special object you have in view, so we can scarcely advise you. 3. You had better give a trial to the process given by Mr. Carnegie in our issue of October 23, page 810. 4. There is no special book on professional tourist photography.

GREEN TONES.—I should be much obliged if you can give me a method for obtaining green tones on Aristo platino-collodio-chloride paper.—F. J. S.

We know of none, but there are several solutions sold for the purpose (e.g., by the Leto Co.) for bromide and gaslight prints.

C. C. S.—The photograph has the appearance of over-correction and too flat lighting. Evidently you need to control your lighting by cutting off a good deal of the light which now illuminates both sides of the face equally. Stamp for return of photograph was not enclosed.

OWNERSHIP OF NEGATIVES.—Two and a half years ago I left a studio, owing my landlord a few pounds in back rent. This, however, was paid shortly afterwards. I left a few hundred negatives at the studio, not thinking I should require them again, but now I find some of my old customers are inquiring about some of them for re-orders, and I wish to take them away. The landlord refuses to give them up, at least, the sons do, the original

landlord being dead. I may state that I did all the business, as regards paying the rent, etc., with the manager, who did everything on behalf of the landlord. He still remains. I was always under the impression that no one could claim your own negatives, or use them in any way, as they belong solely to the photographer who took them, provided, of course, that he does not sell them outright. Furthermore, are not the original sitters the part-owners of the individual negatives, as they have paid for the photographs in the first instance? And could I stop the sale, or in any way the free use of their own negatives? The manager referred to in this letter admits he does not know anything about the law, or holding of negatives, and, of course, not having anything to do with a photographic business, he is only using his own ideas in the matter. I shall be pleased to hear about this, so that I shall know how to act. He has an idea that they are valuable, but as far as he is concerned they are of no more value than ordinary glass. The studio was unoccupied until this summer, when a friend of mine took it on. Being a friend, he was quite willing for me to take the negatives away. Had it been a stranger, he would, no doubt, have used the negatives to fill up his showcase with samples, etc., and could, of course, have told his clients that he had taken them originally. That is the special reason why I wish to take them away.—W. H. S.

The negatives are certainly yours and you have a right to them. They are not the joint property of photographer and sitter, though the photographer must not make use of them without the sanction of the sitter. We presume the "Manager" referred to is an agent of the landlord, but except by legal restraint or a similar process in respect of debt he has no right to retain them, and a letter from your solicitor would, we should judge from the facts stated, induce him to give them up.

**FLASHLIGHT GROUP.**—I have to photograph a stage group of about twelve persons by flashlight. Would you tell me which is the best to use, magnesium ribbon or the powder with lamp? 2. Would one lamp be sufficient, and where would be the best place to stand the lamp? 3. What lamp do you recommend to use?—**FLASHLIGHT.**

Powder is the only practicable method. As you are evidently a stranger to flashlight work the best advice we can give you is to refer you to the book, "Magnesium Light Photography," by F. J. Mortimer (Dawbarn and Ward, 1s.), which gives very complete advice as to lighting. A very good lamp is supplied by Messrs. Chas. Zimmermann and Co.

**DEVELOPER.**—Have made developer as follows:—1 oz. hydroquinone, 1 oz. metol, 8 oz. carbonate of soda, 8 oz. sulphite soda, 80 grains potass. bromide. I dissolved metol in pint of boiling water and added other ingredients, making up to 80 oz. with cold water, but something has precipitated to bottom of bottle and will not dissolve. Where am I wrong?—**J. CUTLER.**

In using such hot water. There is no necessity to employ water more than just hot to the hand. Otherwise, the order of dissolving the ingredients is correct.

**AJAX.**—Certainly such originals can be restored. Apply to Mr. E. W. Foxlee, 22, Goldsmith Road, Acton, W.

**COPYRIGHT.**—1. I have been told that it is impossible to copyright photographs of Royalty, and should be glad if you would let me know if this is correct. 2. I am painting a picture of the King for which I am taking the particulars from several others. Shall I be infringing any copyright by reproducing same as photographs?—**ALBION.**

1. You are misinformed. The photographs of Royalty are subject to copyright like any others. 2. If you copy parts only of other copyright photographs of the King you will be infringing the copyright in them both by making the painting and afterwards reproducing it.

**W. E. CLINT.**—The firm is well known in Detroit, Mich., U.S.A., and this address should find them. We do not know if they have an English agent. Spooner's, corner of Southampton Street, Strand, might supply them.

**PRESERVING NEGATIVES.**—Thanks for your reply re "Preserving Negatives." I did not mean so much by way of varnishing as storing safely, and yet so as to be readily found. What negatives seem to suffer most from is damp in some form; if laid one

against the other on shelves, change of temperature induces condensation. This attacks the edges and gradually gets absorbed into the whole film, causing spots of mildew more or less marked. Old collodion negatives used to be stored in grooved boxes, but these occupy so much space that this is an item when you have several thousands.—**CLIMAX.**

The absorbent qualities of the films being inherent in the gelatin process, there is no other remedy that we know of than impermeable varnish, such as the Vanguard. We know no system of storing which will obviate the dangers of damp, but ventilation of the storage boxes or shelves should to some extent help you.

**A CASE OF AGREEMENT.**—Last May in answer to an advertisement my employer wrote and asked for my terms and salary required. I asked 30s., but he wrote and told me he preferred giving me a small salary and commission. So he wrote and offered me 20s. and a 10 per cent. commission on all takings. To which I wrote and accepted. He further stated it was a permanency, and that he was opening a branch studio to which I should also have commission on its takings as well. When I arrived there he asked me to take the 30s. the first month and he would stop commission the second month. When I asked him for the commission he told me he would give me 30s. and a 5 per cent. commission over £20 the month. This he did for two months and then he stopped commission. Then at the end of October he told me as business was not so brisk I had better find fresh employment, as after Christmas he could not keep me on. He did not open the branch at all. As there is a difference of between £16 and £18, which I should have had if he had stuck to the original agreement, the question is: Can I claim this amount from him, and can I claim any damages through his breaking his written word? I have his letters he wrote me, and a copy of the ones which I answered his, agreeing to his terms. I have been told I have absolutely no claim on him, as it was not a signed agreement, and others say, If I get his letters stamped it is as good as a signed agreement. As it may mean I cannot find employment in the winter, the money would help to get me over the bad season.—**DUN DOWN.**

As you seemed to have agreed to the different alterations in the arrangements we doubt if you can recover anything, except any commission that may be actually due to you. If you have a written agreement stamped now it will cost you £10, and that it is doubtful if it will be of any value, seeing that you agreed to the modifications since made. You should have had a written engagement for a definite time, and it should have borne a penny stamp, then you would not be in the position you are in now and find yourself.

**VELOX.**—If you must use gas, we advise you to pay a call to Tress Company, 4, Rathbone Place, W., where you can see suitable lamps, or can obtain printed particulars. But a gas lamp is not the best thing for groups.

**SNOW SCENES.**—One reason for the practice is the prolongation of the exposure without the necessity of stopping down; but even a winter landscape has colour in it, and the effects of shadows seem to be better brought out by cutting down much of the exposure of bluish light from the more open portions.

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## The British Journal of Photography

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## SUMMARY.

Dr. H. E. Corke describes his experience with the new "Thames" one-exposure colour plate now upon the market. (P. 884.)

At the Croydon Camera Club last week Mr. T. K. Grant dealt with a number of points in the Autochrome process. (P. 895.)

Dr. G. Hauberrisser has found that the addition of a few drops of tribasic sodium phosphate solution to the developer (edinel or hydroquinone) used for gaslight prints, has the effect of preventing, throughout a series of prints, the good black tone which is obtained by either developer on the first time of using. (P. 887.)

Professor Namias lays stress on the advantage of first fixing prints which are to be toned in the combined bath. This method has the advantage of much greater regularity of action, greater permanence, and economy of gold. (P. 886.)

Some details in the making of negatives, and particularly in finishing them, which should assure their lasting indefinitely under reasonable conditions, are the subject of an editorial article on page 882.

The Professional Photographers' Association is taking up the question often in dispute between photographers and newspapers, namely, the reproduction of copyright photographs without the mutual permission of the photographer. (P. 881 and 895.)

The precautions which should not be ignored when working the Autochrome process during cold weather are dealt with in an article on page 883.

The Traill-Taylor memorial lecture was delivered on Tuesday evening last by Dr. E. Wandersleb. A brief report appears on page 894.

Folding reflex cameras and folding pocket cameras are among the subjects of the week. (P. 889.)

The painful experience (of a well-known worker) of retoucher's cramp is mentioned under "Correspondence" on page 898.

Mr. A. H. Blake suggests a club or portfolio for night photography. (P. 897.)

## EX CATHEDRA.

**The Queen's Photographs.** The album of reproductions of Queen Alexandra's photographs has been so instantaneously distributed throughout the kingdom that to offer a review of it would be quite superfluous. It suffices to say that the "production" of the volume is altogether worthy of the exalted rank of the author and her beneficent purpose. The personal and familiar inscriptions under the photographs complete the charm of this most interesting volume, which, besides benefiting the charities to which the profits of the publication are to go, should still more popularise the art of photography among the hundreds of thousands who will obtain the book. Moreover, Kodak, Ltd., are to be congratulated on the public acknowledgment, which figures prominently next the title-page, that the pictures were taken with a Kodak.

\* \* \*

**The Photographic Rag-Doll.** A novelty in the way of a photograph intended for Christmas presents is being offered to patrons of a fashionable studio in the shape of a doll of the "Teddy Bear" type bearing where the face of the animal should be a photograph of the sitter printed on or transferred to a fabric. The idea of a doll-facsimile of Mamma and Papa must surely tickle the fancy not only of the parents, but equally of the very juvenile son or daughter who both derives and creates an immense amount of fun by heaping endless indignities upon the unresisting effigy of his or her proud progenitors. Many other applications of this idea should suggest themselves to an ingenious mind, and though the forthcoming Christmas season is too close upon us for ideas to be put into practical shape this year, the opportunity for business in toy novelties into which the photograph enters should not be lost sight of.

\* \* \*

**The P.P.A. and Press Photographs.** It will be seen from the report of the committee meeting of the Professional Photographers' Association printed in another column that there is reasonable prospect of a working arrangement being come to between the Newspaper Society, representing the interests of the Press, and the P.P.A., representing the interests of photographers, with regard to some of those occurrences in the publication of photographs by the newspapers which frequently lead to unpleasantness and even more serious consequences. Undoubtedly there have been instances on both sides where injustice has been done, and the hard things each side says of the other probably balance each other. But it is time now that the attitude of mutual recrimination should be abandoned. The Press and photographers are dependent upon one another. Newspapers must have photographs, and it is the business of photographers to supply photographs, and, apart from the

unpleasantness of conducting business in an atmosphere of suspicion, the loss of time involved in settling disputes which are often quite petty in character is serious. Many of the most constantly recurring causes of friction are distinctly preventable, that is to say, they could not arise if there were an established custom with regard to them, and even more complicated matters might be so dealt with that, in default of a prearranged means of adjustment, a simpler, more expeditious, and less expensive method of settlement be provided than an appeal to law. The matter could not be in better hands. The Newspaper Society is fully representative of the business side of the Press, and the Professional Photographers' Association has so consistent a record of dealing with the greater questions that affect photographers with ability, and, withal, in a broad-minded spirit, that the interests of all concerned on the photographic side are assuredly in safe keeping.

\* \* \*

#### The Scottish Salon.

The arrangements for the forthcoming Salon at Wishaw proceed apace. The various committees have had frequent meetings. The Hanging Committee has drawn out a plan of campaign, and the Entertainment Committee has practically completed the programmes. True to the original ideal of the "Salon" to show what other folks were doing, the Council have invited "foreign" exhibits. A graceful tribute has been paid to the memory of the late Horsley Hinton in securing a collection of his works to represent England. Dr. Boon, Italy, has accepted the invitation of the Council to provide a "one-man" exhibition of his work. This exhibit, besides including some of the more celebrated of Dr. Boon's works, will contain a number of new pictures which he is preparing specially for "The Scottish." The entries close on December 7th, and already there is evidence of a big entry, some well-known workers having made great preparations.

\* \* \*

#### Long and Short Focus Lenses in the Reflex.

In our last issue we printed an address by Mr. J. F. Duthie, in which, amongst many useful hints on focal-plane work, we may note a very simple point that has probably escaped the notice of some users of reflex cameras. While long focus lenses are of extreme value, with the reflex it must not be forgotten that their use practically lengthens the exposure. In high-speed focal-plane work the exposures are not governed by the ordinary considerations of light, plate speed, etc. They are, in fact, exposures that the average exposure meter looks upon as impossible, for they have to be controlled simply by the speed of the moving object, or rather by the distance that the image of that object moves within a given

time. With a ten-inch lens the image will move twice as far in, say, 1-1,000th of a second, as it will with a five-inch lens, therefore with the longer focus lens exposure is equivalent so far as sharpness is concerned to 1-500th of a second with the short focus one. If 1-1,000 second gives enough light action to impress the plate, and at the same time secure a sharp image with the eight-inch lens, we can obtain a better result with the five-inch lens at the same aperture if we lower the speed to 1-500. The depth of focus is naturally greater, and we gain in light action. The value of long focus lenses is felt when working at moderate speeds, but at the highest speeds it is the short focus lenses that scores.

\* \* \*

#### Increasing Power of Limelight.

Mr. C. E. S. Phillips, in "Nature," draws attention to a very simple method of increasing the power of limelight, and an expedient may at times be very useful. He simply places an incandescent mantle over the lime. If the lime is turned regularly, as, of course, it should be in any circumstance, a very powerful light can be maintained for about a couple of hours. This may be a valuable idea for those who wish to show Autochromes with an ordinary limelight. Though, of course, neither the limelight nor the mantle give light of quite the right quality, yet the trouble of working at high intensity may be got over by using the two in combination.

#### THE DETERIORATION OF GELATINE NEGATIVES.

We very often have queries relating to the deterioration of negatives, and it is, of course, generally very difficult to answer them, the possible causes of deterioration being varied. It is often assumed that a negative should be indefinitely if varnished; but many of our queries relate to varnished negatives, and it is therefore evident that varnishing alone is not a perfect precaution. The object of varnishing is, of course, to prevent the access of moisture to the gelatine film, but a film dry enough to varnish may yet contain sufficient moisture to lead to future trouble, and we suspect that in a good many cases the moisture is thus sealed up. With shellac varnishes such a state of things can hardly exist, for the film must be heated before the varnish is applied; but with cold varnishes, such as celluloid, it is more than probable that many neglect the preliminary warming that is in all cases desirable. A certain amount of extra trouble is involved in the heating process, and when the varnish dries just as well with heat there is a great temptation to neglect it altogether. Still it should be obvious to everyone that varnishing only protect the image from moisture coming from the outside, and that it affords no security whatever if the

### THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC FOR 1909.

Edited by GEORGE E. BROWN, F.I.C.

THE forty-eighth annual issue of THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC will be published on December 1. This year's ALMANAC reached a total of over 1,000 pages, and the entire edition of 25,000 copies was sold out immediately. Of no other photographic book ever issued can two such unique facts be recorded. The edition for 1909 will also consist of 25,000 copies.

The editorial article will deal very completely with the important subject of

#### REFLEX CAMERAS,

and the systematic review of the work of the year under the title "Epitome of Progress" will be a strong feature of the volume.

The lines followed in the previous editions of the

ALMANAC will be maintained in general, but in a number of particulars the arrangement of the volume for 1909 will be modified to make it more than ever the book of universal photographic reference.

The ALMANAC for 1909 will appeal to photographers the world over as a daily reference guide in practical work. The standard matter and formulæ will be revised and added to where necessary, and, wherever practicable, new features of an informative nature will be added.

NOTICE—IMPORTANT.—Our publishers ask us to inform agents that the issue of 25,000 copies is now almost booked, and, as a second edition will not be printed, those agents and dealers who have not yet sent in their orders are advised to do so without delay.



underneath is moist. In fact, all it does is to prevent that moisture from ever escaping.

Very often, when examining varnished negatives, we have noticed that the film is not completely covered. Portions of the gelatine are left unprotected. There is no need for this to be the case, and in a properly varnished negative the edges of the film should be as perfectly protected as the centre. To secure a perfect seal, it is not a bad plan to scrape away the film for an eighth of an inch all round the plate and then varnish right to the edge of the glass. A very suitable tool for the scraping operation is a one-eighth chisel with a piece of wood tied on to the side so as to project beyond the cutting edge and form a guard. This guard is pressed against the edge of the plate to prevent any side slip of the cutting edge, and the tool is very rapidly run round the margins. We always treat Autochromes in this way, and in the old frilling days, when even a dry film would sometimes curl off the plate, we found it an excellent safeguard. It protected the edges from atmospheric influences that tended to separate the films, and it will similarly serve to protect a dry plate from moisture that otherwise may creep under the protecting varnish.

Another method of securing a perfect protection is to varnish by dipping. We may take a lesson from modern painting methods. When the wagon-builder has got to the paint stage he simply dips the whole wagon complete into a huge paint-pot and then hangs it up to dry. This is a very quick method whether applied to painting wagons or varnishing negatives, and in the case of the latter, celluloid varnish lends itself admirably to the process. When dry, the varnish on the glass side is quite easily rubbed off. The varnish can be kept in one of the old vertical dipping troughs. The dried plate is placed on a glass tupper, dipped, and then set up to dry. Several plates can thus be varnished in the time required to do one by the ordinary method.

Even though a plate is properly dried and varnished, changes will occur if the film is contaminated with chemical matter. If not quite perfectly fixed or not properly washed double is pretty certain to be evident sooner or later, and very quickly if the varnish was applied to a damp film. I suspect that very often the effect that our correspondents describe as "mould" is really due to chemical changes in an unclean image. Possibly the negatives were made in cold weather and fixed in a cold bath. Photographers often fail to realise what a difference temperature makes to the fixing operation. Though ten minutes may be sufficient in warm weather, an hour may be barely enough in the winter if we follow the old rule to leave the plate in the bath for twice as long as the white silver compound takes to disappear. Washing is, of course, very often imperfect. We have heard photographers refer with pride to the fact that they never washed negatives for more than ten minutes. On the other hand, we have known others to be equally proud, though with equally small reason, of the fact that they always wash negatives all night, which means, we may suppose, eight hours washing or more. As a matter of fact, while ten minutes is rather a short time in any case, yet a negative properly washed for that time may last much better than one that is over-washed. Over-washing tends to make the gelatine thin, and this is probably a more serious defect than the presence of a very minute trace of simple hypo.

An over-washed negative may easily become mouldy if left before varnishing. A good preventive is formalin, for if the gelatine has been sterilised by a formalin bath there is little probability of moulds forming in the varnished film. Heat may also serve as a sterilising agent. While formalin is a preventive, the other hardening agent, alum, so often used, may be the introducer of moulds.

An alum solution that has been made some time nearly always contains moulds, even though they may not be visible in the big clots that are so familiar. As a medium for introducing mould into gelatine, few things can be more effective than alum, but this is a risk that most photographers seem to have overlooked. Alum seems to be looked upon as a kind of fetish by some people; but while it does not do many of the things that are put to its credit, it is capable of causing serious trouble, therefore we always look upon it with suspicion. If alum is carefully avoided and negatives are treated instead with formalin and afterwards carefully varnished, any trouble from mould should be next to impossible.

To sum up—the procedure that we consider most certain to produce lasting negatives is: First, to make sure that fixing is complete; next to wash thoroughly, but not too long; then to formalin the negative, rinse and dry it; and, finally, to drive out all moisture from the gelatine by the agency of heat immediately before varnishing. It is difficult to see how a negative finished off with these precautions can possibly deteriorate if kept in ordinary conditions. We may add that the effectiveness of any method of varnishing can be readily tested by applying it to a waste negative, which is then put to soak in water for a few minutes. If the protection is perfect the gelatine should be unaffected.

#### CARBON PRINTING IN WINTER.

THE recent sharp touch of cold weather certainly lends colour to the forecasts of the prophets who have predicted that the approaching winter may be one of unusual severity, and the fact may therefore be expected to give rise, among other forms of distress, to the usual epidemic of articles upon the effect of a diminished temperature on photographic procedure. The effects of cold weather upon the development of plates and the toning and other treatments of prints are probably by this time so well worn a theme that it is unnecessary for us to enlarge upon it, but we may usefully have something to say on the effect of the same causes in the use of carbon tissue, a printing process which is more markedly affected in this way than is silver or platinum, but which nevertheless continues to grow in favour of both amateur and professional.

It should first be mentioned that the process of carbon printing is affected by variations in the temperature largely because the tissue is susceptible to the variations (concomitant with temperature) in the hygroscopic condition of the materials and of the air. Working under conditions which are alike in all else save only temperature, it will be found that exposure has to be much prolonged in order to obtain results similar to those obtained in the summer, quite apart from the difference in the actinic quality of the light. The gelatine of the tissue absorbs water or aqueous solutions more quickly when the temperature is high than when it is low, and consequently if the tissue is immersed, we will say, in  $3\frac{1}{2}$  per cent. solution of potassium bichromate for the time usually adopted—say three minutes at a temperature of 40 to 50 deg. F.—it will absorb much less of it than it would at a temperature of 60 to 70 deg. F. Hence the tissue is less sensitive, and unless this fact is realised and allowed for, errors in the exposure may occur, and the actual cause not be suspected. Particularly may this be the case if, as is the case with many workers of the process, the negatives be marked with the number of tints of the actinometer which previous trials have shown to be right in exposing the prints, which figures were very likely obtained at a different season of the year.

To equalise these altered conditions several methods are

available. First, the temperature of the sensitising solutions may be raised to the normal of 60 to 65 deg. F., and the usual time of immersion continued; or, by increasing the strength of the solution to  $4\frac{1}{2}$  or 5 per cent., a similar allowance may be made; or, lastly, the tissue may be immersed in the solution of the normal strength at the lower temperature for a greater length of time, say five instead of three minutes. Either of these methods will give us approximately tissue of the standard properties as regards speed, etc.

To pass now to a variation in the carbon process which is dependent, not upon the state of the atmosphere, but upon the value of the light, it is not fully realised by many that tissue is relatively much slower in printing in a dull and feeble light than in the strong light of summer, whilst the silver paper used in actinometers is not so influenced. The rapidity of the latter in darkening is proportionately about the same in lights of all strengths, but as an example of the difference in carbon tissue in this respect the following experiment is instructive:—If two carbon prints from the same negative and on similar tissue be printed (by actinometer), the one in bright sunlight and the other in a weak and feeble light, there will be a considerable difference in the depth of the two prints, that exposed to the feeble light being distinctly less printed than the other. It may be necessary in a very dull light to increase the exposure as gauged by the actinometer from, say, four to five or even to six tints, to obtain equal results.

It should be mentioned, also, that the dryness or dampness of the tissue affects its sensitiveness. When containing, as it usually does when dried in dampish weather, a fair amount of moisture, its sensitiveness is enhanced, while if it is abnormally dry, as it may be during very frosty weather, it becomes slow in printing. It is, of course, a well-known fact that when tissue is completely desiccated it becomes comparatively insensitive to light, and to this effect—which may result from severe frosty weather—must be added the other, that the extreme dry-

ness of the tissue may cause it to become so brittle as to make it difficult to handle without its cracking.

The hygroscopic condition of the tissue also affects the well-known property termed "the continuing action of light." If the printing has been done out of doors and the tissue be then brought into a warm apartment moisture will be deposited upon it, and it will thereby be quickly absorbed by the gelatine. Should the print be stored in a warm place for an hour or two before development, it will be found to have increased in depth to a considerable extent, whereas had it been changed into a cold place, it would have escaped the dampening process, and would have suffered little or no change during its subsequent storage. Exposed prints which are freed from moisture may be kept for months without thus "continuing," whereas the action is very rapid in the case of those containing moisture, and at the same time kept in a warm atmosphere.

It is pretty certain that tissue sensitised at home and dried under favourable conditions usually works better after keeping for a day or two. In winter it will be found that to bring tissue in the corresponding best condition it has to be kept for considerably longer: which amounts to the same thing as saying that the keeping properties of the tissue are much better in winter than in summer. In the hot season tissue will usually not keep more than three or four days under ordinary conditions of storage, or for a week or ten days if sensitised in the making. In the winter it remains in good condition for twice or thrice these times.

In conclusion, it may be mentioned that in mounting the exposed tissue on its support for development it will be found that in winter a longer soaking in the cold water is necessary in order to bring it into the proper condition. This will also be the case with the single transfer paper, and if transfer paper of rough surface and thick substance be employed, the soaking in water should be very greatly prolonged, or better still, the water raised to the temperature of 70 to 75 deg. F.

## THE "THAMES" ONE-EXPOSURE COLOUR PLATE.

As many photographers will during the next few weeks probably be making their first trials of colour photography by means of the new "Thames" colour plates, the following notes will perhaps interest them. This record of experience is written from a purely disinterested and practical point of view, the writer simply having bought the plates in the usual manner from a dealer. It is not proposed in the present article to actually make comparisons as to the merits or colour values of the two processes, as the "Thames" is practically a perfectly new manufacture, and I believe that the makers themselves actually admit that further improvements are possible, and are being made as quickly as they can. At present the "Thames" process certainly has its shortcomings, just as the early batches of Autochromes had their own drawbacks, such as a great tendency to frill and the presence of black spots in the colour screen, both of which were freely admitted by Messrs. Lumière at the time, and have since been removed from their wonderful product.

### A Separate Screen-Plate.

In the "Thames" plate the old theory of all one-plate colour processes is adopted, that is to say that the three primary colours, blue-violet, orange, and green, are distributed in their correct proportions upon a glass plate through which the photograph is taken, through which glass the finished results must also be viewed. But whereas Messrs. Lumière spread their

colours quite indiscriminately over the plate and in no regular order, the Thames Plate Co. apply theirs in a perfectly geometrical pattern. This distribution of the colours, and also the fact that an Autochrome plate consists of one piece of glass only, whilst a "Thames" consists of two glasses, one the colour screen and the other the sensitive plate, are the two chief differences between the two processes. The purchase of a box of Autochromes gives us four plates, each plate consisting of a piece of glass coated, first, with the starch colour grains, and directly on top of this with the photographic emulsion. In the case of the "Thames" plates we obtain two separate boxes, one containing two pieces of glass coated with the colour (the colour screens), and the other containing four colour sensitive gelatine dry plates.

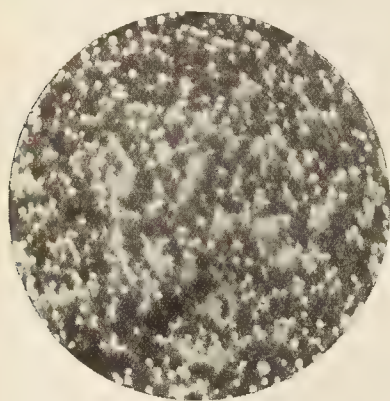
To use the plates, we first place one of the colour-screens in the dark slide, glass side towards the lens, and then place one of the dry plates in contact, film to film, with the colour screen, finally placing a piece of black card on top of the dry plate. The exposure is then made, using a special colour filter just as in the Autochrome process. The dry plate is then developed, reversed, and finished in the ordinary way, and, of course, during all the processes looks just like an ordinary monochrome plate. When perfectly dry, it is again placed in register with the original colour-screen, when all the colours of the object photographed will be rendered. The correct registration is not at all a difficult process. It will



probably be found that at first when the plate and screen are in contact we obtain a curious and very pretty prismatic colouring over the whole plate which alters its pattern from a fine grid to diagonal lines, according to the way we move the plates in relation to each other. The plates are moved in opposite diagonal directions until the whole image is obtained, either as a monochrome, or every one of the colours, either correct or complementary. The very smallest movement in a perfectly upright or perfectly horizontal position will then bring all the colours correct. This registration is a fascinating process, and gives one a valuable lesson in the values of the various colours.

The fact that the colour-screens are separate from our photographic plate means that if by an error of judgment in exposure or development we are not at first successful we waste only the dry plate, and can use the colour-screen again to get a better result.

Another difference in which the "Thames" has an advantage is that the film is nothing more than an ordinary gelatine emulsion, and will stand much rough usage, so that no more than the usual care need be taken. Again, being a thicker emulsion,



Autochrome.

"Thames" allows of more latitude both in exposure and finishing.

#### Speed and Structure of the "Thames" Plate.

The speed of a "Thames" plate is stated to be much faster than the Autochrome, the makers giving it as H. and D. 12 when the compensating filter is in position. In practice I find that a subject requiring four minutes in "Autochrome" requires one minute in "Thames."

The difference in the actual size of the grains of an Autochrome and the dots of a "Thames" is very great. In actual fact under a microscope, I find that there are just about 12 red "Thames" dots to a linear one-eighth inch; this gives 19,200 dots per square inch. Squaring this, we thus find 6,400 dots per square inch. As there are exactly the same number of green as of red dots, we then find there are 12,800 dots, red and green, per square inch. The violet interspaces, though not actually the same shape or size as the red and green dots, must be of the same area, so, if we consider them also 6,400, we get a total number of 19,200 "Thames" dots per square inch.

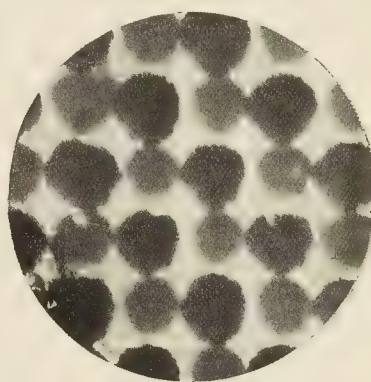
Now, by placing a "Thames" plate in contact with an Autochrome under a powerful microscope, the comparatively large dots of the "Thames" will allow the smaller grains of the Autochrome to pass the light through. That is to say that, through the red dot of the "Thames" we shall see only the red grains of the "Autochrome," and in actual count I find an average of 27 "Auto-

chrome" grains of each colour to each "Thames" dot. Thus we estimate that the total number of red, blue, and green grains upon an "Autochrome" is 1,536,000, compared with 19,200 dots on a "Thames"; or, in other words, the "Thames" plate is eighty times coarser than the "Autochrome."

One would imagine from this that a "Thames" plate would look very coarse, but in actual work it does not. It looks just about the same as a half-tone picture such as we see in illustrations in the press. For lantern work "Thames" plates are not so satisfactory, as upon the screen the enlarged grain does show.

The photographic part of the working of a "Thames" is very much the same as for "Autochromes." The plate is taken from the slide in perfect darkness, and developed for three minutes in a two-solution developer consisting of hydroquinone and caustic soda, after which it is washed for one minute in water, and placed for one minute in a 10 per cent. solution of ammonium persulphate, and then again washed. This ammonium persulphate bath must be used fresh, otherwise the plate will fog and be quite spoilt afterwards.

The plate is then placed in an acid permanganate bath, and



[Thames, same magnification.]

we can open the window while the permanganate reverses the image, just as we do for Autochromes.

#### Reversal and Redevelopment.

The reversal takes about four minutes. This time is longer than the one minute usually recommended for "Autochromes" on account of the extra thickness of the emulsion. The plate is again well washed for four or five minutes, to remove the permanganate stain, and placed in an amidol solution to re-develop. We do not re-develop for a fixed time, as for "Autochromes," but just until the positive image looks dense enough, bearing in mind that the next operation, "fixing," will lessen the density considerably. There is no intensification for the "Thames" as there is for "Autochromes." The plate is washed, and fixed in an ordinary hypo solution. Whereas in an "Autochrome" there seems very little silver left in the plate by the time we reach this stage, yet the "Thames" will look just about like an ordinary plate with a decidedly creamy appearance, which takes about five or seven minutes to clear in the hypo. The plate is well washed, as usual for ordinary plates, and put up to dry. Drying may be expedited by giving the plate about five minutes in a bath of pure methylated spirits, after which it may be dried by gentle heat. We can then proceed with the registration and binding of the plate and colour-screen in the manner I have described.

Just a few words in conclusion as to the results I have obtained. The greatest fault at present seems to be that the makers are not quite perfect in the manufacture of the very delicately made screens. These screens are not yet perfectly

evenly coated, some I have had having a tendency to too much red, and some to too much blue. In one respect this does not matter so much, as, if we find that our finished results when bound with one of the bluish-coloured screens is rather too blue, we can simply use the redder screen, and this will to a great extent correct our colours. As the results are rather more dense than Autochromes, they appear much better when viewed by a strong artificial light, and also, as there seems to be usually not quite enough yellow, this artificial light should be a yellow light, such as incandescent gas, as it will just add sufficient yellow to make what are probably by daylight "blue-greens" into the correct greens.

When one considers the microscopic size of even the coats of the "Thames," one cannot be surprised that the maker find it difficult to obtain perfectly correct screens at present, but no doubt as time goes on and they are able to improve the method of manufacture they will correct this. The "Thames" is certainly an exceedingly interesting process, and the results personally give me much pleasure. Those who give it a trial, even if they do not get results quite so true as "Autochromes" will, I think, not regret the small expense they have incurred and will be interested to make personal tests between the two first direct colour processes which have ever reached the commercial stage.

H. ESSENHUGH CORKE.

## FIXING P.O.P. PRINTS BEFORE TONING IN THE COMBINED BATH.

[The fixation of prints prior to toning has frequently been advised, is theoretically an advisable course, and is, moreover, one which we believe is used in commercial work with success and economy. The following article, from Eder's "Jahrbuch," contains the recommendations of Professor Namias for working the methods.—Eds. "B.J."]

THE use of the combined bath, as it is ordinarily practised, frequently leads to more or less rapid alteration of the prints, and not infrequently to stained or yellowed prints. The latter defect is particularly marked in the case of baths which have been much in use. In all combined baths, which contain both lead and gold salts, the much admired black tone can be obtained, and the production of this tone is ascribed to the presence of the lead salts. A series of experiments have been made by the author as to the conditions which must prevail in order to obtain the best and most permanent results with the combined bath. The result has been to show that regularly good tones are obtained with combined baths, but that still more permanent results are produced if the prints are first fixed before going into the combined bath. This process avoids the majority of the evils which attach to the use of the combined bath pure and simple; and, though it may be urged against such a method that it destroys one of the chief advantages of the combined bath, namely, its simplicity in use, yet the difference is more apparent than real. The author finds that the fixing bath containing boric acid, worked out by him some years ago for the fixation of plates, is very suitable for this particular purpose, since the prints need only be drained from it, and may then be transferred direct into the combined bath without washing.

A suitable strength of bath is 30 to 40 per cent. This has no pronounced weakening effect upon the image of a good P.O.P. print, if used for the time 3 to 4 minutes, which is fully sufficient for the fixing process, or, rather, it has no greater effect upon the print than has the use of the combined bath in the ordinary way. The fixing bath contains 5 to 6 per cent. of boric acid, and it may be employed for the fixation of P.O.P. prints irrespective of the fact that it may previously have been in use for plates or bromide papers, though it should be free from all colour, a change which takes place in a boric acid fixing bath only after a very considerable time. A working formula for the bath will therefore be as follows:—

Hypo .....	6 ozs.
Boric acid .....	1 oz.
Water to .....	20 ozs.

The combined bath, it must not be forgotten, alters in its behaviour after use. In a new bath any sulphurising action is entirely due to the lead hyposulphite in the bath, which compound deposits most readily upon an image containing sulphide of lead. In an old bath there is present, in addition to the lead hyposulphite, silver hyposulphite, the quantity of which gradually increases with the use of the bath. The silver hyposulphite is a compound most prejudicial to the prints, inasmuch as active sulphur toning may occur, not only through the agency of the

lead sulphide, but chiefly through that of the silver sulphide. This produces a distinct liability to change in prints made on printing-out paper as distinguished from those on development paper.

Yet among both professional and amateur photographers is not uncommon to find combined baths being employed, the score of economy, which no longer possess the necessary speed of fixation, since they contain too much silver hyposulphite. In such conditions the print may show signs of alteration immediately after drying, inasmuch as there is not sufficient sodium hyposulphite present to remove the silver hyposulphite in the paper, and it is not too much to say that these are the conditions under which the combined bath is very often employed. In the case of prints which have been previously fixed the toning takes place somewhat more slowly in the combined bath, but without any disturbing action whatever. The bath works with great regularity, and it is only necessary to add a small quantity of gold chloride solution from time to time in order to obtain a full toning action. The silver which finds its way into the bath is so small in quantity that it does not begin to affect the action of the bath until after the toning of several hundred prints, whilst, in the case of the ordinary procedure, its effect is noticeable after a few dozen prints have been toned. For this reason the bath keeps much better, does not darken as when employed in the usual way, and is not quickly exhausted of its gold.

The writer has found that a print treated in the combined bath after previous fixing, and exposed to air and sunlight for a long time, did not show the slightest alteration, whilst a print toned in a combined bath containing an equal proportion of gold and otherwise treated similarly speedily faded. It was also noticed that a print previously fixed and then treated in a bath of hypo and lead salt only was equally permanent, although the tone was not so good. Further, the above method in no way affects the production of the regular black tone, which is the reason of the popularity of the combined bath among amateur workers, whilst it is, of course, far superior to the methods of separate toning and fixing, where the slightest trace of hypo in the toning bath gives rise to spots and stains.

Finally, it should be remarked that separate toning and fixing is more expensive, as the black tones must be obtained solely with gold. The foregoing results, therefore, should encourage photographers to employ this modified procedure of toning prints on printing-out paper, as apart from the production of more permanent results, it has the advantage of economy in gold, and the fixing process is quite without effect upon the treatment in the combined bath, so that the toning process can be stopped at any desired stage.

R. NAMIAS.

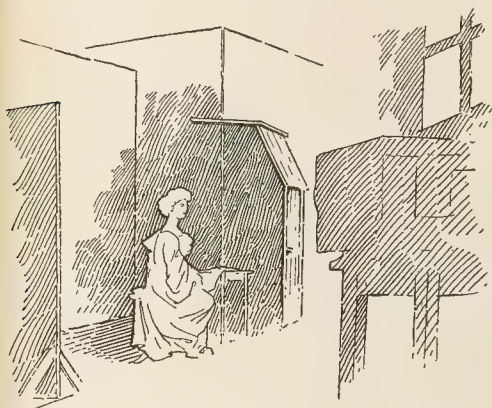


## DUDLEY HOYT'S METHOD OF STUDIO-LIGHTING.

[Mr. Dudley Hoyt, of Rochester, New York State, being one of the most accomplished and individual photographers, particularly of women sitters, it is interesting to find him in the current issue of "Photo-Era" explaining the principles which he has found most advisable in the portraiture of the richly dressed ladies who form the greater proportion of his patrons. The illustration which appears with this article is redrawn from a half-tone reproduction showing the actual arrangement of the studio.—Eds. "B.J."]

As I told Papa Cramer at the Detroit Convention, the plate is the daredevil which is backed by less confidence than any other medium in the practice of photography yet is, at the same time, a scientifically prepared product subject to our command. The fact is, I am inclined to believe that the photographer expects too much from his plate, and that he is not altogether in sympathy with its limitations, nor friendly towards its possibilities, judging from the many questions the studio and chemical demonstrations at Detroit called forth. The one thing the National Association did accomplish, as never before, was to encourage the photographer to ask questions which, when well answered, led back to the making of the negative.

In portraiture and its technical advancement there is a condition which we will have to face seriously in the near future—



that is, to keep abreast with the progress made by the manufacturers of colour-sensitive plates. In this way the judging of the relative values of light and shade will not be based entirely upon the different degrees of intensity of the direct or reflected light, but rather upon the chemical value of the separated colour of white light, composed of blue, green, and red, by which the best plates are tested and corrected. For instance, a red-blind plate, one sensitive to the yellow and green, will record in the negative a green of a very much lighter colour,

which will bring the yellow and green into very close relation in regard to tonal value, but entirely out of harmony with the lighting one saw and expected to obtain in the negative.

To light the model is not a difficult undertaking, provided one have a properly corrected plate to record the colour-values. If we bring to mind how intensely yellow the face of our model will appear when located some distance from the light, we realise the importance of the blue or violet in direct, white light. Bearing this in mind, we place the model in the direct light, the volume of which matters but little so long as there is a good blaze of direct, white light. The effect of the light is strong and contrasty, but can be reduced by the aid of screens to intercept a portion and to break the direction of the light. In changing the direction of the light and the reflecting of another portion, the white light has changed colour on different parts of the model—in other words, the light has separated into blue, green and red, and the tonal values are particularly flat and creamy.

We have noted in colour-photography that the absence of blue from white light reflects yellow formed by the union of red and green. With the use of this combination in the making of our negatives one can readily see that a negative with all the necessary brilliancy, fullness, and delicacy of detail, and of unusual quality, can be produced from an image which is apparently flat, but richly modelled. Its colour and vigour are dependent only upon the amount of white or direct light allowed to reach the portions of the figure which are most important.

This arrangement offers many advantages, especially when the photographer has but a small amount of light at his command. The light may then be thrown back and forth with screens, while the model takes on a very luminous tone of yellow, which is instantly relieved and modelled by a ray of direct light projected at the proper angle so as to touch up and bring into relief those portions of the model which need accentuating.

In thus touching upon the values of light and shade, I hope to have covered, in a brief way, a point which has been suggested by questions from many workers as to how they can best handle local conditions. As most photographers have some direct source of light, it remains for them to take into consideration the value of its proper distribution, and, after a series of experiments, they will find a key which best suits their requirements.

DUDLEY HOYT.

## ON OBTAINING PRINTS OF REGULAR BLACK TONE ON GASLIGHT PAPER.

[Avoidance of the deterioration of colour in gaslight prints is the subject of the following contribution to "Eder's Jahrbuch," by Dr. G. Hauberrisser, who finds a solution of sodium tribasic phosphate to be effective in preventing the

The so-called gaslight papers, which have during the past few years obtained such vogue that they have almost displaced bromide paper for contact work, possess the drawback that in making a number it is usually found that the pure black tone obtained on the first print or two gradually deteriorates as further paper is developed in the same solution. The tone becomes brownish or greenish, and more un-

satisfactory in this respect the greater number of prints which are treated in the same solution. In order to arrive at a working method for the production of black tones without the necessity of frequently renewing the developer, I have undertaken a series of experiments, first of all with the object of ascertaining the cause of the defect, and secondly, of discovering means of remedying it. All the experiments described below

were made with Tula gaslight paper from one and the same batch of emulsion, and all the prints were made from the same negative.

**Experiment A.**—In order to ascertain the effect of potassium bromide upon a fresh unused developer, six Tula prints were developed with the edinol "Special" developer, prepared by diluting 10 ccs. of this latter solution to 90 ccs. with water, and adding 10 ccs. 30 per cent. potassium carbonate solution, making 100 ccs. in all. This was mixed fresh for each Tula print, and was modified for each succeeding print by the addition of 10 per cent. potassium bromide solution to the amounts of 4, 8, 16, 32, and 64 drops, each of which restrained developers was employed, as also was one containing no bromide at all. This latter developer, and that containing only 4 drops of the bromide solution, produced a pure black, but with further addition of bromide a distinct greenish tone was obtained.

**Experiment B.**—Employing the above edinol developer (without bromide) 25 prints, 9 x 12 cm., on Tula paper were developed in one and the same quantity of solution, one after the other, i.e., about 25 quarter-plate prints in  $\frac{3}{4}$  oz. developer. The colour of the first four was pure black, but succeeding prints gradually showed the disagreeable greenish colour.

**Experiment C.**—This was a repetition of A, using, however, metol-hydroquinone developer; the results obtained were similar to those described in A.

**Experiment D** was a repetition of B, using metol-hydroquinone developer, and was attended with the same result.

On comparing the results of the different series of tests it was seen that in order to obtain pure black tones, fresh developer must be mixed up after four prints have been done, although, so far as concerns the detail in the prints, and disregarding the precise colour of the silver image, 25 and more prints may be successfully developed in this quantity of solution. The cause for the unpleasant tone is no doubt the introduction into the developer of potassium bromide, as shown by the A series of experiments. It was ascertained by analysis that the quantities of potassium bromide in an edinol "Special" developer in which 25 Tula prints of 9 x 12 cm. size had been developed, and in a metol-hydroquinone developer which had been used to develop the same number of prints, amounted respectively to .21 and .19 gm. As 64 drops of 10 per cent. potassium bromide solution amounts to approximately 5.5 ccs.—that is to say, to .55 of potassium bromide—and as, further, the greenish colour obtained in experiment A6 with 64 drops of potassium bromide was far less objectionable in spite of the threefold proportion of bromide than that in the last prints of experiments C and D, but about comparable with the tenth print (equivalent to a proportion of potassium bromide of about .08 gm.), it appears that the proportion of potassium bromide is not the chief cause of the defect in the tone. Further, as the strength of the developer is only very little weakened by its use for the 25 prints, it seems likely that by suitable addition to the developer a large number of prints of pure black tone should be developed.

After trials of a variety of substances I found that success was obtained in this direction by using tribasic sodium phosphate. Mixing up a 10 per cent. solution of this compound, 5 drops were added to the developer before the development of a fresh print. It was found quite practicable to develop 25 prints on the Tula or other gaslight paper with 10 ccs. of concentrated edinol solution. The addition of the tribasic sodium phosphate has no other effect than improving the tone of the prints, the time of development remaining practically the same. The time which a print takes to come up may be taken as a pretty good criterion of the necessity of adding the tribasic sodium phosphate. Assuming that exposure has been correct, and that the print develops up quickly, the addition of the phosphate may be omitted for the next print, but should the print come up slowly

the added quantity of phosphate solution may be increased 10 drops. It is important that pure tribasic sodium phosphate should be used, ordinary sodium hydrogen phosphate the chemists' shops being without the above specific action. Obviously, the above addition of sodium tribasic phosphate can be employed with more or less success in the case of other formulae employed for the development of gaslight papers. General directions cannot, however, be given, as the addition of three drops of the phosphate solution is sufficient in the case of some developers, whilst in others a much larger addition is necessary.

GEORG HAUBERRISER.

## Photo-Mechanical Notes.

### A Proved Formula for Zinc Enamel.

A reader of the "Photo-Engraving Notes" of the "Inland Printer" sends to Mr. S. H. Horgan, editor of that column, a formula for zinc enamel half-tone:—

After scoring these formulae one ought in decency offer something in their place, so I beg to offer one that has been working successfully for the past five years:—

Le Page's glue .....	6 oz.
Water .....	16 oz.
Bichromate of ammonia .....	240 grs.
Citrate of iron and ammonia .....	30 grs.

This solution when fresh will print in summer sunlight in 5 minutes. When aged (it never gets too old if not allowed to evaporate until too thick), in two and a half to three minutes. The older becomes the better it will be. You can't say the same of an enamel formula. "Can" glue is very good, but owing to the whitening it will often give trouble if not first diluted and allowed to settle until perfectly clear, which may take three or four weeks. Dilute with twice its bulk of water. If process glue is used, cut down exposure time from one-quarter to one-third. It is recommended to use a hardener for this formula after developing—either sunlight or a solution of chromic acid and water. Kansas sunlight is such an inexpensive article that we set the plate in the sun, where it both dries and hardens. Burn the enamel to a deep chocolate and dash into water to restore some of the temper. Remember that water is a good thing to keep away from in enamel prints, so dry your plate promptly after washing, etc. Follow these instructions, and if you were bothered with zinc-enamel troubles you will say "Thank you." Use this enamel on copper, with two ounces more water, and don't trouble to harden it unless you wish.

## Exhibitions.

### HACKNEY PHOTOGRAPHIC SOCIETY.

By an oversight, for which we have only ourselves to blame, the four days during which the Hackney Photographic Society Exhibition remained open were allowed to pass before we realised that we had failed in the duty due to this active society of reviewing the collection of pictorial work which it brings together as the result of the work of its own members, and through its appeal to photographers generally. Though the Hackney Society is almost unique in the strength of its members' classes it would none the less be unjust on that account to dismiss the show summarily as a semi-private exhibition, since it is supported by very good outside contributions. The society undertakes to collect pictures from the Royal and the Salon, and its display of the frame in the King's Hall of the Hackney Baths is very excellently done. This year the judge was Mr. A. H. Blake, who made the following awards:—

#### MEMBERS' CLASSES.

Best picture in Classes A to D: Gold medal, No. 51, Walter Self. A: Silver medal, No. 24, Wm. Rawlings; silver medal, No. 36, F. I.



Roofe; bronze medal, No. 66, W. A. I. Hensler; bronze medal, No. 84, G. H. Capper; highly commended, No. 57A, Walter Selfe; highly commended, No. 63, W. A. I. Hensler. B: Bronze plaque, No. 106, A. J. Hyder; bronze plaque, No. 144, G. H. Pearce; bronze plaque, No. 161, W. H. Witts; highly commended, No. 104, E. J. Hunt; highly commended, No. 126, E. G. Price; highly commended, No. 139, J. Cox. C: Bronze statuette, No. 165, G. B. Heath; bronze statuette, No. 223, A. Akerman; highly commended, No. 195, L. Raynor; highly commended, No. 204, F. C. Williams; highly commended, No. 220, C. J. Powell. D: Bronze medal, No. 259, A. J. Linford; bronze medal, No. 261, F. E. Roofe. E: Silver medal, W. H. Witts; bronze medal, W. A. I. Hensler; highly commended, Walter Selfe; highly commended, Wm. Rawlings.

## OPEN CLASSES.

Best picture in Classes F to H: Gold medal, No. 326, John Hepburn. F: Silver medal, No. 388, C. Wille; bronze medal, No. 271, Oscar Hardee; bronze medal, No. 395c, W. Chater Lea; highly commended, No. 288, C. A. Morgan; highly commended, No. 344, A. F. Hirschfield; highly commended, No. 348, W. A. I. Hensler. G: Bronze statuette, No. 428, Grafton Goatly; bronze statuette, No. 434, H. W. Fitch. H: Bronze medal, No. 463, Miss E. L. Marillier; bronze medal, No. 468, A. Taylor; highly commended, No. 477, G. C. Laws. I: Silver medal, W. A. I. Hensler; bronze medal, Wm. Rawlings; highly commended, E. Burton.

## FORTHCOMING EXHIBITIONS.

November 20.—Redhill and District Camera Club. Sec., J. Paterson, Ness House, Redhill.  
November 23 to 26.—Lancaster Photographic Society. Sec., J. Holt, 11, Fern Bank, Lancaster.  
December 9 to 12.—Bolton Amateur Photographic Society. Secs., A. N. H. Wylde and J. Bailey, 25, Croston Street, Bolton.  
December, 1908, to January, 1909.—Kiew International Photographic. Sec., S. T. Horovitz, Technical Society, Kreshtchatik, 10, Kiew, Russia.

1909.

January 1 to 9.—Scottish National Photographic Salon. Entries close December 7. Sec., Robert Telfer, 138, Glasgow Road, Wishaw.  
January 6 to 27.—Northern Photographic (Manchester). Entries close December 11, 1908. Sec., S. L. Coulthurst, Broad Oak Road, Worsley, Manchester.  
February 13 to March 13.—South London Photographic Society. Sec., H. Creighton Beckett, 44, Edith Road, Peckham, S.E.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for Patents have been received between November 2 and 7:—

**CAMERAS.**—No. 23,415. Improvements in photographic cameras. John Appleton and Taylor, Taylor and Hobson, Ltd., Stoughton Street Works, Leicester.

**PRINTING APPARATUS.**—No. 23,684. Improvements relating to photographic printing apparatus. William Edward Lake, 7, Southampton Buildings, London, for William Carl Huebner and George Bleistein, United States.

**PRINTING APPARATUS.**—No. 23,690. Improvements relating to photographic printing apparatus. William Edward Lake, 7, Southampton Buildings, London, for William Carl Huebner and George Bleistein, United States.

**PRINTING APPARATUS.**—No. 23,701. Improvements relating to photographic printing apparatus. William Edward Lake,

7, Southampton Buildings, London, for William Carl Huebner and George Bleistein, United States.

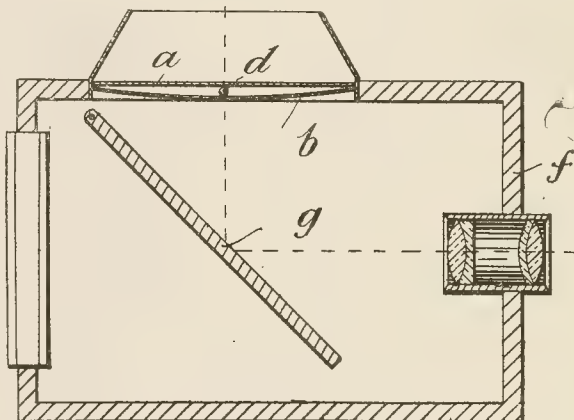
**PRINTING APPARATUS.**—No. 23,717. Improvements relating to photographic printing apparatus. William Edward Lake, 7, Southampton Buildings, London, for William Carl Huebner and George Bleistein, United States.

**CINEMATOGRAPHS.**—No. 23,811. New or improved means for guiding the films in cinematographic apparatus. Alfred Duskes and Duskes, Kinematographen und Film-Fabriken, G.m.b.H., 31, Bedford Street, Strand, London.

## COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

**LEVEL FOR REFLEX CAMERA.**—No. 13,536. 1908. In place of a spirit level the invention provides for the use of a small globe or globule (e.g., of mercury) which is contained in a concave glass attached to the under-side of a horizontal focussing-screen. In carrying the invention into practical effect the upper surface of such lens is slightly concave to contain a ball or globule, preferably of mercury, and has a transparent covering of glass, or where the view-finder is provided with a ground-glass focussing-screen, a slightly concave transparent glass is arranged beneath the same, allowing sufficient space between the glass and focussing-screen to contain a small ball or mercury globule. In either arrangement the ball or globule will naturally rest at the lowest point of the concavity, when the camera is level and the ball or



globe indicating the position of camera, is observed in the ordinary field of view.

Where an upper horizontal ground-glass focussing-screen is employed, as in the case of focal-plane cameras for example, a slightly concave transparent glass is arranged beneath the same and a ball or mercury globule contained between them, so as to appear in the field of view and indicate the level, while one of the glasses may be provided with cross lines or wire to indicate the central position. In the figure, *a* is the focussing-screen, *b* the concave glass, and *d* the globe of mercury or other metal. Charles Percival Truscott, 40, Glisson Road, Cambridge.

**FOLDING REFLEX CAMERA.**—No. 15,951. 1908. The invention consists of a reflex camera in which the mirror and ground-glass are hinged to the back frame of the camera, the lens-board being connected to the ground-glass frame-work by means of an intermediate member. This construction renders it possible when folding the camera to displace the lens panel from the hinge-point of the ground-glass carrier, and to move it towards this hinge-point or towards the back frame of the carrier when erecting the camera, a movement which allows of selection in the matter of focal length of lens.

The displacement of the ground-glass from the optical axis

beyond the point of rotation of the mirror preferably takes place in such manner that the ground-glass forms the cover of a bottomless box hinged to the back frame, with its bottom aperture closed and made light-proof by the mirror. In this manner a simple element of the construction prevents access of light through the ground-glass to the interior of the camera while the camera is in the working position.

In the drawing:—The lens-board is marked 2; the supporting struts, 3; the light-tight connection of lens-board to camera casing, 4; the focussing hood, 5; the ground-glass, 6; cover plates, 7 and 9; and closing flap on the latter, 10. The lens-board 2 is pivotally connected to the back frame by a wall plate 11 and ground-glass carrier 12 with hinge-pin 13, as well as by the struts 3. The adjusting mirror rotatable about the hinge-pin 13 of the ground glass carrier is marked 14. A helical spring 15 tends to move the mirror into its position of rest in which it abuts against the lower aperture of the ground-glass carrier, which forms a box-like casing open at the bottom. On the axle of the adjusting mirror 14 there is an arm 16 serving as an abutment adapted to co-act with a locking projection 17. The locking projection 17 is mounted on a resilient metal piece 18

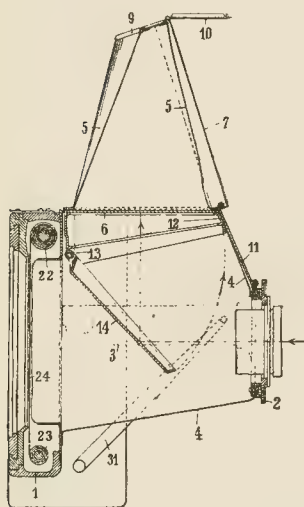


Fig. 1.

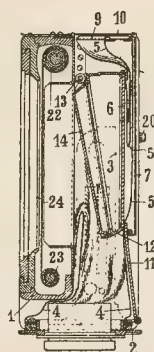


Fig. 2.

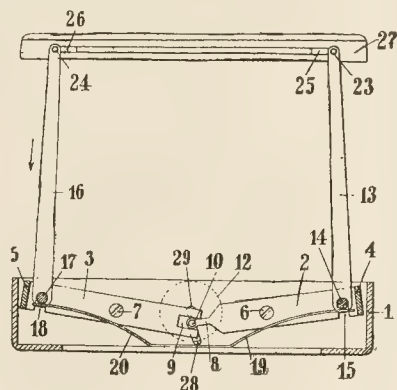
which is fastened to the casing and can be so bent from the casing wall by a bolt 19 having an inclined plane and press button 20, that the projection 17 releases the arm 16. A spring 21 tends to hold the bolt 19 permanently in its position of rest. 22 and 23 indicate the winding rollers of a blind shutter 24, which can be held in the wound position by a pawl 26 engaging a ratchet wheel 25. The connection of the ratchet wheel 25 to the winding roller of the curtain (in the construction shown in Fig. 1 the upper winding roller) is made by toothed wheels 27, 28 of which the latter is supposed to be mounted on the axle of winding roller 22. 29 indicates an eccentric mounted on the axle of the adjusting mirror 14 and adapted to co-act with the pawl 26. 30 is a spring which tends to hold the pawl 26 in permanent engagement with the ratchet wheel 25. 31 indicates two lateral rods, with joint marked at 32, connecting the camera casing to the arms 3.

The manner of using the camera, and its action, are as follows:—

Let it be assumed the camera is in the working position shown in Fig. 1. In this case the image projected by the lens mounted in the lens board is reflected by the mirror 14 on to the ground-glass 6, and can be seen thereon through the view holes 8, so that the adjustment of the lens to the respective focus can be effected in the known manner. If after the adjustment a picture is to be taken, the adjusting mirror is released by pressure on

the button 20, and the slide 19 pushes back the resilient plate 18 carrying the projection 17 so that the arm 16 can move past the projection. As soon as the arm 16 is released the mirror 14 is rotated upwards by the action of the spring 15 so that it enters from below the box-like ground-glass carrier 12 and makes a light-proof closure of the interior of the camera. Together with the upward movement of the mirror 14 there takes place a rotation of the eccentric 29 on the mirror axle, so that at the moment at which the mirror reaches its upper position the release of the pawl 26 from the teeth of the ratchet wheel 25 is effected. A spring-pull acting in the known manner on the blind 24 then causes the shutter to act, since the toothed wheels 27, 28 no longer prevent rotation of the blind roller 22, the pawl 26 being disengaged. By winding up the blind again any desired number of pictures can be taken. When the camera is to be folded the rods 31 are bent, and the arms 3 connecting the lens board 2 with the camera casing are thus no longer prevented from rotating, and are rotated downwards; the halves of the rods 31, connected by the joint 32, are thus folded together, and the lens board is laid against the under-side of the camera casing. During this folding of the arms 31 the under-part of the bellows 4 is folded as shown in fig. 2. Together with the folding of the arms 3 with the lens board 2 there takes place a folding of the box-like ground-glass carrier 12, and of the camera wall 11 connecting the same with the lens board, these parts being moved into the position shown in fig. 2. The bellows parts 4 and 5 are laid together in the manner shown in fig. 2, and the cover 7 and folded cover 10 secure the parts from outside, so that the camera parts substantially appear as enclosed in a simple casing. By repeating the operations in the reversed order the camera can be brought back to its working condition. Optische Anstalt C. P. Goerz A. G., 44-46, Rheinstrasse, Friedenau, Berlin.

**FOLDING POCKET-CAMERAS.**—No. 17,624. 1908. This invention consists in improvements in photographic cameras of which the front and back frame are connected to one another by rigid stays. The invention relates to an improved focussing device by which the lens is adjusted from the film or plate carrier in accordance with the distance of the object to be photographed. For this purpose the joints of the stays in the camera body are arranged in bearing pieces movable in the direction of the optical axis, so that by displacement of these bearing pieces which remain permanently in the camera body the distance



between the lens and the plate carrier can be adjusted according to the distance at the time being of the object to be photographed.

The camera body is indicated by 1. In it are two lever pairs, 2 2 and 3 3, of which the first pair are connected together by a connecting piece 4, and the latter pair by a connecting piece 5, the pairs being rotatable on pivots 6 6 and 7 7. The levers of the lever pair, 2 2, extend with their contracted ends, 8 8, in recesses 9 9, of the lever pair 3 3, so that a turning movement of the one pair causes corresponding rotation of the



other pair. The reduced end of one of the levers, 2, carries a pin, 10, which projects through the wall of the box and engages in a spiral groove, 11, of the focussing disc, 12, which is seated on the outside of the box. To the lever pair 2 2 a pair of stays, 13 13, is attached by means of a spindle, 14, which rests in recesses of the lever pair, 2.

Opposite the pair of stays 13 is a pair of stays 16 which are seated on a spindle 17 which lies in a recess 18 of the lever pair 3.

Springs, 19 20, are arranged which tend to push the spindles 14 and 17 into the recesses 15 and 18. Coil springs 21 and 22 tend to hold the stays 13 and 16 in the position shown in the figure.

The stay pairs 13 and 16 engage by means of pins 23 24 in slots 25 and 26 of the back or plate-carrier 27 of the camera. 28 is a slot in the box wall in which the pin 10 extending through the wall is laterally movable, the slot being covered by the focussing disc rotatable about the pivot 29.

The action of the apparatus is as follows:—Let it be assumed that the camera is in its working position shown in the figure, and that it is desired to adjust the focus to a certain distance. For this purpose the disc 12 is rotated, causing the pin 10 to move in the groove 11 and rotate the two lower lever pairs 2 2, 3 3 about the pivots 6 6 and 7 7. This rotation of the lever pairs produces displacement of the spindles 14 and 17, since the said spindles, being permanently held by the springs 19 and 20 in abutting position in the recesses 15 and 18, must take part in all the movements of the lever pairs 2 2, 3 3. The rotation of the lever pairs 2 2, 3 3 thus produces longitudinal displacement of the stay pairs 13 and 16, and moves the plate frame 27 to or from the camera box which carries the lens, not shown in drawing. Optische Anstalt C. P. Goerz A.G., 44-46, Rheinstrasse, Friedenau, Berlin.

**FOLDING POCKET CAMERAS**, No. 550, 1908.—The invention relates to an improved pocket camera which, while provided with all the necessary attachments, is very compact and free from projecting parts and can be readily taken to pieces.

The frame of the camera is formed of two tubes, encased in wooden blocks, and metal sides, clamped together by metal plates secured on the ends of the tubes, thus forming a rectangular frame with a tube and wooden block at each end and a rectangular chamber between.

The bellows which carries the lens board is so formed that when the lens is closed down into the camera body it is turned inside out and encloses the lens. The lens when extended is supported by hinged doors or flaps which slide on their hinges into positions in which they are held open. The flaps are provided with inclined and longitudinal slots and the position of the lens is adjusted by pins working within the slots. The shutter is contained in the two tubes forming the ends of the camera and the speed of the shutter is indicated in a special manner by means of a spring finger or pointer engaged by a finger piece which adjusts the tension of the spring on the spring blind roller. The dark slide is fitted in grooves formed by bending the metal side plates or additional plates, and a hinged plate with a flanged edge prevents the dark slide from being withdrawn with the shutter. The slide is held firmly in place by means of a V-shaped spring so fitted that the end of the slide bearing on one arm of the spring presses the other on the back of the slide. Zélie Isabelle Colville, Lightwater, Bagshot, Surrey.

**KINEMATOGRAPH MECHANISM**.—No. 11,968, 1908. The invention relates to mechanism for centring the image on the screen without changing the position of the rotating disc. Arcade Mallet, 15bis, Rue Cauchy, Paris.

## New Trade Names.

**ARMOUR BRAND**.—No. 306,353. Chemical substances used in manufactures, photography, or philosophical research and anti-corrosives, but not including preparations for use in sizing and finishing paper, leather, cotton, wool, silk, and for use in sizing and finishing like goods, and not including any goods of a like kind to these excluded

goods. John E. Williams and Co., 109A, Lower Moss Lane, Manchester, manufacturers. September 22, 1908.

**ARMOUR BRAND**.—No. 306,544. Chemical substances used in manufactures, photography, or philosophical research and anti-corrosives. Griffiths Bros. and Co., 29, Macks Road, Bermondsey, London, paint, colour, and varnish manufacturers. September 30, 1908.

## Analecta.

*Extracts from our weekly and monthly contemporaries.*

### Stereoscopic Lantern Slides.

Mr. A. Lockett, writing in "The Amateur Photographer and Photographic News" of November 17 on the application of the Dixie method of stereoscopy to stereoscopic projection, described the preparation of two stereoscopic pictures on a single lantern plate, one reversed as regards right and left relatively to the other. The pictures are projected by an ordinary lantern, and to view these "the spectator should be provided with a small unframed mirror. Naturally, a surface-silvered one is best, but, contrary to what might be expected, any ordinary mirror of good quality glass can be employed without giving a noticeable double image. A common quality glass, however, is perfectly useless. The mirror is held against the nose in an upright position, pointing towards the central division between the two pictures on the screen. Then, looking at the right-hand picture with the right eye, the mirror is turned slightly until the reflection of the left-hand picture falls over the first. It is quite a simple matter, once it has been tried, to get the two halves of the stereogram to coalesce, so that one-half is seen with the left eye by reflection in the mirror, while the second half is viewed by the right eye direct. The result is that the image on the lantern screen is seen in perfect stereoscopic relief. With good subjects the effect is very beautiful, far surpassing the usual small opaque slide as inspected in the stereoscope."

### Photography for Profit.

Mrs. Marion Whitten, writing in "Photography and Focus" for November 17, on "How a Lady makes her Hobby pay its way," records her experiences. "At the end of the first six months I took a photograph of my eldest boy in his surplice. Everyone praised it, saying what a good postcard it would make. I sent it up to a big postcard firm, and by return of post I had an offer of 15s. for it. That was my grand beginning. From that time I began regularly to sell my prints of children for magazines and postcards. . . . Now after three years' work I can find a ready sale for this class of picture. . . . Thus I feel free to enjoy my love for this work with an easy conscience, although I am the mother of seven children, and could not afford to spend money in this way unless it more than paid for itself. . . . I depend on 'Photography and Focus' and the advice of one or two photographic friends to help me along, and I hope some day to do something worthy of being accepted at the Royal Photographic Society's exhibition."

**A WONDERFUL INVENTION**.—A discovery which, from the account of it in a daily paper, would appear to merit the application of the comprehensive German epithet "Ausgestaltungsfähigkeit," is said to have been made by a Professor Pierucci, of the University of Pisa. He is said to have invented "a new species of paper which is destined to revolutionise the present system of lighting, besides having numerous practical uses in electrical development owing to its remarkable conductive powers. The professor's invention is shortly to be placed on the market in a form which is intended to supersede the mantle hitherto in use in the incandescent system of lighting. The new paper will also be on sale for cartoon and photographic purposes, and for use in filtering and in bacteriological research."

## New Apparatus, &c.

The "Kinora" System of Animated Photography. Supplied by the Kinora Company, Ltd., 21, Red Lion Square, London, W.C.

The "Kinora" system of home and outdoor photography bears the same relation to the ordinary photograph as the living picture on the screen does to the lantern-slide, that is to say, in place of the one portrait of a stiffly posed sitter, it shows the sitter with his or her natural animation, the result of offering to the eye within a short space of time a series of hundreds of consecutive photographs obtained while the sitter chatted with the photographer or followed some pastime or occupation. This result is obtained, not on a screen

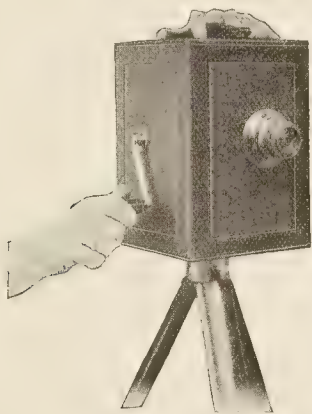


Fig. 1.

arranged in a darkened room, but in a roll of prints which are examined exactly in the manner of looking at an ordinary stereoscope, or may be operated in a larger instrument of the same type, by means of which a number of persons can see it at the same time. The particular project of the Kinora Company which interests us is its offer to photographers to—

(1) Supply the camera and film by which the "living portraits," groups, or incidents may be taken.

(2) Develop the negatives and supply rolls of the prints at a moderate rate.

The camera, as shown in Fig. 1, is not much larger than an

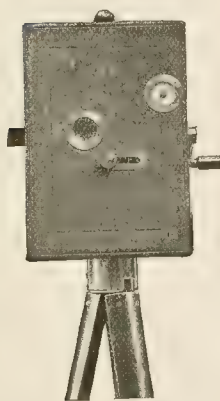


Fig. 2.

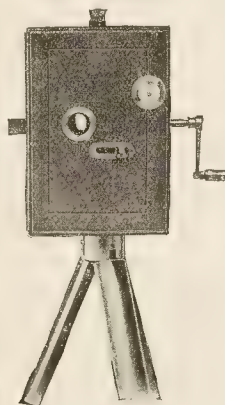


Fig. 3.

ordinary hand camera. Its mechanism provides for the use of a length of film of 42ft. and less, which is loaded into the instrument in full daylight, and is used without perforations along its edges, thus securing a larger picture. By means of a locking lever action, controlled from the back of the camera, as shown in Figs. 2 and 3, the

subject may be actually focussed on the ground glass, a single turn of the lever bringing the film mechanism into the field of the lens. The dial on the back of the camera shows the length of film used, and allows of an exposure being divided into, say, four parts as is frequently convenient when obtaining a film record of the various members of one family. The machine is stopped at any point for the change of sitters. The camera, complete with 3in. focus Ross Homocentric lens, working at  $f/4.8$ , is sold at £15 15s., or without lens £10 10s. Rolls of film, of from 12ft. to 42ft. length, are supplied at from 1s. 6d. to 5s. 3d., that is, about 1½d. per foot.

The development of the negative and the making of one record roll of prints are done at from 1s. 6d. to 4s., so that for the sum of



Fig. 4.

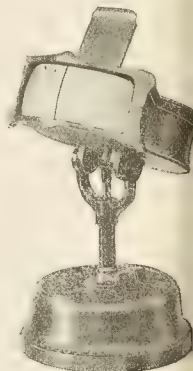


Fig. 5.

from 3s. to 9s. the photographer can obtain an animated record of a scene or sitter without himself doing more than make the exposures.

The record takes the form of a disc of metal, to which are attached the hundreds of prints made from the film negative. A very simple mechanism brings these one by one against the plate or stop, and thus presents the movements of the original with a high degree of realism. The results which we have ourselves seen at the office of the Kinora Company speak highly for the accuracy with which the prints are fitted to the central disc. The viewing mechanism certainly represents a reduction to simplicity beyond which it is

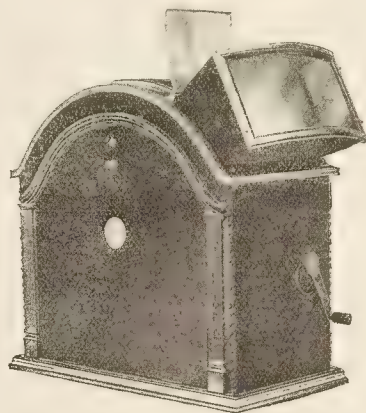


Fig. 6.

difficult to imagine anything further. Fig. 4 shows a simple form of table viewing instrument, costing 30s. It is operated by hand and, as we have said, resembles, in size and appearance, a substantial type of stereoscope. A more elaborate instrument is that shown in the next drawing, in which the print-roll is actuated by clockwork, the instrument being provided with two lenses, which allow of several persons looking into it at one time. In bronze metal, the Kinora costs £4 4s.

A still larger build of instrument is shown in Fig. 6, being made

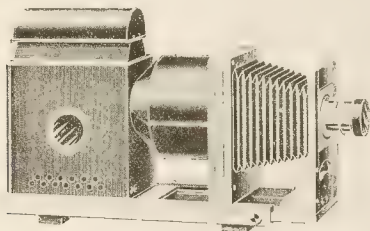


to take pictures  $3 \times 2\frac{1}{2}$ , i.e., enlargement from the ordinary Kinora roll. These are supplied to take 1,000 photographs, and to run continuously by motor, and are chiefly advanced in patterns, somewhat different from that shown in the illustration—for advertising purposes in shop windows, railway stations, etc.

The chief interest in the Kinora system, as it is at present available, is the facility afforded of making and supplying records which can be used by customers in their own homes. The cost to them need not be very great, and yet the photographer should make his profit out of it—he will not have much to do beyond taking the order—obtain a good deal of local advertisement for himself, in introducing such a novel development of the art of the camera. The "Kinora" booklet, to be obtained gratis from the company, at 21, Red Lion Square, will give much information additional to what we have been able to say above as the result of our own observation.

**"Empress" Enlargers.** Made by Houghtons Ltd., 88-89, High Holborn, London, W.C.

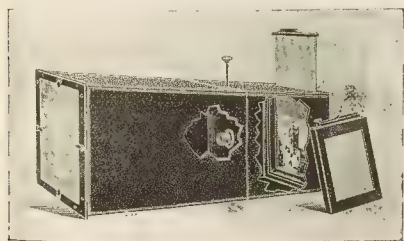
An enlarging apparatus made by Messrs. Houghtons at their own works specially for the amateur worker is made in a variety of patterns, among which the "Empress," now before us, is marketed complete at the low price of £2 12s. 6d., in the quarter-plate size. For this sum the purchaser obtains the apparatus, with 5½ in. condensers, projection lens, and orange cap. The lantern body is of form suitable for incandescent gas burner, the outfit for which (tray, jet, burner, and reflector) is sold at an extra cost of 7s. 9d., but any



other light of moderate power, such as lime, acetylene, or oil, may be used. The enlarger is most strongly made, is fitted with sliding negative carrier, and is certainly very good value for the moderate price charged for it. Messrs. Houghtons' full list of enlarging lanterns and accessories may be recommended for reference by those investing in an outfit. It is sent free.

**The Klito Daylight Lantern Slide Reducing Camera.** Made by Houghtons, Ltd., 88-89, High Holborn, London, W.C.

This new model of the very convenient fixed focus reducing camera possesses the useful feature that the portion carrying the plate is "rotatably attached," as the patent specifications say, to the front, with the result that the line of, say, a house or telegraph post, which in the negative is not parallel with the side of the plate as it should be, can have its divergence from vertical rectitude amended in the



lantern slide. This facility does not in any way increase the size of the appliance, which, in the case of the reducer for quarter-plate negatives, is  $4\frac{1}{2} \times 4\frac{1}{2} \times 13$  inches. The camera is well made in wood throughout, leather-covered and fitted with lens, shutter, and dark slide. We have ourselves tested its correctness of adjustment. It

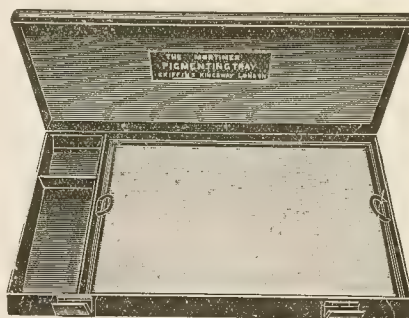
is obtainable to reduce to  $3\frac{1}{2} \times 3\frac{1}{2}$  from quarter,  $5 \times 4$  or half-plate negatives, at the respective prices of 12s. 6d., 13s. 6d., and 15s.

**THE "MASCOT" DRYING LINE.**—For the drying of film negatives and prints Messrs Houghtons Ltd. are supplying a strip of stout holland, complete with a dozen clips, the modest outfit being a useful



device, such as is constantly of service when a few prints or film negatives have to be dried. Boxed in the customary attractive style of the Houghton firm, it is sold at 1s.

**THE MORTIMER PIGMENTING TRAY.**—Under this name, Messrs. John J. Griffin and Sons, Ltd., have placed on the market an accessory for the use of workers in the "oil" and "bromoil" processes. The essential part of the apparatus is the compartment in the tray, which can be filled with sheets of wet blotting-paper, over which



a piece of fine linen supported on a metal frame can be laid. The oil print laid in turn on this latter is thus kept in a moist state during the pigmenting process, without, however, acquiring odd fragments of blotting paper. The tray allows of this useful dodge being put most conveniently into practice, and is sold by Messrs. Griffin of a size to accommodate prints up to  $15 \times 12$  in.

## New Materials, &c.

**The "Barnet" Studio Extra-Rapid Plate.** Made by Elliott and Sons, Ltd., Barnet, Herts.

Recent trials of some of the plates now being issued by Messrs. Elliott specially for the professional photographer under this name have enabled us to confirm the claim of the makers for a plate of high speed, and at the same time of great cleanness of working. The "Studio Extra-Rapid" certainly does not belie its name, and we were fully satisfied with its behaviour in development and the brilliancy and quality of the negatives obtained by giving exposures for a plate of high rapidity. Messrs. Elliott, it should be said, have the professional photographer primarily in view in introducing the plate, and are therefore making the special offer to send a parcel of three dozen half-plates for the purpose of a preliminary trial on the receipt of 5s. Those who avail themselves of this offer may at the same time inform themselves of the liberal terms upon which Messrs. Elliott will undertake to supply regularly.

**Black "Japine" Platinotype Paper.** Made by the Platinotype Company, 22, Bloomsbury Street, London, W.C.

The Platinotype Company have just placed on the market a new variety of the platinum paper introduced by them under the name of "Japine" some two years ago. "Japine" platinotype, it is

scarcely necessary to recall, constituted an advance in platinum papers in the direction of surface. Its predecessors had all marked characteristics in the degree of roughness or distinctiveness of texture—which varieties are still highly appreciated for various effects—but the “finest” surface has still a matt, and therefore the “Japine” platinotype, with its “semi-matt” surface, with enough sheen to prove particularly valuable in the shadow portions of the print, was naturally welcomed, particularly by professional photographers, for whose purposes a print with a surface not matt yet not glossy is eminently desirable. That “Japine” gave a print of sepia colour was not regarded as a drawback to it, but the full range of choice among the manufactures of the Platinotype Company has now been completed by the present introduction of a “Japine” which has the surface of “Japine No. 1,” but yields prints of the pure black colour which has always been the distinguishing mark of the platinum printing process.

Black “Japine” is used in precisely the same way as its sepia prototype, or, in fact, like cold bath platinum. The standard half-strength developer is prepared by dissolving the Platinotype Company's salts in 48 oz. of water and diluting with an equal quantity of water to form the developer, in which the “Japine” print obtains its full vigour in less than a minute. The print is then treated in two acid baths and washed as usual. The dry paper, both before exposure and after development, requires to be handled with somewhat more care than the ordinary brand, owing to the different nature of its surface, but beyond this precaution the mechanical treatment of the prints calls for no special remark.

It is no trite excuse for an inadequate vocabulary to say that the results upon the new paper must be seen, not only described, to be appreciated. Adjectives, however exactly used, fail to convey the precise qualities which characterise a photographic print, but special emphasis may be laid upon the brilliance of, and detail in, the highlights of the “Japine” print, and the tonal variations of the shadows—both in the same print. The maximum range of gradation has long been conceded to the platinotype print, but the “Japine” paper would seem to excel the ordinary brands in this respect. Another characteristic is the rich pure black of the print, which thus obtains a decisiveness which, in some manner difficult to analyse, sets a stamp of quality upon the print. And as that is a consummation devoutly to be wished by photographers—who are quick to see that such a quality should go hand in hand with a handsome price—there are obvious reasons other than æsthetic ones for printing in “black Japine.” Indeed, it is scarcely too much to say that if the future historian of photography, judging by the prints of the present era which descend to him, be called upon to say what form of photograph he would describe as the triumph of photographic printing, he will point to an example of “Japine” platinotype. If the present proprietary and staff of the Platinotype Company can never hear such encomiums of posterity they will surely be consoled by the present approval (of the photographers best able to judge) of their persistent determination to produce, as they have done in the present instance, only the best of which they are capable; and they surely cannot expect higher praise than this.

WELLINGTON CHRISTMAS GREETING POSTCARDS.—Messrs. Wellington and Ward send us specimens of the greeting postcards issued by them for the approaching season, in a series of six different designs, embodying appropriate mottoes. The cards are marketed in all the well-known Wellington brands of papers, and in the two regulation sizes of  $5\frac{1}{2} \times 3\frac{1}{2}$ , and  $4\frac{1}{2} \times 3\frac{1}{2}$ . The prices are as follows:—

REGULATION SIZE:  $5\frac{1}{2} \times 3\frac{1}{2}$ .

Bromide: Matt, glossy, and carbon, in packets of 18 cards, for 1s.; and in packets of 8 cards for 6d.

S.C.P.: Matt, glossy, and carbon, in packets of 18 cards, for 1s.; and in packets of 8 cards for 6d.

P.O.P.: Matt, glossy, and carbon, in packets of 12 cards for 6d.

Self-Toning: Matt and glossy, in packets of 12 cards, for 1s.

COURT SIZE:  $4\frac{1}{2} \times 3\frac{1}{2}$ .

Bromide: Matt, glossy, and carbon, in packets of 12 cards, for 8d.

S.C.P.: Matt, glossy, and carbon, in packets of 12 cards, for 8d.

P.O.P.: Matt, glossy, and carbon, in packets of 16 cards, for 6d.

Self-Toning: Matt and glossy, in packets of 12 cards, for 8d.

The designs are supplied in packets assorted, or in grosses or thousands from assorted designs to order.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

FRIDAY, NOVEMBER 20.

West London Photographic Society. “On the Printing, Developing, and Toning of Velox Papers.” W. F. Slater.  
Mill Camera Club. “Photographic Tiles.” W. Mansfield.  
Sutton Photographic Club. “Autotype Co.'s Carbon Process.” J. Braham.

SATURDAY, NOVEMBER 21.

Aberdeen Photographic Art Club. “Bird Photography.” Thomas Tait.

MONDAY, NOVEMBER 23.

Scarborough and District Photographic Society. “Elementary Enlarging.” B. A. Kenny.  
Bletchingley and Nutfield Camera Club. “On the Printing, Developing, and Toning of Velox Papers.” W. F. Slater.  
Bradford Photographic Society. “Nature Poets and Nature Pictures.” Per Lund.  
Kidderminster and District Photographic Society. “Hints and Tips.” A. Gordon Smith.  
Stafford Photographic Society. “Enlarging.” A. L. Yapp.  
Southampton Camera Club. “On the Fringe of the Austrian Alps.” C. Howdill.  
Cripplegate Photographic Society. “Plates and Development for the Printing Process to be Used.” C. W. Coe.  
Graysend Photographic Society. “The Humble Beauties of the Flower World.” E. Seymour.  
South London Photographic Society. “Enlarging.” E. W. Taylor.

TUESDAY, NOVEMBER 24.

Royal Photographic Society. “Wild Birds and their Ways.” W. Bickerton.  
Chelmsford Photographic Society. “On the Printing, Developing, and Toning of Velox Papers.” W. F. Slater.  
Nelson Photographic Society. Exhibition of Thornton-Pickard Prize Slides and Apparatus. R. Hesketh.  
Hanley Photographic Society, Y.M.C.A. “Dordrecht and District.” E. Markham.  
Hackney Photographic Society. “Lantern Slides of President's Outing.”  
Leeds Photographic Society. “The Dead Cities of the Zuyder Zee.” Thomas Green.  
Birmingham Photographic Society. “Canals, Carillons, and Coifs.” C. Howdill.  
Kinning Park Camera Club, Govan. “Yesterday and To-day.” Furrough Wellcome & Co.

WEDNESDAY, NOVEMBER 25.

L.C.C. School of Photo-Engraving, Bolt Court. “Beauty and Sincerity in Art.” W. Seymour.  
Borough Polytechnic Photographic Society. “Afar in the Fatherland.” W. L. Wastell, F.R.P.S.  
Croydon Camera Club. “The Photography of Coloured Objects.” C. E. Kennel, D.Sc.  
South Suburban Photographic Society. “Some Models I Have Photographed.” F. R. Salmon, F.R.P.S.  
Rochdale Amateur Photographic Society. Exhibition of Thornton-Pickard Prize Slides and Apparatus. R. Hesketh.  
East Kent Scientific Society. “On the Printing, Developing, and Toning of Velox Papers.” W. F. Slater.  
North Middlesex Photographic Society. “The Humble Beauties of the Flower World.” E. Seymour.  
Leeds Camera Club. “Preparing the Exhibition Print.” T. Lee Syms, F.R.P.S.  
Wimbledon Park Photographic Society. “Lantern Slides and How to Make Them.” E. Prior.  
Edinburgh Photographic Society. “The Improvement of the Negative.” Andrew H. Baird, F.R.P.S.

THURSDAY, NOVEMBER 26.

Handsworth Photographic Society. “Flashlight Photography.” R. H. Phillips.  
Trent Camera Club, Stoke-on-Trent. “Dutch Lantern Pictures.” A. E. Stubbins & Co.  
Liverpool Amateur Photographic Association. “Rambles and Scrambles on Pacific Slope and in the Yellowstone Regions of the Far West.” Harold Young.  
Chelsea and District Photographic Society. “Lantern Slides by Reduction.” A. S. Long.  
Rugby Photographic Society. “The ‘A.P.’ 1908 Prize Slides.”  
Richmond Camera Club. “Tynedale with Reference to Old Roman Wall.” H. Dale.  
Batley and District Photographic Society. Exhibition of Thornton-Pickard Prize Slides and Apparatus. R. Hesketh.  
North-West London Photographic Society. “A Dive into Belgium.” W. L. Wastell, F.R.P.S.  
London and Provincial Photographic Association. “The Christian Monument at Rome.” S. J. Beckett.  
Maidstone and Institute Camera Club. “Flower Photography.” E. Seymour.  
L.C.C. School of Photo-Engraving, Bolt Court. “Some Considerations Affecting Photo-Mechanical Etching.” A. J. Newton.  
Melbourne (London) Camera Club. “On the Printing, Developing, and Toning of Velox Papers.” W. F. Slater.

### ROYAL PHOTOGRAPHIC SOCIETY.

MEETING held November 17. The President, Mr. J. C. S. Mummery, in the chair. The eleventh Traill-Taylor Lecture was delivered by Dr. E. Wandersleb, of the Carl Zeiss Scientific Staff, Jena, on subject of “The Regulation of the Rays in a Lens-system.” Wandersleb read his lecture in excellent English, and, as anticipated in our announcement of the discourse treated his audience to a clear and masterly exposition of the most modern way



considering what in England we generally style the "action of a lens." After briefly touching upon pure geometrical optics and the limitations of the Gauss theory, he went very fully into the theory of pupils introduced by Professor Abbe, the theory of the plane focussed for, or "objective plane" as it is sometimes called, due to Dr. von Rohr; and finally completed the exposition by an account of the effect of pupils and "lukes" combined. Unfortunately, the science of optics is so much behind-hand in this country that some students have not even reached a knowledge of the Gauss theory of principal planes. Few excepting among professional opticians have any full knowledge of the Abbe theory of pupils, while we believe Dr. Wandersleb is the first to explain in English the important effects of the "luke." Those who have studied the pupil theory are, of course, aware that the pupils of a lens are images of the stop aperture formed by the front and back combinations of a doublet objective. Similarly the "lukes" are the images of the margins of the respective combinations. While the entrance pupil bounds the amount of light that passes through the diaphragm aperture, the entrance "luke" bounds the principal rays that pass through the centre of the diaphragm. Therefore, by considering the pupils and the "lukes" together, allowance is made for the cutting-off effects of the lens mount, etc. Of course, in these modern theories of a lens' action the assumption is made that the lens is free from aberration. The older Gauss theory was, of course, incomplete, as in the case of actual instruments it only applied correctly to light-pencils of very small obliquity. The newer theories go farther than this and permit a far more general and complete view to be taken of the full action of the lens. We look upon this lecture as a most important one of the Traill-Taylor series, as no such complete summary of the most modern German theories has hitherto been presented in this country.

On the proposition of Dr. C. E. Mees, seconded by Mr. George E. Brown, a vote of thanks was passed to Dr. Wandersleb, to whom the medal commemorating the lecture was presented. Dr. Wandersleb's brief acknowledgments brought the meeting to a close.

#### THE PROFESSIONAL PHOTOGRAPHERS' ASSOCIATION.

A meeting of the General Committee was held at the Royal Photographic Society, 66, Russell Square, W.C., on Friday, November 13. Present: Messrs. F. A. Bridge, Alfred Ellis, E. C. Elliott, S. H. Fry, H. E. Hull, L. Langfrier, A. Mackie (hon. sec.), D. Procter, Lang Sims (hon. treasurer), C. H. Skillman, and Fellows Willson. In the absence of the president, Mr. A. Ellis took the chair. The hon. secretary read names of five new members who had joined during the month.

The hon. secretary reported that the case of the "Throne" disrupting the charge made by a member for reproduction fees had resulted in a County Court summons being issued, and the amount had been paid into court.

The case of the prosecution of a free enlargement canvasser by Mr. Thorneycroft, of Wolverton (reported in the "B.J." of October 16), was discussed. The decision of the magistrate was considered an extraordinary one under the circumstances, and the hon. secretary was instructed to write to Mr. Thorneycroft on the subject.

A discussion followed on the possibility of coming to an arrangement with the Press with regard to the use of photographs for which permission had not been previously obtained from the photographer.

Mr. E. C. Elliott, in opening the subject, said that during the last two years he had had some conversation on the general question of copyright and the relation of photographers with the Press with influential members of that body, and they had taken a good deal of interest in the matter, and pointed out the defects in copyright matters. They unanimously expressed the desire that some arrangement should be come to by which photographers could be approached on the matter, and this resulted in the secretary of the Newspaper Society, who is also secretary to the Press Association, calling upon him, at the request of the committee of the society, to talk the matter over informally and go into the question whether some better understanding could not be arrived at with regard to the dealings of the Press with photographers, and especially with regard to the question of payment for unauthorised reproductions. The secretary pointed out that the necessity frequently arose of publishing a photograph of a person who, for some reason or other, became suddenly notori-

ous, and there was not always time to obtain permission of the holder of the copyright. As a result trouble frequently arose between the newspaper and owner of copyright as to terms, and he, Mr. Elliott, thought, with the secretary of the society, that it would really be to the advantage of photographers if some satisfactory basis could be arrived at in such circumstances. Mr. Elliott informed the secretary that he was of opinion that the whole question was one that should be dealt with by the P.P.A., which had done an immense amount of work in settling copyright claims, arbitrating unjust claims, etc., and he therefore suggested that the matter be referred to the Association, who would, he felt assured, go thoroughly into it. The Newspaper Society were quite prepared to depute a sub-committee to meet another of the P.P.A. on the subject. Mr. Elliott said he knew for a fact that for some years past newspapers have been in very close conference, and knew what their rights were, and that there was a very strong feeling amongst them that they have not always been treated well, and he thought that every effort should be made to come to a proper working understanding. He himself felt that the Association should consider this matter. He had little doubt that the two associations could come to an agreement and could formulate some scheme from which a very great deal of good would arise. The newspapers realised they could not very well do without photographers, and every day the use they made of photographs was increasing. It was true that neither the Newspaper Society nor the P.P.A. could bind directly in any way those outside their membership, but such an agreement as was proposed might in time establish a trade custom which would have the force of a law.

After discussion by the members Mr. Ellis said it seemed to him that there was a good opening here for doing a good piece of work, and he thought it would be better if the General Committee were willing to leave the matter for a time with the Copyright Sub-Committee. He also suggested that the sub-committee should be allowed to communicate with any other photographers who were not members, in order that they might get an opinion from the bulk of photographers. This might also be the means of strengthening the society, and could not do any harm. This resolution was put to the meeting and carried. Several other cases were considered, which it is inadvisable to refer to publicly.

**CROYDON CAMERA CLUB.**—Mr. T. K. Grant talked on Autochromes last week, his remarks being illustrated with a series of magnificent slides. Their size (18 by 13 cm.) necessitated the club's enlarging-lantern being requisitioned, a white-flame arc, kindly lent by Dr. Mees, giving probably the best rendering of colours possible with artificial illumination. Mr. S. H. Wratten manipulated the improvised projection apparatus. Lovely, indeed, were most of the Autochromes shown on the screen, and whether Art or not—spelling "Art" with a great big "A"—the most up-to-date impressionist could hardly deny that the process is capable of producing pictures of the utmost beauty and realism, although it only strives to reproduce "Nature" with fidelity, shade by shade, and colour by colour.

The lecturer opened with a particularly happy exposition of underlying principles. His hearers were asked to consider the coating of the plate to consist of collective groups of three starch-grains, each dyed with one of the three primaries. Light passing equally through the three was equivalent to "white." Cover up any grain and the colour would be "white," minus the colour blocked out. For instance, if the blue grain were hidden, the remaining red and green grains gave the complementary colour—"yellow." For estimating exposures, he used a Wynne meter, reckoning the plate speed as follows: On a bright sunny day Wynne  $f/14$ ; diffused daylight, Wynne  $f/11$ . In dull light, Wynne  $f/8$  would be about right. In a well-lit interior, if an exposure were given equal to the actinometer time, then a result would be obtained which (following the latest instructions for modifying development) should be satisfactory. The special green safe-lights now allowed the progress of development to be watched. In all cases it was assumed that a stop not smaller than  $f/16$  be employed. If any error in exposure were made, that error should invariably be on the side of over- rather than under-exposure; the percentage of failures would then be considerably reduced. Various complaints as to the permanganate reducer getting out of order had reached him, doubtless due to improper methods of making up this solution. The method used at Lyons, and adopted

by himself, was to keep the permanganate and acid in separate bottles, mixing immediately before use. The plate when immersed looks at first muddy, then brightens, and finally clears. Visual inspection was best here. The redeveloper should be freshly prepared, and the plate redeveloped in excess, if anything, of the time given in the instructions. Questions as to the amount of light which should be allowed to reach the plate when being redeveloped had been dismissed. From experiments made, no difference was discernible between one half of a plate redeveloped in direct sunshine, and the other half manipulated in diffused daylight. The fear of solarisation would therefore appear to be very remote.

Turning to intensification, the lecturer said no plate could be considered complete without it; in fact, no plate can be held to be correctly exposed which does not require after-intensification. This did not necessarily mean increased density. With a plate correctly treated 40 seconds at 60 Fahr. should be sufficient; the solution first turns brown. At the first sign of this colour turning to a brown-black it should be discarded. If intensification be incomplete the plate should be given a short wash, a rinse in the oxidising solution, another short wash, and reintensified. A fungoid growth sometimes occurred in solution F. The following modification of the formula was effectual as a preventive:—Water, 900 ccs.; citric acid, 3 gms.; pyrogallie acid, 3 gms.; salicylic acid (half per cent. solution), 100 ccs.

Defects which might occasionally occur in the finished Autochromes were little green and black spots; he had pleasure in suggesting for the first time remedies for both. Green spots might be due to too strong a spring in the dark-slide, or to dust. They were readily removed with a needle, the tiny cavity, after varnishing, being filled up with water-colour pigment. The same course of treatment might be adopted with black spots, or better, they could be removed by the "Wellington" bromide reducer, but about three times the strength given in the "British Journal Almanac." (The thiocarbamide reducer given on page 883 of the forthcoming 1909 "Almanac" is presumably here meant.—Eds. "B.J.") This should be carefully applied to the spots, followed by immersion in the fixing-bath and subsequent wash. The lecturer laid stress on the necessity of varnishing in every case; the varnish was poured on cold, any excess being allowed to drain off, inside the sleeve being an inconvenient but usual receptacle before the "knack" was acquired. Cementing with balsam was even more interesting than varnishing; he had been engaged in the pleasing occupation that day, and the last stage of his wearing apparel was such that no offer from any second-hand dealer in garments could reasonably be expected. For lantern work Canada balsam afforded a greater protection than varnish, though the latter was sufficient. Some discussion had taken place in the past as to whether Messrs. Lumière had discarded the original black "filling," relying upon the increased area of the grains when crushed to fill up the interstices. The correct solution appeared to be that both methods were still in force to prevent light passing other than through the coloured granules.

An animated discussion, relevant and irrelevant, followed the lecture. In answer to a question as to the keeping properties of Autochrome plates, Mr. Grant said that only the other day he had used plates from batch 86, made at the end of August last year; excellent results were obtained. After exposure, plates had also been kept by him for six months, and then developed without any apparent loss. Damp was the greatest enemy, but if stored with ordinary care they should remain in good condition for six months at least. Other speakers confirmed the lecturer's observations, and it was pointed out that although Messrs. Lumière placed a date limit on the boxes, yet that did not necessarily imply that the plates would be unserviceable subsequent to such date. A query was also raised as to the permanency of the dyes used to impregnate the starch grains, and a case was instanced in reply when an Autochrome, since June last year, had been continuously exposed in a window to all the sun Glasgow could boast of. No perceptible change had taken place.

LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.—Meeting held November 12, Mr. Furley Lewis in the chair. Mr. P. R. Salmon lectured upon "Models I Have Photographed." His remarks took the form of hints to would-be workers doing portraiture at home. A series of fine slides were shown, showing the effects of different lighting arrangements, the use of light and dark backgrounds, etc. Some forty-five portraits of the same sittings, all taken in the same

room, but with slightly different lighting and different focus lenses showed what could be done at home in an ordinary room. The slides exhibited a vast difference of expression, and the lecturer stated that all the results were obtained by the aid of the shutter, the lighting, and the varying focus of the lens. Speaking of the tones of some of the slides shown, he said that they were all done upon Ilford "Alpha" plates, some were intensified with mercury and ammonia, but he was surprised that, when so treated, they gave a beautiful warm brown image instead of the black which he expected.

## Commercial & Legal Intelligence.

A BRITTON BANKRUPTCY.—How an amateur photographer tried to carry on a high-class photographer's business without much knowledge of the art and with practically no capital was related in the London Bankruptcy Court before Mr. Registrar Brougham on November 13, when Walter William Powell, of 4, Barrington Road, Brixton, and formerly of 414, Brixton Road, photographer, appeared for his public examination. The liabilities expected to rank for dividend are put at £354 13s. 6d., and the assets are a number of book debts estimated at £12 9s. 8d. In his examination by the Official Receiver (Mr. Grey) debtor said that in March, 1897, he commenced business as a photographer, having an amateur's knowledge. He had practically no capital, and borrowed £50, and with this, and what he otherwise possessed, bought the stock of the photographer's business at 414, Brixton Road for £80. At the end of the first year he had exhausted all his capital, and from then, he agreed he had been going from bad to worse. He was, however, always able to make good the losses. Subsequently he tried to turn the concern into a high-class photographer's business, and he engaged a staff of assistants, to whom he paid £6 18s. a week in wages. In 1900 the business reached its high-water mark, his takings for the first three years fluctuating between £500 and £700 a year. From then business rapidly declined owing to shortness of money. Debtor said that to make a living out of the business he would have to take at least £1,000 a year. In 1905 his creditors began to press him and in December of that year he made a payment for rent to clear it up to July of that year. The business was eventually closed in August, 1907, the landlord taking possession of the premises. There was an amount then owing for rent of over £300, the yearly rent being £100, and £78 a year for the use of the plant. He estimated that the value of the goods that were left in the premises when they were closed amounted to £89. Replying to further questions, debtor said that in February, 1905, he realised that he could not pay his debts out of his assets, but he continued the business in the hope that it would improve. Some of his friends had now promised to start him in business again if he could get his debts cleared through that Court. Insolvency was attributed to heavy expenses and bad trade. The examination was concluded.

### NEW COMPANIES.

ANIMATED PICTORIAL ENTERPRISES, LTD.—Capital, £10,000, in £1 shares. To carry on the business of music-hall, opera-house, cinema, photograph, or café chantant proprietors, caterers for public entertainment, etc. The subscribers are: W. Firth, Craven Bank Chambers, Bradford; W. F. Jury, 142, Long Acre, W.C., animated picture dealer, and A. Moul, 53a, Shaftesbury Avenue, W.C. Private company. The first directors are: W. Firth, W. F. Jury, and A. Moul (all permanent). Qualification, £100. Remuneration as fixed by the company.

AD. PHOTO. COMPANY, LTD.—Capital, £300, in £1 shares. To supply business houses, tradesmen, and others, with display frames containing news, photographs, or pictures of topical and other events as a window attraction, to supply fresh photographs from time to time to incorporate into such frames local or other advertisements for display, etc. The subscribers are: J. G. Sparkhall, 10, Martell Road, W. Dulwich, S.E. and F. de P. Romani, 36-8, Whitefriars Street, E.C. Private company. The number of directors is not to be less than two or more than seven. The first are to be appointed by the subscribers. Qualification, £25. Registered office: 36-8, Whitefriars Street, E.C.



## News and Notes.

**"TRANSIENT PHOTOGRAPHERS."**—We read in the "Bulletin of Photography" that the studio proprietors of Des Moines, Iowa, who, like other photographers in the States, have been troubled with the travelling canvassing person, have circulated a petition among themselves to be presented to the City Council, in the future asking that body to pass an ordinance putting all transient photographers under licence. This is the result of a scheme several outside men have worked who have blown into the city and made a house to house canvass selling coupons, thus collecting a large sum of money and then suddenly leaving. The local men claim that it has destroyed the confidence of the people in those engaged in a legitimate business and caused them to lose a great deal of their trade, so in order to protect themselves they will ask the City Council to place any soliciting photographer under strict regulation.

The following is the petition that will be presented, signed by all of the men who are operating studios:

"Honourable Mayor and City Council:

"We, photographers of Des Moines, request your honourable body to pass an ordinance regulating the work of transient photographers in this city.

"We believe that non-residents who come here, selling their wares from house to house and entering into direct competition with us, should be obliged to pay a licence fee, and should otherwise be governed by the city.

"A measure such as we desire will not only benefit us, but will serve as a protection to many people who spend big sums of money for cheap work, and as a protection to persons who are frequently drawn into picture fakes. As the superintendent of the Department of Public Safety probably knows, picture-fakers are numerous, and we feel that for all the reasons stated we are entitled to a measure of relief."

**INTENSIFIED LIMELIGHT.**—"I venture" (writes Mr. C. E. S. Phillips, to "Nature"). "to direct your attention to a simple device which I have found very useful for increasing the light from a demonstrating lantern. It is usual, on account of their long life, to use so-called artificial lime cylinders, even though they give somewhat less light than pure lime ones. An ordinary Welsbach gas-mantle happens to fit all these cylinders, and should be slipped on before the jet is lighted. The increase in brightness of the light due to this addition is astonishing. The mantle is only slightly damaged by the jet, and by turning occasionally so that the flame impinges upon a fresh place, the intense illumination may be maintained for two hours or so."

**AMERICAN RIGHTS IN PORTRAITS.**—The Court of Appeals at Albany, N.Y., on October 23, declared constitutional a law passed in 1903, which declares that the picture of a person cannot be used for advertising or trade purposes without his consent. In 1903 Chief Justice Alton B. Parker, of the Court of Appeals, in decision, determined that a right of privacy enforceable in equity did not exist in this State such as would enable a woman to prevent the use of her portrait for advertising purposes without her consent, but he pointed out that the Legislature could enact a law to ensure such privacy. This the Legislature promptly did. Under this law Aida T. Rhodes (according to the "Bulletin of Photography") sued the Sperry and Hutchinson Co. for displaying her picture in its Manhattan office among its premium exhibits, which were exchanged for trading stamps. She secured a decision in her favour, prohibiting the further use of her photograph and a verdict giving her \$1,000 damages. The Brooklyn Appellate Division affirmed the trial term decision, and so did the Court of Appeals. The company fought the constitutionality of the law, which is upheld by the Court of Appeals in an opinion written by Justice Willard Bartlett.

In discussing the operation of the law, Justice Bartlett says:

"The new law is wholly prospective in its operation and hence does not apply to previously acquired pictures. Upon portraits the ownership of which was in others at the time when the act took

effect its provisions are inoperative. Such pictures the owner is still at liberty to use for advertising or trade purposes, without being held thereby to have been guilty of a crime or to have committed a tort. His property rights therein are unaffected by the statute.

"On the other hand, as to pictures whose ownership remained in the person represented at the time when the act took effect or portraits subsequently made, a transfer of ownership no longer carries with it the right to use the picture for advertising purposes unless the written consent of the person portrayed shall have been given. The acquisition of such picture by itself does not carry with it the right to use it for advertising or trade purposes except with the written consent of the person represented."

**A FORTHCOMING WORK.**—Mr. Henry Frowd is about to publish "Fonts and Font-Covers," by Mr. Francis Bond, a companion volume to that author's "Screens and Galleries in English Churches." The last general account of fonts given was that by Mr. Paley in his introduction to the collection of 123 fonts made by Mr. T. Combe in 1844, and there exists no consecutive account of the very beautiful font covers which survive of Gothic and Renaissance design. Mr. Bond treats his subject historically, showing side by side the gradual modifications of doctrine and ritual which obtained in the mode of administration of the rite of baptism. There are upwards of 400 illustrations showing fonts and font covers of all periods.

**A PHOTOGRAPHER'S SUICIDE.**—The Croydon Coroner held an inquest last week on the body of Frederick James Robinson, 53, a photographer. The deceased had suffered from depression and sleeplessness for about a year on account of bad business. He often complained of headaches. Deceased had all the symptoms of prussic acid poisoning, and the medical man found a bottle which contained a solution of cyanide of potassium. Death was due to prussic acid poisoning. The jury returned a verdict of suicide during temporary insanity.

**PIGEON PHOTOGRAPHERS.**—According to the "Daily Mirror," taking photographs during flight is the latest use to which carrier pigeons have been put by Dr. Jules Neubronner, of Falkenstein, Germany, who has devised a tiny photographic chamber which will take distinct photographs during the average speed of flight of twenty yards per second. The photographs are taken on films, 1 in. square, of which there are thirty; while a shutter opens automatically every thirty seconds by means of a small india-rubber bulb pressed by clockwork. Trials show that a pigeon can carry the apparatus, weighing 2½ oz., for ninety miles without fatigue.

## Correspondence.

\* \* Correspondents should never write on both sides of the paper.

No notice is taken of communications unless the names and addresses of the writers are given.

\* \* We do not undertake responsibility for the opinions expressed by our correspondents.

### A SOCIETY FOR NIGHT PHOTOGRAPHY.

To the Editors.

Gentlemen,—In various societies in town and country I have met members who, like myself, are keenly interested in night photography. By night photography I do not mean "fakes" or results obtained by combinations of daylight and night exposures, but results obtained solely after dark by natural and ordinary artificial light. This is, I am persuaded, a new field for pictorial effect, but little explored and little used, and those who are trying to find out more about its conditions and extend its scope would gain much by co-operation with those engaged in a similar quest. If those who are interested in this matter will communicate, in the first instance, with me I will take upon myself, until some sort of organisation is formed, to call together those who write that they have had some experience of this kind of work, and who may wish to join either a Portfolio

Club or a society.—Thanking you in advance for the hospitality of your columns, I am, gentlemen, yours very truly,  
A. H. BLAKE.  
Blenheim Club, King Street, St. James's,  
November 17, 1908.

#### NEWSPAPER HALF-TONES.

To the Editors.

Gentlemen,—We think you would be interested to know some thing about Patent Application No. 21752. The enclosed proof was printed from a wood block, engraved directly from a hardened plaster mould of a wet carbon print, the whole operation taking about one hour. As the patent is only in its application state, we cannot now describe the machine fully, except to say that the block can be cut any depth, regardless of the depth of the relief. Any



relief can, of course, be used, and for speed those formed by the tanning action of developers or bichromates on dry-plates would be suitable.

Owing to the depth and shape of cut, we think the process will be excellent for stereotyping and rough paper printing.—We are, yours truly,  
A. E. AND W. H. SAY.

2, Whitefriars Street, E.C.  
November 13, 1908.

#### RETOUCHERS' CRAMP.

To the Editors.

Gentlemen,—It is commonly stated that letter writing is a lost art, which may account for the fact that we seldom hear nowadays of what is commonly called "writers' cramp." This, however, is not a lost complaint. Authors and other scribblers can escape it by resorting to the typewriter, but what about the poor retoucher? The golden age when retouching shall no longer be required, and when that dead art will appear like the recollection of an ugly dream, has not yet arrived; in the meantime a few privileged workers have acquired the disease by years of patient toil and incessant use of the pencil. I am induced to write about the matter by reading a letter in a recent issue of the "B.J." of a fellow-worker who complains of trouble with his thumb. I may preface my remarks by stating that I have been retouching incessantly for over thirty-five years, and that therefore it is not to be wondered at that fate, in the shape of "retouchers' cramp," has overtaken me.

It is now quite twenty years ago, that one day, sitting at work, joyous and contented, for of work there was plenty and the weather beautiful, all of a sudden the forefinger of my right hand darted up erect, stood for a few moments, and dropped on the pencil again. I laughed, and the playful beggar, obliged again, and once more. About a week after, it began again, then a few days after, then every day, and then always accompanied by a cramp, which made work very unpleasant. I then, by the advice of various friends, resorted to all kinds of expedients, as tying the pencil to the finger, or the finger to its neighbour, using heavy dumb-bells and swinging an iron head-rest around my head, soaking the hand in oily rags

at bedtime, and submitting to fish diet. But of no avail. I then underwent a select course of agony for about two years, and last, what I should have done at first, consulted a specialist. After about two months' wrestle with electricity, massage, and injection of strychnine in the arm, I was cured, so much so that during the years immediately afterwards I was able successfully to do the most severe and incessant work any retoucher ever did. Alas! About two years ago the hand got worse again, and at last refused service altogether. I had then perforce to take to my left, and by dint of patience and perseverance succeeded in gaining the necessary mastery of that hand. I had read in a medical book, when I had my first attack, that using the left was no good, as it would soon follow suit. It did! After I had used it for a year one fine day I momentarily lost power over the pencil; but, strange to say, this time it was not the finger that was attacked, but the arm. After I had worried over that for some time, hoping it would pass away, I again consulted a specialist, and he diagnosed my complaint as Penman's Palsy. So that at the present time I am the happy possessor of writer's cramp in the right hand and Penman's Palsy in the left arm, both of which possessions I should be glad to pass on to anyone who would like them. This time the treatment is again electricity, and a tonic containing strychnine, and I am happy to say I am able to work, though slowly and somewhat painfully. But the best treatment and a sure cure, the kind doctors advise me, is complete rest for twelve months, say, a nice trip round the world, or to bask in the sunshine of a genial clime to rest your weary limbs. You will agree with me that that sort of a cure would suit many people, and I should be quite agreeable to go through it myself.—I am, Sir, yours faithfully,  
WOLFGANG ARNDT.

8, Carlton Vale, Maida Vale, N.W.

## Answers to Correspondents.

- \* All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.
- \* Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.
- \* Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & CO., 24, Wellington Street, Strand, London, W.C.
- \* For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.

#### PHOTOGRAPHS REGISTERED:—

- S. H. Greenway, 27, Abington Street, Northampton. Two Photographs of the Mayor of Northampton.
- H. W. Graydon, 4, Christchurch Road, Southend-on-Sea. Photograph (Combination) of a Placed Group, containing Thirteen Men, being the Southend United Football Club, Season 1908-9.
- A. Rollins, 17, Shields Road, Byker, Newcastle-on-Tyne. Photograph of the Meeting of Champions, Victoria Grounds, Newcastle-on-Tyne.
- E. G. Harries, Alma House, Bishop Street, Londonderry. Photograph of Admiral Lord Charles Beresford, taken aboard "King Edward VII." at Lough Swilly, Ireland.
- A. G. Wallis, Commercial Road Post Office, Hereford. Photograph of Victoria Bridge and Hospital, Hereford. Photograph of Castle Green, Hereford.
- J. P. Jefferson, Bridge End, Peterborough. Two Photographs of A. J. Robertson International and National Cross-Country Champion.

VARIOUS.—(1) Can you please inform me as to which is the best book on micro-photography, and also the name of the publisher? (2) Do you know of any maker of gelatino-chloride plates, where, instead of the gelatine being on glass, it is on celluloid, and perfectly transparent when held close up to the eye?—T. TEASDALE-BUCKELL.

(1) A very good book on photography with the microscope is that by F. Martin-Duncan (Hazell, Watson, Viney, 1s.) On the making of minute photographs (which is usually described as



"micro-photography") there is no text-book. (2) We know of no dry-plate firm which makes a chloride or print-out film, though possibly you could get films specially coated with such emulsion.

**COPYRIGHT.**—Some time ago I was asked by a printer to take several photographs of interiors of a mill for catalogue illustration. I arranged to supply him with one print from each negative. This was done and paid for. Subsequently the printer asked me to quote for further copies. This I did, but I am afraid he stuck too much commission on; anyway, there was no order. Now what I want to know is, am I justified in offering copies direct to the mill-owner, or must I supply copies only through the printer?—**PTRO.**

If, as we take it is the case, you regarded the printer as liable to pay for the photographs in the first instance, then the copyright in the photographs is his, and you are not at liberty to take prints from the negatives or otherwise make use of the latter without his sanction.

**FIXING BATHS.**—(1) Please tell me the difference in effect between plain and acid hypo on plates, films, and prints. (2) Is acid hypo indispensable in either or any case? (3) How can I convert plain hypo solution into acid ditto, with economy and rapidity?—**ENTHU.**

(1) The fixing action is the same in each case, but is usually rather slower in the case of "acid" baths. The "acid" bath keeps clear as long as it is active, and prevents to a great extent, the greenish colour of negatives developed with pyro-soda. (2) Not indispensable in any of the cases mentioned. (3) By adding potass metabisulphite, about  $\frac{1}{2}$  oz. to each pint of hypo solution.

**GLASS CLOTH.**—Could you please tell me who are the makers of the canvas now so much used for wall decoration at photographic exhibitions, etc.?—**SCOTT GALLOWAY.**

We do not know a maker who supplies except through the trade. Better apply to studio suppliers, such as F. E. Jones and Co., 22, Gray's Inn Road, W.C.

**REND.**—The "St. Louis and Canadian Photographer," 911, N. Sixth Street, St. Louis, Mo., or "Wilson's Photographic Magazine," 289, Fourth Avenue, New York, U.S.A.

**T. PIKE.**—They are not made now, although they have spasmodically appeared on the market during the past fifteen years. The Autotype Co. could supply prints with similar effects.

**P.**—It depends on (a) the focal length of the portrait lens, and (b) the extension of the camera. The extension must be double the focal length of the lens. As you do not give us particulars we can only advise you to apply the above rule for yourself.

**DI-MCHROMATE.**—Would you favour me through the "Journal" with a full and reliable formula for the gum-bichromate process.—**J. C.**

"Formula" for the gum process invariably leave a good deal of latitude to the worker. We can best refer you to one of the text-books on the process, such as that by Maskell and Demachy (Hazel, Watson, and Viney, 1s.).

**STEREOSCOPES.**—Could you tell me if there is on the market a stereoscope very portable or able to be packed up and yet quite efficient and not too expensive. I wish to send one to a relative in Canada and the ordinary American pattern would be awkward to pack, and also liable to damage in transit, I fear.—**JEAN.**

All large dealers such as Houghtons and Butcher's stock folding stereoscopes. One known as the "Foldscope" is made entirely in metal and specially for travelling purposes.

**R. H.**—Not this year.

**BOOK ON ZINC ETCHING.**—1. Could you inform me if there is a book published with full instructions for making zinc blocks for newspaper printing? If so, where could I get same, and price? 2. Is there a sensitised zinc plate on the market?—**J. R. M.**

1. "Photo-Mechanical Processes," by W. T. Wilkinson, published by Hampton and Co., Cursitor Street, E.C. 2. It is usual to sensitise the zinc with a bichromated fish-glue mixture, but we believe a sensitised metal plate is to appear on the market. The inventor is Mr. Arthur Payne, of Mawson and Swan. Better write to him.

**BOOKS.**—1. A good cheap book on cinematograph management. 2. Book or books dealing with professional side of photography. 3. A

quick and cheap developer for portrait work. 4. Are combined baths much used by professional photographers? 5. Recommend a combined bath for portrait work.—**A NEW READER.**

1. "The Cinematograph," by Cecil M. Hepworth (Hazel, Watson, and Viney, 1s.). 2. "Professional Photography," by C. H. Hewitt, 2 vols., 1s. each, published by Iliffe. 3. Diamidophenol, purchased in quantity, forms a very cheap developer, but probably pyro-soda is as largely used as any other developer for portraiture. 4. Not largely by the better class of professional photographers. 5. As reliable formulæ as any are those given in the "Almanac" under "P.O.P. formulæ."

**MAKE OF LENS.**—Could you inform me what make of lens bears this trade mark (device)? There is no other mark on the mount.—**A DABBLER IN PHOTOGRAPHY.**

Without seeing the lens we are unable to say what make it is. We do not know the trade mark as sketched, but probably it is that of a dealer who sold it and not that of the maker.

**PAINTER.**—We believe you are liable for the fees, and you certainly will have to submit your plans to the district surveyor for whatever purpose the building is used.

**W. HALL.**—We do not know of any such book, but possibly some of the booksellers might be able to tell you of one. Write to Sotheran's, in the Strand, or George and Sons, 151, Whitechapel Road.

**LIGHTING OF STUDIO.**—Should be obliged if you would suggest a suitable lighting of studio by incandescent gas. Could I obtain good results for heads, three-quarters, small groups of, say, four persons, with eight incandescent mantles, or how many should I require, and what would be the best arrangement of same? I should feel extremely obliged if you would be good enough to put me right in this matter.—**CHAS. WALLACE.**

Eight burners could be used, but the exposure would be very long for groups, even if a lens with large aperture were employed. We should advise you to apply to the Tress Company, Rathbone Place, for a list. From this you will gain some information as to what is required.

**STUDIO QUERY.**—I bought a business here (stationery, etc.), intending to open up with photography, but cannot get my plans passed for studio unless I have all brickwork right round, which I cannot afford, so I think of converting a room upstairs into a small studio. I have enclosed a rough plan of room. 1. What lens is most suitable? 2. Which artificial light is the best? I have gas in the room. I have a half-plate, —'s, working  $f/6$ . I shall be pleased of any advice you can give me.—**A. E. NICHOLLS.**

1. The room you propose to convert into a studio is much too small for even medium-class work, seeing that the shortest focus lens made for cabinet portraits, full length, requires between camera and sitter the full length of your room. A lens with an aperture of  $f/6$  is, of course, slow for artificial light. 2. The electric arc light is the best for portraiture.

**APPRENTICESHIP.**—I beg to thank you for your kind and prompt answer to my enquiry re apprenticeship and agreement in the "Journal" of November 13. Might I ask a further favour? What should be a reasonable time given to an apprentice to be taught studio work, viz., lighting, posing, and dealing with sitters, also sepia printing?—**HILLIER.**

We should say that with a three years' apprenticeship the apprentice should receive practical instruction in studio work during two years, or at least eighteen months, of the period, as that is the most important part of the business. He cannot well be expected to become proficient in this part of the business in much less than a year if his whole time is devoted to it. Proficiency in the studio, lighting, posing, and the management of sitters is not learnt in a few months.

**A PATENT QUERY.**—I have recently bought the business of Mr. — under the hammer, which was sold through judgment in the High Courts. Among the tools is a midget camera with a numbering arrangement for numbering the sitters. I am now served with a writ from Mr. — to restrain me or my servants from infringing his patent. Will you tell me in this week's "Journal" if by using the camera I am infringing patent rights, as I fail to see in which way I am; also can they compel me to destroy the camera or deliver to them? I have always thought

that the patent granted was to stop anyone from making. I have not made or caused to be made this camera, but am only using in the ordinary way of business.—TRANSFERRED.

If the camera is patented you can be restrained from using it, except under licence from the patentee. You are under a misapprehension with regard to the patent law only applying to the manufacture of the apparatus; it also applies to the using of it, otherwise a patentee would have but little protection in his patents. Probably you can obtain a licence to use the apparatus for a small sum.

**COLOURING.**—1. Where may we obtain Raffaelli's solid oil colour pencils as mentioned in "Almanac" of 1907? 2. What is monochrome? Where may we obtain it? What does it cost?—OIL COLOUR PENCILS.

From any dealer in artists' materials, or from a London house, such as Marion and Co., Soho Square, London, W. 2. We know of no trade preparation sold under this name. The word is usually used to signify production of a print, etc., in one colour only.

**STOPPAGES FOR BREAKAGES.**—Kindly let me know if I can summon an employer for stopping my wages for breakage. No agreement was made, nor was it mentioned at the time, three months before I left. It was deducted from my last week's salary.—C. VALROSCHÉ.

You can certainly summon your employer, but whether you will recover is another matter. In your case we should say you will, seeing that no agreement was made with reference to breakages when you were engaged. If the accident occurred three months ago, and you have since been paid without deductions, we think you will be able to recover your full salary.

**MIDGET PORTRAITS.**—1. Formula for a hydroquinone developer that will give a hard, "contrasty" negative, and dense enough to give good bromide results. A developer suitable for both plates and paper preferred. 2. What method can I adopt for artificial lighting to take midgets (head and shoulders) other than flashlight where neither gas nor electric light is available? Is there any apparatus sold to burn petrol or acetylene gas; if so, where obtainable? Any hints on the lighting for above much appreciated. 3. Can you recommend a suitable lens for taking the above (12 on  $\frac{1}{4}$ -plate), moderate in price, fast, and for working in a confined space?—SCROGG.

1. The second hydroquinone formula given in the "Almanac," p. 771 (1909 edition, published December 1), will give great contrast quickly, and may be used for both plates and prints. 2. We know of no petrol installation which would be of any service. Acetylene is quite suitable. Better write to R. J. Moss, 98-99, Snow Hill, Birmingham, stating your requirements. 3. A C. de-V. portrait lens would be as suitable as any if its focal length does not require too great distance from camera to sitter. As a guide, we would mention that a head and shoulder, measuring, say, 20in., will be reduced on each small print to about 14in., a reduction of sixteen times. Therefore, with a 6in. lens the distance between sitter and lens will have to be about 8½ft. See the "Optical Rules," p. 932 of the 1909 "Almanac."

**POT. CHLOR.**—A formula of the kind is: Potass nitrate, three parts; potass perchlorate, three parts; magnesium powder, four parts; but better are the commercial powders, such as the "Agfa" of Chas. Zimmermann and Co. Moreover, the making of flash powder is not without danger. It is impossible to give an idea of the quantity, but for so large a space it would be half an ounce or more, laid in a train or narrow ridge.

**R. F. LUGG.**—We will reply to yours next week.

**PATENT QUERY.**—There is nothing to prevent you making carbon tissue for your own use, or for sale, if you desire. There are no patents now in existence in connection with the ordinary carbon process. We rather doubt if it will pay you to make the material for yourself seeing that excellent tissues are now marketed at a moderate price.

**STAFFS.**—Methylated ether will do quite well for thinning enamel collodion. Methylated spirit may also be used, provided its strength is not less than S.G. 820. If it is weaker than that there is the risk that the thinned collodion will give a crapy film.

The spirit should be free from mineral spirit. That which now known as industrial alcohol is what should be employed.

**H. R. COTMINGTON.**—The firm is a highly respectable one, and it is highly probable that the reproduction was made without knowledge that there was a copyright in the picture. We have little doubt that if the copyright is really yours, and if you the magazine, giving the date and number of registration, proprietors will arrange terms with you. We should advise you to do this before putting the matter in a solicitor's hands. If the picture is unique you should receive a fair sum by way of damages.

**G. SOLOMON.**—There is no fault in the lens with which the negative was taken. The cause of the cracked line at one side of the print is that the paper has been stretched in the mounting. That seen by the cut edge being crooked like the line in the photograph. Are you not aware that paper, when wet, can be stretched to a very considerable extent, and often produces distortion in the photograph?

**STUDIO.**—(1) You will have to submit plans of the studio to the local authorities and get their approval of them before you commence building, otherwise you may possibly have to take all the work when finished. The fact that the landlord has given you written permission to erect the building has nothing to do with local building laws. (2) The design for the studio is as good as could be desired, though it would be more convenient for work if it were a couple of feet or so longer.

**SITUATIONS IN FRANCE.**—Having the idea of going to improve myself in France, I am anxious to know of any French photographic paper which contains advertisements of situations vacant, such as appear in the "B.J." Should be glad to know name and price of same.—FELIX.

The best paper is "Photo Revue," 118, Rue d'Assas, Paris. You had better write for a specimen copy.

**"HOBBIES" CLUB FOR LONDON.**—Viscount Molesworth and Hon. George Scott (we read in the daily papers) have hit upon a new idea for a club. Assisted by an influential committee, they are negotiating for splendidly equipped premises in the West-End of London as a home for the new "Hobby Club."

Men will be admitted as members; women as associates. All men have hobbies, and, so far as the club is concerned, they must be amateurs. The club will cater for hobbies in: Science, travel, sports, curio collecting, physical research, carving, metal work, photography, gardening, book collecting, china, *objets d'art*, and recreations generally of busy men and women of position.

An extensive library will be formed on all subjects. Intellectual salons will be held, at which men or women of similar tastes may confer and aid each other. Experts will be engaged to lecture and give advice. There will be a department where members and associates may sell, buy, or exchange their *objets d'art*.

Already many well-known men and women with hobbies have given their patronage to the club, and Mr. Stuart Nuthall, at the temporary offices, 33, Wilton Place, will supply full particulars to those interested in it.

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## SUMMARY.

THE BRITISH JOURNAL ALMANAC.—The entire edition of 25,000 copies is now exhausted, and our publishers regret to announce that they cannot fulfil further orders.

A forecast of the probable results of the recent conference at Berlin on international copyright is supplied by a contributor in Germany, Mr. Richard Thirsk. (P. 904.)

Mr. W. Foster Brigham contributes a description of the method of card-filing suitable for controlling both working and book-keeping in a professional portrait business. (P. 905.)

Some points arising from the recent Inland Revenue prosecution of free-portrait canvassers are mentioned in an article on p. 902.

A most useful compilation of hints on portraiture appears in the American Annual of Photography," just published. (P. 908.)

Some interesting figures regarding German photographic trade with Portugal have recently been published. (P. 903.)

Mr. W. E. Debenham contributes directions for the making of carbon prints on ivory by the single transfer process. (P. 911.)

The use of gold chloride in the salting solution for plain paper is advised by a practical worker. (P. 910.)

The practical methods to be followed in using the carbon process lantern slides are the subject of an article on p. 903.

Photography in the study of metals is now regularly used by engineers and steel-makers. A description of the method employed is given on p. 912.

Mounting methods and dark-room lamps appear among patents this week. (P. 913.)

Blackpool photographers have banded themselves into an association, formed with the object of protecting photographers of that town against the "ravelling fraternity who visit it only for the summer months. (P. 913.)

## EX CATHEDRA.

### Bromoil and Acid Fixing-Baths.

A correspondent in a contemporary attributes some failures with the Bromoil process to the use of an acid fixing-bath. He developed with amidol, following with a fixing bath rendered acid with sodium sulphite and sulphuric acid, and after the Bromoil preparation had been carried out there was no relief whatever in the prints. On resorting to plain hypo fixing baths the trouble disappeared. In this particular case it is evident that the acid fixing bath was detrimental, but we believe some workers habitually use acid fixers without mishap, therefore there must be some special circumstances that require further consideration. In all cases of this kind there are many variable conditions. If a print is put into an acid fixer without rinsing there must be some kind of reaction between the acid and the alkali of the developer. This will differ with different developers, and varying products will be formed which may or may not interfere with the Bromoil preparation process. Then, again, there are different varieties of acid fixing baths. To arrive at the true cause it would be necessary to spend a considerable time in "ringing the changes" on all the possible variations, and only those who have attempted a similar course of experiments can realise how the number of possible variations seems to increase as the work progresses. We do not much believe in the idea that reaction between developer and fixer is the cause of the trouble, and we are inclined to think that the most important point to test first is the kind of fixing bath. The most popular form of acid fixer is a hypo bath, to which either potassium metabisulphite or sodium bisulphite has been added, but the one used in the case quoted was composed of hypo, sodium sulphite, and sulphuric acid. Though the last two constituents mentioned combine to form bisulphite, yet the final result is not the same as a bath to which plain bisulphite has been added, because a very large proportion of soda sulphate is formed. Whether this makes any difference or not we cannot say positively, but it is at the least a possible source of trouble.

\* \* \*

### Some Experiments in "Stereo-scopie" Relief.

Prof. Gustave Michaud describes in the "Scientific American" some experiments that have apparently led him to the conclusion that we can perceive relief in a single photograph if, by means of reflectors or other suitable aids, we can observe it with both eyes without converging the visual axis. This he considers to throw light on the "hitherto unexplained cause" of the relief seen when we examine a picture with both eyes through single large lens—in other words, through araphoscope, the action of which was very fully explained in an article

in our issue for April 5, 1907. The principal experiment described by Prof. Michaud is the examination of an imitation stereoscopic slide made up of two similar prints. This happens to be a good specimen, and it shows strong relief in an ordinary stereoscope. Instead of an ordinary stereoscope the Professor employs a piece of card with two half-inch holes in it exactly  $2\frac{1}{2}$  inches apart, and holding it in such a way as to facilitate the fusion of the two images, of course, obtains exactly the effect that is produced in a stereoscope. In fact, he uses a stereoscope without lenses. Of course, it is a fact that the visual axes are parallel when the effect is secured, but this does not prove that the suggestion of relief is due to their parallelism. On the contrary, as unsuitable subjects viewed in precisely the same conditions will not readily give any suggestion of relief at all, it appears evident that the effect when obtained is due to something other than simple parallelism. In the example shown the prints are trimmed like true stereo prints, and appear to stand behind the surrounding paper, which condition, as we have often pointed out before, will very frequently give a suggestion of relief in the subject itself. Another experiment of the Professor's is the examination of a single picture by the aid of apparatus that enables both eyes to see it from practically the same view-point through a small pinhole. Given true perspective and a small view-point at the right place strong relief can always be obtained with one eye, and if we can arrange matters so that both eyes view the picture through what is virtually the same pinhole we should expect a similar effect, somewhat more realistic because the conditions are more natural. Prof. Michaud gives no reason why parallelism of the axes should suggest relief, and he apparently overlooks the fact that in ordinary vision strong convergency always accompanies strong relief, while parallelism is associated with absence of relief. He is apparently trying to evolve a general rule from a few very special cases which already admit of far simpler explanations.

#### HAWKERS, PEDLARS, AND CANVASSERS.

THE article in our issue of October 23 on the Inland Revenue prosecution at Worcester of "free portrait" canvassers under the Hawkers Act has brought us a number of letters from photographers who have been interested in this new aspect of the canvassing frauds. Several of our correspondents are apparently under a misconception of the law controlling the doings of the traders described as "pedlars" and "hawkers." One correspondent writes us that on conferring with the police authorities of his town he is informed that no action can be taken in the case

of canvassers who fill orders for frames from samples which they exhibit—that, in fact, such persons are exempt from the Act and do not require a licence. That such, however, is not the intention of the Acts relating to the selling of goods from door to door is shown by the following passages:—

#### Pedlars Act, 1871.

"The term 'pedlar' means . . . any person who . . . travels, . . . carrying to sell or exposing for sale any goods, wares, or merchandise, or procuring orders for goods, wares, or merchandise immediately to be delivered, or selling or offering for sale his skill in handicraft."

#### Hawkers Act, 1888.

"'Hawker' means any person who travels with a horse or other beast drawing a burden . . . carrying or exposing for sale any goods, wares, or merchandise, or exposing samples or patterns of goods, wares, or merchandise to be afterwards delivered . . ."

That the phraseology here employed as to the sale of goods by sample is not used inadvisedly is shown by the further specific exemption of "persons selling or seeking orders for goods, wares, or merchandise to and from persons who are dealers therein, and who buy to sell again." It is therefore evident that the Acts applying both to hawkers and pedlars cover the modes of business adopted by the "free portrait" canvasser.

As regards the recent prosecution at Worcester, it is quite correctly pointed out by several correspondents that it was instituted, not by the police authorities, but by the Inland Revenue Department at Somerset House. While the supervision and register of pedlars and hawkers is very properly assigned to the police authorities, prosecution of a person for house to house trading without licence must naturally come from the Inland Revenue Department. Yet it is not correct to say, as one correspondent informs us has been said by the police of London, that the police authorities are powerless to move the matter. It is within our own recent knowledge that such interference has been made by the police in the case of photographers who were carrying on a genuine photographic business by soliciting orders from door to door. Such photographers have frequently appealed to us, asking if a pedlar's licence was needed by them, and in most cases we could not inform them that their business was done in such a way as to render a licence necessary. Therefore, while we point out that a law officer of the Crown is the one to appear as prosecutor of these canvassing gentry who come within the scope of the Acts, the police authorities are exceeding by very little, if at all, their legitimate duties in seeing that the law as to

### THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC FOR 1909.

Edited by GEORGE E. BROWN, F.I.C.

#### NOTICE.—IMPORTANT.

OUR publishers ask us to inform agents that the entire edition of 25,000 copies of the "Almanac" is now booked, and they regret being unable to execute further orders.

The forty-eighth annual issue of THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC will be published on December 1. This year's ALMANAC reached a total of over 1,000 pages, and the entire edition of 25,000 copies was sold out immediately. Of no other photographic book ever issued can two such unique facts be recorded. The edition for 1909 will also consist of 25,000 copies.

The editorial article will deal very completely with the important subject of

#### REFLEX CAMERAS,

and the systematic review of the work of the year under the title "Epitome of Progress" will be a strong feature of the volume.

The lines followed in the previous editions of the ALMANAC will be maintained in general, but in a number of particulars the arrangement of the volume for 1909 will be modified to make it more than ever the book of universal photographic reference.

The ALMANAC for 1909 will appeal to photographers all over the world as a daily reference guide in practical work. The standard matter and formulae will be revised and added to where necessary, and, wherever practicable, new features of an informative nature will be added.



taking out of a licence is not disregarded, and it was on this account that we suggested to our readers that they might bring the facts before the local authorities in reasonable certainty that the latter would themselves take or advise the taking of the further necessary steps.

### GERMAN PHOTOGRAPHIC TRADE WITH PORTUGAL.

We are constantly calling attention to the fact that English manufacturers of photographic materials are gradually being ousted out of the foreign markets by their German competitors. That these statements are not founded on mere surmise, but belong to the realms of fact, is proved by nearly every statistical report that comes to us from countries abroad. A comparative study of these statistical reports, which may be found among the various Consular Reports published by the Government, should prove a very valuable object lesson to some of our manufacturers, and doubtless stir many of them into action where at present there is too much of the tendency shown to rest on their laurels. From these reports we learn something of the growth of exports of German photographic materials to the various countries using such articles. They prove the German's readiness to adapt himself to the various conditions of the countries to which he exports. In nearly all instances the exports show a steady increase, while in some cases the rapidity with which they have secured the markets is astounding. We are not prepared to say that this increase has always been to the detriment of English exports, for one must always make allowance for the increased demand there is for photographic materials, yet there is more than a suspicion that much of the trade at present going to German houses would be retained by English manufacturers were other methods employed, possibly more pushful methods, similar to those adopted by the Germans.

The latest statistical report comes from Portugal. From it we learn that Germany has supplied more than 40 per cent. of the apparatus, cameras, etc., and of the photographic papers imported into Portugal during the past year, while the same country has sent a fourth part of the plates used during the same period. Here are the figures and the prices paid for the various articles:—

#### Apparatus.

The whole import, 1,040 pieces=18,688 Milreis.  
Of these, imported from Germany, 358 pieces=7,654 Milreis.

#### Plates.

The whole import, 37,618 kilograms=23,225 Milreis.  
Of these, imported from Germany, 10,050 kilograms=5,822 Milreis.

#### Photographic Papers.

The whole import, 15,968 kilograms=17,382 Milreis.  
Of these, imported from Germany, 3,685 kilograms=3,929 Milreis.

These figures show a decided increase in German imports into Portugal as compared with the previous year. And it must be kept in mind that Portugal is one of the least favoured countries for German enterprise. In consequence of high tariff restrictions against Germany the trade of the latter country is hampered, and has not been able to advance in Portugal at a corresponding rate to its advance in other countries. At the present moment the German authorities are negotiating with the Portuguese with a view to abolishing these restricting tariff walls, and it is expected that before long a treaty will be arranged whereby Germany will come under the Most Favoured

Nations Tariff Clause. This will mean a general reduction on all goods imported into the country; in some instances the reduction will be as much as 50 per cent. This is a point well worthy of the English manufacturer's most careful attention. If he is not to lose ground entirely, he must take time by the forelock and make his place in these markets more secure while there is yet time. It stands to reason that whenever this new treaty is accomplished he will experience more keenly than ever the pressure of German competition. This is not the time to discuss the superiority or the inferiority of the goods manufactured by either nation. Much more practical results will be obtained by doing as the Germans do, and making thorough and careful investigations on the spot to find out exactly what the market requires, how it requires it delivered, to have men on the spot whose interest it is to push trade, and, most important of all, to see that the market is supplied with exactly what it requires.

### LANTERN SLIDES BY THE CARBON PROCESS.

MUCH as the working of the carbon process has become familiar among amateur workers, the use of carbon tissue has scarcely made the progress which the fine results deserve, but the advantages of the pigmentary slide from the point of view of fixity and purity of colour surely require no special emphasis, and in the belief that many slide-makers entertain a mistaken idea as to the extraordinary obstacles in the way of carbon for transparency work, we may well pen a few practical hints on the working methods, and such is as good a course as any to show the simplicity of the process.

A stock of glass plates of the standard size ( $3\frac{1}{4} \times 3\frac{1}{4}$ ), free from air bubbles and other defects, are thoroughly cleaned and then coated with the following substratum:—

Nelson's No. 1 photographic gelatine...	1 oz.
Water .....	25 oz.
Bichromate of potash .....	1 drachm.

The gelatine is dissolved in the usual way, and the bichromate is added afterwards. The solution is then strained through fine muslin, and, at a temperature of, say, 120 deg. F. is forced over the plates, which are then placed in a draining rack and allowed to dry spontaneously in full light, and in a place free from dust. It goes without saying that any particles of dust in this coating would show more or less when the finished picture is projected on the screen. A good stock of plates may be prepared at a time, as they will keep indefinitely if stored in a dry place. It is quite possible to develop the prints on unsubstratumed glass, but there is then some difficulty, except in the hands of experienced workers, of retaining the delicate tints in the lights, and other minor troubles may arise in the working. Furthermore, there may be the annoyance of the carbon image splitting off with the heat of the lantern if the slide is long exposed to it. In practice, therefore, the slight trouble involved in substratuming the glass is well expended.

The tissue may be sensitised in the usual way, but for our present purpose it is as well to proceed as follows:—Glass plates are cleaned, and then rubbed over with French chalk. A convenient size to use, if a number of slides are to be made, is fourteen inches square, as that will allow of sixteen pieces being cut from the sheet of tissue. The cleaned and chalked glass is next coated with thin enamel collodion—ordinary enamel collodion, thinned with about a third of its bulk of equal parts of ether and alcohol, is very suitable. After the collodion has well set, the plate is put into a dish of clean, cold water until the apparent greasiness of the film is washed away. The plates are then taken out and stood up to drain, but not to dry. The

tissue, cut a little smaller than the glass, is sensitised in the ordinary manner. A good bath for this time of year is as under:—

Bichromate of potash .....	1 oz.
Liquor ammonia .....	1 drachm.
Water .....	20 oz.

The solution, which may be employed several times, should be filtered or strained through fine muslin before use, to remove any particles of foreign matter it may contain, which would otherwise show when the finished slide is thrown on the screen. The tissue is immersed in the solution for from two and a half to four minutes according to the character of the negatives to be printed from. If the latter is thin and feeble, the shorter time will be ample; if strong and vigorous, the longer time should be allowed. The tissue when taken from the solution is laid on the collodionised plate, and then squeegeed in contact, avoiding air bubbles as a matter of course. The glass with the adherent tissue is now placed where it will dry in from six to eight hours at most. The advantage of drying tissue in this way is that the surface is thoroughly protected from dust during the drying, and also from injurious atmospheric influences, which might produce a surface veiling, or fogging, that would impair the brilliancy of the picture on the screen. When the tissue is dry, it, with the adherent collodion, can be stripped from the glass, when it will have an even and brilliant surface, so that perfect contact with the negative can be ensured. If the tissue is not to be used at once, it had better be left on the plate, as it will then be protected from the air, and, therefore keep good a longer time.

In printing, the negative must have the usual safe edge. A lantern slide mask answers admirably, and for convenience in the working, it may be attached to the negative water, and then squeegeed on the substratum glass, which adhesive can at any time be removed, leaving the negative just as it was before. A convenient way of cutting up

the tissue is to have a glass plate, say, three and an eighth of an inch square, then there will be no difficulty in getting the tissue in exact position on the negative, or on the slide glass for the development. The exposure should be a full one, but not nearly that required for transparencies for enlarging from—about a third or so more than would be given if the picture were to be on paper will be about right, for it should be kept in mind that the extreme high-lights must be represented by quite bare glass.

After printing, the exposed tissue is soaked in cold water, and then squeegeed on the substratum glass, which should previously have been put into the water for a few minutes. The soaking of the tissue, however, should not be quite so long as in the case of paper prints. After mounting, the plates are allowed to stand for the usual time before development. The development is done in the ordinary way—the water being at about the usual temperature. But if the tissue has been over-exposed, it may be considerably increased and the development continued, until the highest lights appear as bare glass when the slide is laid on white paper. When the development is completed the slide is put for two or three minutes in about a five per cent. solution of alum, and then washed. The washing, after the alum, should be more complete than is actually necessary for paper pictures, for if any of it remains in the film it might crystallise out, and perhaps mar the brilliancy of the picture when seen on the screen. Varnishing is not actually necessary, but in some instances it gives somewhat more transparency to the image.

The method just described may seem a little more troublesome than that of the usual way of working the carbon process, but the trifling extra trouble is worth taking, as the substratum glass and the collodionised tissue free us from such little vexations as reticulation, washing away in the high-lights, etc., should the tissue not be in exactly the best working order. The picture will also bear somewhat rougher treatment, such as hotter water and the like, in the manipulation.

## THE BERLIN CONFERENCE ON COPYRIGHT LAW.

AFTER nearly five weeks' discussion, the Berlin Conference, which was called to revise the Berne Convention, as it is applied to literature and artistic productions, under which latter heading photographs are included, has at last come to an agreement. This was signed on the evening of Friday, November 13, in the Reichstag Building, in Berlin, by fifteen delegates from countries within the Union, and by twenty delegates from countries not yet included in the Union. This agreement has not yet been made public, but I have had the favour of glancing through a rough draft taken from it. This draft did not by any means profess to give the full wording of the text, yet I have been unable to discover in it any new conditions or other agreements that are likely to cause any particular change or alteration in the International Copyright Laws as they are at present applied to photography. As yet no provision has been made for fixing a uniform time limit to the duration of copyright after the decease of the holder within the various countries embraced in the Union. Therefore, we still have the fiasco of an international law which in one of its most important points is not international, since it fixes its time limits according to the whims or the advantage of the various countries which have agreed to it. Thus far the Berlin Conference may be said to have been a failure. It is only on reading between the lines that we discover that the delegates have not been empowered to settle this all-important clause on their own initiative, though as a result of their deliberations they have promised to see that the

matter receives the most careful attention of their respective Governments, and in this way at some future date some sort of an agreement may be come to. The proposal of the Berlin Convention to fix the copyright limit at a period of fifty years after the death of the copyright holder was objected to by some delegates on the ground that such a regulation would entail considerable changes in the existing copyright laws in their countries. Germany, for instance, would not agree to a longer period than thirty years, which is the present limit. Therefore, as I have said, the Conference came to the unsatisfactory conclusion that the individual delegates were to do their best to influence their Governments to arrive at some sort of uniformity. As this clause stands at present, it cannot be said to be strictly international, since we have the anomaly of an article going out of copyright in the country to which it originally belonged, and yet still retaining copyright in other countries embraced in the Union, or, as the case may be, *vice versa*.

In other respects the Berlin Conference has been able to clear up many doubtful and uncertain points, which will lead to a clearer understanding and the smoother working of the Berne Convention, since it rids its somewhat cumbersome machinery of many of the almost impossible obstacles that in many instances rendered it somewhat impracticable. When the new agreements come into operation in July, 1910, photographers will know more exactly in what position they stand regarding the law, and what amount of protection it affords



them. The Conference has widened the application of the International Copyright Act, increasing its usefulness, and at the same time it has defined more distinctly the various works which are protected within the meaning of the Act in the different countries. Over this point many disputes have arisen in the past which could only be settled by precedent, and even then not always satisfactorily.

#### Protection for Cinematographic Films.

Among the articles to which absolute protection is to be granted, photography and all kinds of choreographic art, meaning all allied arts or manufactures to photography, are the last mentioned. Against the inclusion of the works of applied arts under this head the British delegate raised objection, and consequently the matter still remains to be settled.

One point of which the Conference did not lose sight is the entirely new situation that has been brought about in various directions by the most recent advances in science. And this is a point which, if it does not directly concern photography—which is not yet quite clear—is at any rate immediately aimed at cinematography. The article expressly says that all copyright works are protected against copying or production by means of the cinematograph. The clause also goes so far as to prevent the copying or combining of protected incidents or scenes and the using of such as originals for cinematograph impressions, or pictures, or in any other way infringing such copyrights.

#### No Protection for the Journalistic Author.

It may be interesting to some to note in passing that the new reading of the law as it is applied to literature is that newspaper articles are not copyright, and may be copied or printed by those who choose to do so, the only condition being that they are to mention the source from which such articles are taken. Even the special articles by the foreign correspondents are free, though there was much dispute over this. In fact, the only things that are copyright in a newspaper are the serial novel and the short story. This seems like very unfair dealing with the journalist in making such a distinction between him and the short story writer, and is certain to call forth strong opposition from the members of the Fourth Estate, who will doubtless want to know why they are to be thus deprived of earning all the profits of what is often the result of days and weeks of weary toil.

The Berlin Conference is the second Conference that has taken place since the Convention was signed at Berne in 1886.

The last Conference was in Paris in 1896, by which it may be seen that a Conference is held almost every ten years, and it is practically certain that the next Conference, after the lapse of another ten years, will be held in London. At these Conferences the various difficulties that have been experienced in the working of the Copyright Act and the complications arising by the introduction of appliances and inventions introduced since the last meeting, are dealt with, and put as far as possible on a business footing. As I have already hinted, most of the new laws and regulations passed on this occasion refer to very trivial details, so far as the photographer, the postcard manufacturer, and all who employ photography in any shape or form for the production of pictures, are concerned. One great benefit which is sure to result from the Conference, and which should not be overlooked, is that since the lines of demarcation are more sharply defined it will be more easy to lay firm hold upon infringers. The knowledge of this on both sides will make the rights of copyright holders more than ever respected, and should succeed in putting an end to those flagrant cases of piracy that have only too frequently been brought to notice in the past.

#### Forthcoming Publications.

That the Conference was business-like in its methods is proved by the fact that it is going to be business-like in the distribution of its conclusions and deliberations. In order to prevent any overlapping or mistakes arising out of the complicity of Acts passed by various Conferences, which may in any possible manner be employed to the disadvantage or hindrance of the Convention terms, the Berlin Conference has decided to print in the languages of the various countries within the Union the new rules and regulations which were signed on Friday last. This new text is to replace all former texts or editions. By this means also the various countries which have not subscribed to the Berlin Conference on a few points will have an opportunity of comparing the old laws with the recent changes in them, and it is possible that this may lead to the adoption of some definite and united action in the settlement of these disputed clauses or innovations. Many things may happen between now and the ratification of the new agreements in 1910, and it is hoped that before then the different countries forming the Union will have come to some understanding and have found some common basis on which the Copyright Law may be established, and become more truly what it professes to be, an International Copyright Law.

RICHARD THIRSK.

## THE CARD-FILING SYSTEM FOR PROFESSIONAL PORTRAIT BUSINESS.

MANY of the most progressive commercial houses in the country have during the last few years supplanted the old system of keeping in books notes, addresses, and much other information, by the modern plan known as the "card filing" or "card index" system. This system could not possibly have found a place in the great mercantile offices without possessing advantages over the old-fashioned but familiar method, and therefore it appears only right that a short description should be given explaining the application of the system to the photographic business.

It is unfortunately a fact that the generality of studios are extremely lax in the matter of keeping records, but this may easily come about by the cumbersome nature of the usual account book, and the number required, besides the difficulties of finding an entry when made. These drawbacks are quite overcome in the card system, perhaps its greatest advantage being the ease with which any entry made at any time can

be instantly located, even though it be included with thousands of other items. Other advantages, almost as great, are the small space occupied and the fact that there is no waste room, and that all information relating to the different entries is together, and can be easily and immediately isolated from other matter without disturbing any unrequired information in any way whatever.

This great superiority over the book system, in which indexing would mean many blank pages, the impossibility of removing any item without destroying the book, and the probability of matter relating to the same subject being scattered over two or three volumes, is secured by placing each entry and the details connected with it on a card by itself, entirely separate from any other information. The cards are easily handled, and it is obvious that they can be easily destroyed without interfering with any of the others, so that any useless matter is immediately done away with, instead of occupying

room and increasing the difficulty of locating other items as dead matter does in a book. There is, however, as we said above, no difficulty in locating these cards, since it is perfectly easy to classify and sub-classify in any way required. This is done by collecting the cards into groups and placing this group in front of what are known as guide cards. The groups can then be divided, and yet again sub-divided, in such a way that it is possible in a collection of ten thousand cards to have them so indexed that only a group of ten or twenty need be glanced through to find any desired information.

#### The Card Index for Address File.

To obtain a more concrete example, suppose the information is a collection of customers' names and addresses. The card having these details filled in would be placed in front of a guide card bearing the same initial as the surname of the client. In a large business these names, alphabetically sorted, would be further placed in groups representing divisions, or even streets, of the town. This is seldom wanted, however, by photographers, the alphabetical list being quite sufficient for most businesses. Of course, the cards are placed in correct sequence in front of the guide cards—"Ace" before "Addy," for instance. Should the number of names under the simple letters become too numerous for easy reference, it is an easy matter to add additional guide cards, so that instead of one there may be any number from two to twenty-four. A sub-division of three would mean replacing the simple initial by three others, such as Ab, Ak, Al, An, Ao, Az. At the same time, it is not essential to divide the cards into twenty-five parts, but in the case of a few specialised cards numbering about fifty it might be divided into five only—A-C, D-G, H-L, M-R, S-Z. In fact, using only the alphabetical system, the most useful for photographers, there is no end to the guide cards that can be used, with consequent ease of reference, sets comprising divisions of the alphabet into 60, 120, up to 3,000 parts being obtainable. It is, however, perfectly feasible to classify names under profession, or, as mentioned above, counties, towns, parishes, and streets, and then again to alphabetically index. Say in a large collection of names to which advertising matter is to be forwarded, the names might be placed before guide cards bearing the name of street, and then each name sorted according to surname.

#### Requisites for Card Indexing.

Before going more fully into details, it will be as well to consider the requisites of the process. The cards themselves may be of any size, but are preferably 4 in. by 6 in. or 5 in. by 8 in., these being standard sizes, and may be of any thickness, ordinary postcard substance being very durable. These cards can be obtained from the printers, who will also rule and print, as this varies according to requirements. Some guide cards with a single broad blank tab standing about half an inch above the other cards, and also some alphabetical guides with five tabs to the length of the card, are wanted. A set of twelve monthly cards, and two or three sets of thirty-one daily cards are a great convenience, and expand the system in a most useful way, as will be shown hereafter.

These cards should be provided with a case that will just allow the card to be stood in perpendicularly. These can be made by the local carpenter, or obtained as trays or cabinets with several drawers from the firms dealing in these goods. If the standard sizes given are adhered to, there will be no difficulty about that. The home-made cases should, however, have a wedging device, so that when the drawers are not full the cards are still kept upright. This is not difficult to arrange. It is advisable, however, to purchase a well-made case, as they make a nice addition to an office outfit. One word more. The systems on the market are often provided with rods that go through the cards and hold them in position. This we find a needless and rather troublesome refinement.

#### Systematic Record of Studio Routine.

We wish to show in this article how (except for keeping petty cash and goods accounts) the whole details of a studio can be kept by the card system, so that every item, from the first making of an appointment until the negatives are packeted, can be placed together and be immediately referred to at any time.

The suggested card for this purpose is shown: we have found it very satisfactory, though minor details can, of course, be altered. When hands are continually changing, it might be advisable to have details, such as name, proofs sent, remarks, packets, etc., printed in the spaces, and we have for the purposes of the illustration entered them, though in the usual way they are not required.

Taking the card as an example, it is noted that on Monday, January 16, an appointment was made by Mrs. Chas. Watson, of 62, Crown Terrace, for 2.30 on Wednesday, the 18th. The name is entered as shown, so that it is easily found when filed with others in front of guide card W. This appointment card should now be placed in front of guide card Wednesday, other appointments being in front of the other six days referring to them. Of course, should no appointment be made, the name and address only need be written on card.

On Wednesday, the receptionist will take out all the cards for that day, and have a simple guide to the day's expected sittings. Whilst the sitter is in the dressing-room the operator will receive the card, and from it will see the name of his sitter; this in itself is a considerable advantage, for operators frequently never have this, and can only locate their subjects by descriptions such as "The lady who drops her aitches," or other

Watson Mr. Chas	Until 20 <sup>th</sup> 62 Crown Terrace
Mon Jan 16 06	Permanent: 17 Portoboro Road
Wednesday 2.30	Baling
Thursday 12.00	
Proofs promised Friday	Oval Cabinets 3/4 H
Sent	Light grad. Evening
Promised 2 Weeks	dress—first
Proofs ret. 2.30	Carbon 1/2 Imp
Packet 21 <sup>st</sup> 37	Mr. Bales. Mentioned
1/2 1/4 H 22	Miniature
Cream Mounts. Sepia Carb. Reduce 1/2	
hand. Position 4	Position 3 favourable.

Fig. 1.

equally vague indication. For his information the styles chosen have been filled in—oval cabinets, three-quarter and head, also the fact that there will be a change of costume; this saves much material, for often enough, after supposedly finishing a sitting, the client calmly mentions another dress. The query after carbon means that this is probable, but to be decided when order is given. The other matter in this space is occasionally valuable, for the receptionist can in this way give the operator hints picked up from the sitter. In this case he would take a somewhat similar Imperial (1-1) "on spec."

One often hears expressions of delight with certain types of work, such as coloured Cosways, semi-tints, enlargements, as in this case miniatures. This note will associate the most liked work with each customer, and when finishing the order a polite letter to say that "such and such a position will make a beautiful miniature, which we shall be glad to quote for," often means an increased order. When sending out booklets or personal letters, an appropriate one sent to old customers dealing with what they are known to like is worth



desire of the winner, and it is given for the best paper read or published during the year from July to July. Full particulars may be obtained from the Hon. Sec. of the London and Provincial Photographic Association at 43, Whitta Road, Manor Park, Essex.

## HINTS ON PORTRAITURE.

[In the 1909 "American Annual of Photography," just prepared with evident care by J. W. Little. There being such epitomised opinion is welcomed as an aid in their own study of portraiture, we may print here the first portion of the contribution, holding over the conclusion until next week.—Eds. "B.J."]

WITHOUT further preamble, I desire to explain that while many of the suggestions below are the result of personal experience, the greater part of them are from the experience of others, and have been drawn from numerous sources of which I hereby make a general acknowledgment. The preparation of this compilation, however unsatisfactory or incomplete it may be, has involved a considerable amount of labour, and I offer it to the readers of the "American Journal of Photography" in the hope that it may at least be found useful for occasional reference, even though many of the suggestions contained therein may not be unanimously accepted as good practice. Reference to photographing groups, genre subjects, and to the general subject of composition, has necessarily been omitted for lack of space.

The lines of a portrait should usually lead toward the face; they should also agree in sentiment with the character of the sitter; that is, they should be soft and flowing, or rugged and pronounced, as the subject may seem to require.

There should be variety and curves in all the lines of the figure. The arms should not hang loosely and slovenly, but should be arranged naturally and show opposition to the lines of the body and accessories. In standing portraits of women, the arms should usually be so placed as to show full curvature of the waist.

Shallow festoons, and arrangements following their lines, produce a light, cheerful effect, while deeply drooping festoons and constructions upon their lines, give a heavy and solemn effect. From this may be derived a hint as to the best methods of posing and the character of the accessories suitable for various classes of subjects.

Angles have a separating effect; hence angles entering deeply into a figure or group should often be avoided or toned down, or they may be obscured by drapery, etc. In other parts of the portrait pronounced or awkward angles may often be obscured by other means, as by a background which produces little contrast.

Right angles should usually be avoided in drapery and accessories, but may be admitted in architectural features. For this reason clothing of pronounced pattern, as large plaids or checks, is difficult to arrange satisfactorily.

The general arrangement of the drapery, like the pose, is often best waited for, rather than by the operator attempting to effect it.

The outlines of the figure should not be everywhere visible, but portions of it should blend into the background and shadows. Nothing should be allowed, however, to abruptly cut off any portion of it so as to make it appear too thin or as severed from the body.

A portrait should show connection with the sides of the picture, either positively or suggestively; that is, the mass of the figure or some portion of it should touch the sides or stretch in that direction, or it may be joined to the sides in some manner by the accessories. Where this is accomplished by a horizontal line extending across the portrait the line should appear to be continuous, and join with the figure at directly opposite sides, although it may run diagonally. The joining of the figure with the sides may also often be satisfied by the use of shadows or by a suitable background; the effect may even be produced by gradation in the background.

The spaces intervening between the portrait and the edges of the print should not be uniform or consist of rectangular or

triangular outlines, but should be broken up into irregular spaces, either by the pose of the figure or by the accessories.

In getting a good line in the head and shoulders, where space will permit and the lighting is under control, it is often better to travel around the sitter rather than to attempt to attain the result by having the sitter turn his head; or the sitter himself may be asked to move to various parts of the room.

When the head and body face the camera, the suggestion is of rest and repose. When turned in a different direction from the body, there is a suggestion of movement and animation; usually this is the more satisfactory.

### Balance: Symmetry.

If a figure is required for the middle of a panel, and the body is turned to one side, the head may be turned to the other to give balance and symmetry.

A three-quarter view of the head is sometimes preferable to a profile in a decorative picture.

In a bust portrait, the head may sometimes be inclined forward somewhat, to diminish the contrast between the size of the head and the bust, but a lens of short focus should not be used, or distortion will result.

Stout people are usually best posed more or less in profile, both for head and shoulders. A seven-eighths full face is usually satisfactory, but a three-quarter face is apt to look baggy. They should usually be taken sitting, with but little of the figure showing, and outlines subdued as much as possible by any means which may be expedient.

A fat face should be placed close to the light, in order to get strong shadows. A thin face should be placed farther from the light, to secure roundness; the lighting should also be broader.

Trimming close to a bust tends to make the person look larger by contrast of lines.

In taking full length portraits of men, the weight of the body should usually not rest equally on both feet.

Old men should usually be seated; young men may be standing.

Old age generally requires a more vigorous lighting than youth; that is, the lighting should be more contrasty.

Old people generally look better against dark backgrounds; young people against light backgrounds.

Give full exposure for old people and develop for softness.

### Child Portraiture.

In child portraiture, the operator should keep his own head on a level with the camera so that the child, which is usually inclined to look toward the operator, will not lift the eyes too high.

When children are taken standing be careful that the lower edge of the background or the baseboard of the wall does not come exactly on a level with the lower line of the dress, which is likely to occur with short dresses.

It is hard to pose children in any special position, and it is therefore usually better to allow them to assume natural poses for themselves and await a favourable opportunity before releasing the shutter.

In a well lighted studio, instantaneous photographs of children may be taken by using rapid plates, a lens working at large aperture, and a focal plane shutter.

Puppies, parrots, kittens, soap bubbles, toys, etc., are useful



attracting the attention of young children and diverting them from the fact of their being photographed.

A very young child, to avoid the necessity of holding it, may often be more easily photographed at home than in a studio, where the surroundings are strange to it. At home it may be propped up in its pillow or crib and more easily controlled though the lighting may not be so good.

As the element of mystery, so often useful in other compositions, is of little use in pictures of children, they may well be taken in a strongly lighted or open air studio.

To avoid frightening children, the camera may often be concealed from them or even located outside the studio proper.

Young people, or those without pronounced character, should or be too sharply focussed, but the focus should be rendered soft.

When small children are photographed at home, it is often better to place the camera directly in the window in order to get broad lighting and so lessen the exposure. The blind, if light coloured, may also be raised overhead and extended horizontally into the room and used as a reflector. Older persons with pronounced features which cannot be well lighted may often be treated in this way with advantage also. The lighting by this method is of course necessarily flat, but may be controlled somewhat by the use of light and dark screens. Generally speaking, this method of lighting is not recommended except in cases of emergency, as where the light is poor, the lens slow and necessarily of short focus to get the subject sufficiently near the window.

When photographing children outdoors, orthochromatic plates, and if possible a light ray filter, should be used to get better flesh rendering.

### Figure Portraits.

Tall people may be made to appear shorter by giving more space above the head. Short people may have the head nearer the top of the print if it is desired to conceal their shortness of stature.

It has been recommended that an effective way of treating short lady standing is to use a polished wood floor, the reflections upon which produce an elongation of the vertical lines of the figure; that the effect of polished wood can be produced by having the floor covered with linoleum and wetting it previous to the exposure. This might be useful, but is hardly always expedient.

If the dress is long enough, a short subject may stand on a block of wood or a book an inch or more in thickness to increase her height somewhat. Another way is to place beside her a low chair, which will increase her apparent height by comparison.

Correct drawing cannot be obtained under six feet distance between the subject and the camera, and this distance should be considerably greater if possible, particularly for large faces, to prevent distortion. Full figures in rooms look better if they can be placed at a distance of not less than fifteen feet, to give better perspective.

In raising or lowering the camera in taking full figures, due regard should be had to the effect on perspective; that is, producing a low or high horizon or vanishing-point.

The legs of men in a standing position are often better left out. Three-quarter views of men standing are also difficult.

In a seated figure the lines of the arms should not follow too closely the lines of the arms of the chair.

### Expression.

Never have bald heads face the camera squarely or look downward.

It has been recommended to use a blue ray screen over the lens when photographing a brunette dressed in white.

A dark person should usually have a stronger lighting than a person of light complexion.

Brunettes usually look better in broad lighting; blondes in white may look better in shadow lighting.

The hair and face should harmonise in the photograph; that is, a blonde face should not appear to have dark hair nor a brunette face to have light hair. This calls for discrimination in lighting and in the use of light screens, and in many cases the use of orthochromatic plates and ray filters.

For coloured people, use a very dark background.

If a fair person be placed in a strong light, the contrasts between the lighted and shadow sides of the face are increased. For the same reason the background should not be too dark.

It is difficult to get strength in the eyes of a fair person in full face position. Blue eyes should be in shadow if non-orthochromatic plates are used.

The eyes should be directed in the general direction toward which the head is turned; that is, the direction of the gaze should be natural and not contrariwise. Up-turned eyes give a stupid expression.

The eyes should not ordinarily look directly at the camera, even in full face position, but the subject should always have some object back of the camera upon which to fix the eyes, to prevent staring.

A good eye rest consists of a large portrait so arranged that it may be moved to any position. The print should not be one of fine detail, but rather one which can be well made out at a distance.

Prominent eyes should be turned away from the camera. Deep set eyes require diffused lighting.

Small eyes may look upward somewhat or the chin may be depressed, leaving the gaze horizontal; large eyes, contrarily.

If the eyes look downward, some claim that the hands should be included in the portrait.

If one eyebrow is higher than the other, it may be turned away from the camera so that its greater height will not be emphasised.

If one eye is larger than the other, usually take the larger eye, to give better perspective. If the lens is of short focus, however, the reverse should be done if the exposure is made at close range.

If the exposure be long enough, the subject may blink the eyes, to avoid a strained expression.

Where there is puffiness in the eye, or a double chin, rub on a little yellow powder with chamois skin. This may also be used effectively on a bald head or on white hair mixed with gray.

To get an effect of action, the exposure may be made before the subject is fully posed. The operator may use a long tube and keep the bulb in the hand behind the back and out of sight. If a three-quarter or other view is wanted he may move himself to the desired position and have the subject look toward him instead of toward the wall.

In lighting the face care must be exercised about pointing the camera upward or downward; that is, having it too high or too low, as it will make a great difference in the modelling.

A high forehead may be lowered by depressing the head and so having more of the hair show. Should the subject have an upturned nose, the camera may either be raised or the head depressed.

If the camera is too high and the subject close by, the head will appear disproportionately large, the neck short, and the shoulders raised, and the subject will have the appearance of falling forward in the portrait: if too low, the head will appear too small and as if receding.

On account of the nearer position of the camera, a large head will require a longer exposure than a full length portrait.

Place the camera rather high when it is desired to avoid emphasising the nostrils. Persons with snub noses should not have the head directed upward, while those with long noses

should not have the head directed downward. A drooping nose should be taken with the head slightly thrown back.

By skilful lighting, irregular or crooked noses may be straightened in the portrait. They should usually be in shadow. A crooked nose is more noticeable on a full face portrait; its curvature should be turned toward rather than away from the lens if taken three-quarters.

A broad nose should not be taken full face nor a hooked nose in profile. A round or flat nose should usually be taken in profile or three-quarters, as may seem best. A bridge or bony nose should be taken three-quarter and in shadow.

A strong shadow on the face cast by the nose suggests a large nose; absence of shadow tends to soften the nose.

Avoid top lighting with an aquiline nose.

The shadow cast by the nose should never quite meet the shadow on the shaded side of the face. Some light should be reflected by the cheek to throw light on the shaded side of the face.

A wide mouth should not be taken full face. If the lips turn down, the poise of the head should not be such as to exaggerate them. A projecting chin or a protruding lip should not be taken in profile.

Side face poses are best when dealing with people with large mouths, prominent ears, eyes of different sizes, or eyebrows of different levels. Full face poses are best in cases of small mouths, receding foreheads, and occasionally of badly proportioned noses.

People who do not close the mouth should be allowed to hold the mouth naturally, but it should be placed in shadow. When the teeth show, they should also usually be placed in shadow.

Large ears should not be taken full face, and the side toward the camera should be in shadow.

A subject much freckled may be put slightly out of focus to minimise retouching.

When the camera is brought close up there is a tendency to narrow the face; when it is farther back the face will look broader.

If head-rests are used, first pose the sitter, then adjust the head-rest to the sitter and not the sitter to the head-rest. If the lens will work at large aperture and the light is good, it is better to avoid the use of head-rests altogether.

Sharp elbow angles are difficult to pose satisfactorily.

The operator should not move from his position when a settled pose has been determined upon and arranged and he is ready to make the exposure, as this may disturb the subject.

In profiles a little more space may be left in front of the face in focussing or in trimming.

Profiles do not give as characteristic a likeness unless the face is dominated by the nose or the chin rather than by the eyes and mouth.

A stooping figure should not have the body taken in profile.

Full face portraits tend to show up any serious lack of symmetry in the features.

The swing back may be used to get the knees in focus without using a smaller stop, provided the subject is not too close to the camera. The side swing may be used to get the near shoulder in focus in large figure studies.

If the subject is too self-conscious, it is often a good rule for the operator to make a pretended exposure, when the subject will probably relax and the shutter may be released. Always try to engage the sitter in some subject in which he is interested, so that he may forget himself. His characteristic poses and gestures may be best observed before he is placed in front of the camera.

J. W. LITTLE.

(To be continued.)

## IMPROVEMENTS IN PLAIN PAPER PRINTS.

[The following article from the "Bulletin of Photography" gives the formulæ advised by a modern worker for a process of printing which was, in fact, about the earliest precursor of the self-toning paper of to-day. A very similar method was published in "Wilson's Mosaics" for 1888, and was discussed in the "British Journal" for April 27, 1906.—Eds. "B.J."]

I HAVE always been an admirer of plain paper prints, especially for their artistic qualities and for the variety of beautiful tones possible. I have tried the formulæ of Doctors Mitchell, Miller, and others, published in the "Bulletin of Photography," and can attest to the trustworthiness of the plans they recommend. I recently tried some so-called self-toning paper, but at once discarded it, as I was not able to get any approximation to the fine effects with toned plain paper prints; however, it suggested to me a method which gave most delicate neutral tones, and in return for the many valuable hints and suggestions I have had from your publication I send you my method.

It occurred to me (probably the idea is not new) to use gold as a salting agent, instead of using it afterwards in the toning bath, thereby saving time.

I found that the English drawing papers worked more delicately than Rive's or Saxe's, Whatman's paper especially. The French and German papers gave greater contrasts but less delicacy of tone, and as the taste in photographic art nowadays is to less contrasty work, I think the English paper is preferable, especially as I employ a paper which will stand the action of boiling water.

The salting solution is made in the following manner:—

Chloride of gold .....	60 gr.
Chloride of ammonium .....	120 gr.
Water .....	30 oz.

Float the paper on this bath in the usual way, and allow it to remain on the surface until it begins to flatten out, which

depends upon the temperature of the room and also upon the character of the paper, from half a minute to a minute and a half.

It is then to be hung up in a warm place, but if near the fire have a care not to place it too close up. The object is to get it dried as quickly as possible. Do not have it too dry, but rather we should say merely surface dry. Mark the salted side with a cross.

The exciting solution is made as follows:—A sixty-grain solution of ammonia-nitrate of silver, made by dissolving 3 oz. of nitrate of silver in 16 oz. of water and then converting it into ammonia-nitrate of silver by the careful addition of strong ammonia until the precipitate first formed is redissolved, but only redissolved. Do not get excess of ammonia. Then add 4 oz. more water, making in all 20 oz. of solution. If ammonia is in excess the prints will be grey and weak; if it is deficient the proofs will be hard and bronzed.

Float the salted paper on this solution from a minute and a half to three minutes, according to the same conditions which influence the time on the first solution. The paper must now be thoroughly and quickly dried in a warm room or near the fire, observing the same precautions as with drying the salted paper. The paper will keep about a week in winter time, but I prefer making just the quantity needed for the occasion. It is better to have the fresh. The proofs should be slightly over printed.

My fixing solution is made as follows:—To 20 oz. of water



add 5 oz. of hypo and 14 grs. of iodide of silver. (Iodide of silver can be purchased, of course, but it is easily made by adding iodide of potassium to nitrate of silver.) When the above formed solution is complete, add 1 oz. of the ammonia nitrate solution used in sensitising. Keep this fixing bath for a few hours to ripen and preserve it for future use, as it works better after several proofs have passed through it—from absorption of the gold, doubtlessly. All that is required is to fill up the amount with fresh solution. It ought to smell quite strongly of ammonia; if not, add a very small quantity.

After printing, place the prints, without washing, directly in the fixing solution, where they should remain for an hour. Take out, draw off, and lay each print in a tray singly, and pour boiling water over it. Treat each print to the hot bath and transfer to a second dish of hot water until all are finished.

Let the accumulated prints in the second dish lie for five minutes, then drain off the water and pour more hot water on them. Finally, wash in the usual way for half an hour. Of course, the boiling water takes all the size out of the paper, and, as we said, you see the necessity of good stock. The proofs are very tender, and must be handled carefully in drying. The removal of the size contributes to the delicacy of the effect.

The French and German papers do not require so much gold in the salting; as much as one-half the quantity will suffice, but the effect produced is not as delicate. You may object to this process because it is not very economical, but I believe that mean savings have no consideration to those who desire fine results. And I will say that you will be satisfied with the beautiful artistic tone this method yields.

C. W. MACFARLANE.

## CARBON PRINTING ON IVORY BY SINGLE TRANSFER.

[The following alternative method of transferring the carbon Debenham, is one which, we believe, has been occasionally employed in practice. In the hands of skilled workers it is capable of excellent service, but owing to the absence of "tooth" from the surface of the ivory, there is a danger of the print splitting off after colouring, particularly if much gum be used in the latter process. The use of a substratum on the ivory, as described in our article of October 16, avoids this risk.—Eds. "B.J."]

The appearance of an article recently in the "British Journal of Photography" on "Photographs on Ivory" reminds me that, although I have given it to a few, I have never published a method which I worked out some years since, and which may perhaps prove as useful to some others as it has been to me.

An objection that I found amongst artists to colouring on ivories that had received a carbon image by double transfer, or a transferred collodion image, was that it was not an ivory surface that was given them to work upon, but the surface of whatever medium was used for making the transfer adhere. When working by single transfer the objection does not arise, as the carbon tissue adheres without substratum: but in the ordinary way, when printing by single transfer, the ivory becomes hopelessly stained by the bichromate solution used in sensitising. To get over this difficulty I employ the method as follows:—

The tissue is sensitised in a solution containing not more than 2 per cent. of bichromate of potash. I have found, by the way, that a weak solution answers better with me than a strong one for any ordinary carbon printing. About a fourth part of the solution is stood aside, and ammonia added to the remainder until the solution becomes very pale yellow, when the remaining fourth part is added to it. For drying the tissue I squeegee it on to talced glass, and leave it there until wanted. The surface, being out of contact with the air, will keep good and fresh longer than if exposed. There is also another advantage of drying on glass, as the paper retains its expanded condition, and so will not give the same slight amount of distortion—by expansion in one direction more than the other—which takes place when tissue is dried in the air, and then washed before being placed on its support for development.

### The Reversed Negative.

The negative, when, as is usual, a left to right inversion of the image would be an objection, must be specially made (except in the case of a film negative), but this is not a serious objection generally, as an ivory picture has commonly to be of a different size from the original photograph, so that a copy negative must be made anyhow, and, now that plates are sent

out without emulsion messes on the back, it is easy to make a reversed negative by exposing through the glass; laying a piece of black paper, and then any waste plate, upon it, to keep off contact with the spring of the dark-slide. With the diaphragm used for copying, the slight displacement of focus will not generally be noticeable, but if thought necessary to allow for this, the camera back may be shifted towards the lens about half the thickness of the plate in use.

### Preparing the Safe Edge.

As the tissue has to be developed upon the ivory itself, it must have a safe edge, leaving the image a little smaller than the ivory; and this is conveniently secured as follows:—Fold a piece of black paper over the edge of the negative, making a sharp crease both at the back and front of the glass. Now, on the flap which is to lie on the film side, cut a small hole opposite the head. As this hole enables one to see what one is doing, it may be enlarged with the scissors until it is of the size of the ivory, and has the head properly adjusted to that position it is to occupy. The flap of paper which is to go on the front of the glass has now to have a hole cut in it opposite to that which has been made in the film-side flap, but one-eighth of an inch smaller all round, and the corners may be slightly rounded off. There should now be no difficulty in replacing the double mask on the negative, with the larger opening next the film, and occupying its proper place with regard to the position of the image.

### Printing and Developing.

The tissue is cut the exact size of the ivory, and it is well to avoid going to the extreme edge of the tissue as sensitised (cut away, say, an eighth of an inch before cutting the piece to be printed), and laid in the space which has been cut out of the mask. For printing, an actinometer must, of course, be used. I use one which I described some years since in the "B. J. Almanac," but one on very similar principles is now commercially supplied by the Autotype Company. When printed, the tissue is thoroughly washed, to remove all the soluble bichromate before placing it in contact with the ivory. This may take from half an hour to an hour. Of course, in this soaked condition there would be no adhesion to

the ivory, but the surplus water is removed by immersion in alcohol—methylated spirits will serve—and two changes may be necessary. When the tissue is seen to become first flat, and then to have the edges turned a little inwards, instead of outwards, it is judged that the water is sufficiently extracted; and then, after pressing in blotting-paper, it is rapidly rinsed until the greasy-looking lines almost disappear, and then laid upon the ivory. It is quickly placed in a double flap of two or three thicknesses of blotting-paper, and then put under pressure in an ordinary printing-frame for about half an hour, when it is developed in warm water in the ordinary way. If desired to have some parts of the lights, as painters sometimes

prefer, quite free from image, they may be gone over with a little cotton wool under the water.

It might answer to dry the tissue after washing out the bichromate, instead of extracting the water with alcohol. I have not tried this, as time was generally important, but I see no reason why it should not succeed.

It is, of course, quite possible that others may have worked out a similar process, and it may even have been published; but if so I am not aware of it, and anyhow, it is not so generally known that the present publication may not be of interest to some workers.

W. E. DEBENHAM.

## PHOTOGRAPHY IN THE STUDY OF THE STRUCTURE OF METAL SPECIMENS.

(From the "Scientific American.")

IN recent years an entirely new branch of practical science has grown up, to which the name of metallography has been given. A metallograph is a pictorial representation disclosing the structure of a metal specimen. It has long been known that much might be learned of the characteristics of, say, a piece of steel by the mere optical examination of the structure disclosed by a fracture. The difference in appearance of a fresh fracture of hardened and tempered razor steel from a fracture of, say, cast iron, is quite apparent to the eye. But in order to study this line of things with effectiveness, some means of recording these appearances was necessary. This has been filled by photography. An unmagnified representation—made by photography or otherwise—of a metallic fracture is called a macrograph. For the production of macrographs a vertical arrangement is especially desirable, as thus the sunlight may readily illumine the surface of a fracture. This specimen is placed, fracture side up, upon the table. The whole camera may be adjusted vertically along the post, rising from the post by means of a locking arrangement. The focusing is accomplished in connection with the rod on the upper right hand.

However, while the study of macrographs is no doubt of considerable importance, the present state of the study of metallic structures would have been hardly possible of attainment through them alone. The microscope has been brought into this line of research, and with the most important results. A magnified representation of a metallic fracture is called a micrograph.

Now it might seem to some that, with chemical analysis on one hand, and mechanical testing on the other, there would be little that could not be learned about metals by means of one or the other of these processes. That this is not the case may be seen from the fact that metallography is making a place for itself by the intrinsic value and uniqueness of its information. The chemist could tell us, no doubt, that a given specimen of steel contained just so much iron, so much carbon, so much silicon, and so on to the last minute impurity. The mechanical tester could inform us as to its capability of withstanding compression, of its resistance to tension, of its degree of hardness, and so on. Now if our piece of steel were an absolutely homogeneous, non-crystalline substance, the metallographist would probably have nothing to add. But steel and many other metals have a definite structure. In fact, the micrographs show that it is a most complex substance—not complex merely from the fact that it contains quite a number of different substances, but because it is an aggregation of substances which differ from each other in form and characteristics. In other words, steel is not a perfect chemical compound. Metallography not only informs us of this fact, but instructs us as to the form of the structure.

It is found, particularly with steels, that the structure varies with the heat treatment to which the specimen may have been subjected, with its chemical constitution, and with the mechanical operations which it has undergone. Thus the percentage of carbon influences the structure. A great variety of structural changes is brought about by heating, chilling, over-heating, and the like. Cast steel, steel hot forged under the hammer, and steel cold rolled, all differ in structure. The expert metallographist is able, in fact, to discern from

his metallographs a good deal as to what has happened to the steel under inspection.

Now it is not quite so easy a matter to make a micrograph as it is to make a macrograph. It is necessary to prepare the specimen for microscopic inspection; and it must be flat and highly polished as a preliminary to the final processes.

There are four methods of preparing the test piece. (1) It may be etched with acids and the like; (2) it may be polished in bas-relief; (3) it may be polished by "polish attack"; or (4) it may be tinted by heating.

To etch the surface, nitric acid, iodine, or picric acid may be used. The object is to affect differently the different substances making up the complex structure exposed by the fracture, with a view of creating different optical conditions, so that when exposed to a strong light the etched surface will disclose in the microphotograph light and dark effects corresponding to the structure. Ordinarily, the surface should be carefully polished before etching.

Polishing in bas-reliefs depends for its success upon differences in hardness of the different parts of the complex. Upon treating the specimen to a series of polishing operations—proceeding from a rough polishing with files to that obtainable with emery papers and rouge—it is possible to produce a surface free even from microscopic scratches, which will yet be unequally worn in detail although flat as a whole. This is considered a very fine method—especially applicable to certain cases. Thus, Professor Stoughton points out that this method is particularly advantageous in differentiating the graphite in pig iron, as it does not produce the discolorations to which an acid etching might give rise. In preparing his own specimens, he performs all the polishing operations, except that with the rouge, by hand. There are, however, one or more varieties of apparatus for accomplishing this by mechanical means.

The method of preparation called "polish attack," as used by F. Osmond, of Paris, consists in performing polishing operations by means of parchment which has been treated with a little ammonium nitrate in solution. This method is a finishing operation, and is performed after coarser means of polishing have been used.

The process of tinting by heat depends upon the fact that, upon application of warmth, the different constituents of the polished surface will oxidise differently, thus producing differentiating effects discernible by the photographic plate.

F. Osmond, of Paris, is one of the leading metallographers. He recommends the application of a series of finishing operations. Thus, after the preliminary preparation of the specimen, it may be treated to polishing in the bas-relief, then to "polish attack," and finally to the action of chemicals. Photomicrographs may be made after each stage.

However, whatever process or combination of processes is employed, the problem of preserving a record is solved by the use of a magnifying apparatus in combination with a photographic camera.

It seems to have been pretty well ascertained that the finest grain of pure carbon steels is developed at about the temperature of 1,300 deg. F. As this temperature is exceeded the size of the grain continually increases, and apparently with great regularity. If the



steel has been overheated, and has consequently developed a large grain, this serious fault may usually be corrected by cooling below the temperature just mentioned and then reheating to some point above it. When the heat of 1,300 deg. F. is just reached, the fine grain begins to form. If the steel has a carbon percentage of precisely 0.9, a few degrees in excess will be sufficient ordinarily to cure the large-grained structure. But if the carbon is much below 0.9 then the reheating will have to go considerably beyond, 0.4 carbon requiring a temperature of about 1,470 deg. F. If the carbon percentage is quite low it may be necessary to heat to 1,600 deg. F., or somewhat beyond. The reason for heating beyond 1,300 deg. F. is that steels having less than 0.9 carbon are composite in their structure, and reheating to 1,300 deg. F. does not uniformly affect the whole mass. The old grain size (developed by the over-heating) tends to persist. If the steel has more than 0.9 carbon, the necessity for heating above about 1,300 deg. F. to effect restoration is not pressing—the imperfection from want of uniformity being but slight. It is evident that the new science of metallography is eminently adapted for investigation into this whole matter of size of grain.

J. F. SPRINGER.

#### THE BLACKPOOL PROFESSIONAL PHOTOGRAPHERS' ASSOCIATION.

A meeting of Blackpool professional photographers, held in the King Edward VII. Hotel, on Friday, November 13, it was unanimously resolved to form an association, to be called the Blackpool Professional Association, its object being to protect the profession against itinerants who flock into the town in the summer months, and who, without sharing in the expenses of the town, reap all the benefit to be had in the busy season and then clear out, thus doing great injustice to all the photographers who are paying rates and taxes in the borough of Blackpool.

The subscription was fixed at the nominal sum of 2s. 6d. per annum, and all members to join the Blackpool Tradesmen's Association, the subscription for the latter 5s. per annum extra.

The following gentlemen enrolled themselves as members and paid their subscriptions:—

Bland Wolfenden.  
C. F. Wiggins.  
H. Wiggins.  
H. and W. Cooper Bros.  
S. Wolstenholme.  
J. P. Bamber.  
W. J. Gregson and Tansey.  
Smith and Whittaker.  
E. E. Hindley.  
J. Watson.  
J. Eastwood.

Mr. Bland Wolfenden was unanimously elected as president, and Mr. C. F. Wiggins as vice-president.

Mr. H. Cooper as hon. treasurer.

Mr. H. Wiggins as hon. secretary.

A committee was also formed of the following gentlemen:—J. Smith, E. E. Hindley, J. B. Bamber, J. W. Gregson, Ellis Wolstenholme, W. Buckley.

#### FORTHCOMING EXHIBITIONS.

December 9 to 12.—Bolton Amateur Photographic Society. Secs., A. N. H. Wyde and J. Bailey, 25, Croston Street, Bolton.

December 30 to January 2.—Chelmsford Photographic Society. Entries close December 17. Sec., M. J. Morison, Savernake Lodge, Chelmsford.

December, 1908, to January, 1909.—Kiew International Photographic. Sec., S. T. Horowitz, Technical Society, Kreshtchatik, 10, Kiew, Russia.

1909.

January 1 to 9.—Scottish National Photographic Salon. Entries close December 7. Sec., Robert Telfer, 138, Glasgow Road, Wishaw.

January 6 to 27.—Northern Photographic (Manchester). Entries close December 11, 1908. Sec., S. L. Coulthurst, Broad Oak Road, Worsley, Manchester.

February 13 to March 15.—South London Photographic Society. Sec., H. Creighton Beckett, 44, Edith Road, Peckham, S.E.

## Photo-Mechanical Notes.

### Half-tone Blocks Direct in the Camera.

According to the description given by Max Ullmann, of 16, Thalstrasse, Zwickau, Germany, the following process is used for the preparation of half-tone or line blocks by exposure of the printing plate in the camera in the first instance. The process is the subject of a patent (No. 21,481, 1907).

The invention relates to a process for producing printing blocks for line drawings "half-tone," and other half-tone pictures decomposed into lines or points after the style of line drawings, in which process the production is effected by direct exposure in the photographic camera, namely, by photographing the object by means of lens and camera direct on the printing plate, which has been coated with a sensitive film of the composition given below. The plate after exposure is developed in the known manner and then serves as printing block. The metal printing plates are thinly coated with a mixture of previously liquefied gelatine and bichromate of ammonium (with ammonia added), which is allowed to harden or set. After exposure the plate is developed in a bath consisting of nitric acid (4 per cent.) and is then ready for use as a printing block.

The usual method is now followed—i.e., the plate is dried, has transfer colouring medium rolled on to it and is then washed. The places affected by the light do not take the colouring medium, while the latter adheres to the places that were not affected by the light, so that the plates can be printed from direct.

The inventor states that the separate working stages in the preparation of the printing plate as above set forth are known *per se*; and the invention consists in combining them in the manner herein stated with a view to obtaining a specially good result. The process of the present invention has the advantage that the metal plates are at least as easy to handle as glass plates and that they are adapted to print from direct—i.e., without a previous transfer stage.

If the printing plate is to be used for lithographic printing, it can be made use of without further treatment. If it is to be used for book printing it has to be etched in the known manner after the application of the colouring medium.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for Patents have been received between November 9 and November 14.

**MOUNTS.**—No. 23,977. Improvements in frames and mounts for photographs and the like. Gerald Robinson and Herbert Willand Robinson, 128, Colmore Row, Birmingham.

**FILMS.**—No. 24,066. Improved device for securing and linking-up photographic films, papers and the like to and upon frames, spools or supports. Harrison Ward, 22a, Duntshill Road, Earlsfield, Surrey.

**DEVELOPMENT.**—No. 24,429. Improved developing dish for negatives and flat films. Charles Noel Wedlake, 147, Clapham Road, Surrey.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

**MOUNTING P.O.P. PRINTS.**—No. 23,762. 1907. The invention relates to a process for mounting gelatine emulsion photographic paper, prints, and its object is to preserve the lustre and also save the expense and inconvenience of card mounts. The superior tone of collodion or platinotypes papers is obtained.

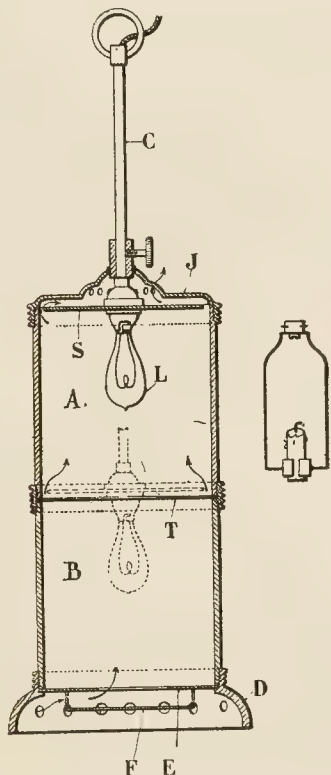
After the prints have been completed glass plates are prepared to receive them and cleansed thoroughly, care being taken, of course, to observe that there are no flaws in the plates. Each print is then taken singly and dipped in clean water at a temperature of about 70 deg., and is then laid on the glass plate. After the print has been applied to the glass plate it is subjected

to pressure or a squeegee operation by means of a suitable implement which may be made of any suitable material, such as rubber or celluloid, and of a convenient form or shape to adapt it to squeegee out all the water and also the air between the print and the glass plate, and when this latter operation of removing the water and air has been completed, the glass plate with the print thereon is placed to one side and permitted to dry.

If the foregoing process is fully carried out, the result will be a picture having a tone similar to that printed out on collodion or platinotype paper with the advantage of adherence to the glass plate.

The inventor states that he is aware that it has been proposed to mount photographic prints on glass by slightly warming the glass, putting some warm melted gelatine on it with a brush, placing the print on the glass face downwards, rubbing and pressing it with any suitable tool until air bubbles and marks have disappeared, and allowing it to remain until dry. Harry Schmidt, 406, Broadway, Council Bluffs, Pottawattamie, Iowa, U.S.A.

**DARK ROOM LAMPS.**—No. 12,649. 1908. This invention relates to photographic dark room lamps and to that class of lamp in which two chambers or compartments arranged in juxtaposition to each other are provided with a lamp or candle capable of being moved from one compartment to another for the purpose of limiting the



rays of light to escape through either of the glasses of the compartments one at a time, the glasses being of different colour, such as red and yellow, for the purposes well known in photography. The invention consists of an improved form of lamp having the advantages of compactness, ease of manipulation, good appearance and simple construction.

In constructing the lamp two glass cylinders are arranged one above the other, the lower one being fitted into a base and the upper one closed by a cap having fitted to it a rod capable of being slid backwards and forwards through the cap and held at any required position therein, the rod supporting an electric or other light and being provided with a screen which can be used to confine the light to the lower of the two chambers.

The two glass cylinders are held together by an external band as by providing it with an inside thread which will fit an external thread on the two ends of the cylinders.

It will be seen from the drawing that the case of the lamp consists of two principal parts A and B which are formed from glass cylinders, A being of yellow colour and B red. The cylinder is fitted into the base D and has bottom plate E and light-proof cap F, the base being furnished with air holes and the cylinder A is provided with a cap J also furnished with air holes and having a hole through which the rod C is fitted and in which it can slide, the rod carrying the lamp L and shade S.

A ring is fitted around both the adjoining ends of the two cylinders and serves to hold the same together, a darkening ring T being also provided to ensure the light being entirely cut off from the upper chamber of the lamp when in lowered position as shown in dotted lines.

As the lower cylinder is of red glass it is immaterial when the lamp is raised whether the light shines through it as well as through the upper yellow glass. Max Muthel, 69, Faubourg Saint Martin, Paris.

**PHOTOGRAPHIC FILMS.**—No. 8,875. 1908. The subject of the invention is an improved flexible plate, or film, for photographic purposes, which in addition to being exceedingly durable and cheap to manufacture, is of such nature that the shadows cast in printing by the grain or structure of the material employed as support for the sensitive medium are caused to vanish, owing to dispersion of the light.

A basis of paper, fabric, or other suitable material is used. To this support is applied an "optically glassy" layer consisting of a mass of dextrine, or some kind of glue, resin, varnish, or other similarly diaphanous substance. This "hyaline" layer serves to disperse the light in printing out, and in order that the shadows due to the texture or grain of the support may be effectually diffused, it is found that the layer should be of at least the same thickness as the base which supports it. The sensitive material is distributed over the intermediate glassy layer.

By means of the invention the disadvantages attending the use of paper or like films, owing to the shadows arising in printing, are thus entirely obviated. At the same time the negatives given are free from halation. Max Hansen, 217, rue St. Honoré, Paris.

**CINEMATOGRAPH MECHANISM.**—No. 24,157. 1907. The invention relates to cinematograph projectors or cameras, wherein the film is fed past a mask or aperture through which the light passes, and to that kind wherein the film is kept frictionally tight by variable spring pressure, the object of the invention being to improve this class of device by rendering it more durable and effective than heretofore. A hinged door has two longitudinal grooves in which two bars lie. The bars, hereinafter termed "pressure bars," are kept in position by means of two or more screws on the ends. In the grooves four holes are provided. On the outer side of the doors are two crossbars, each provided with two pins which project through each pair of holes, and press upon the two pressure bars through the medium of a centrally mounted spring which is adjustable by means of a screw and nut. The framework of which the door is hinged is also grooved out. In the groove a bar with a mask the same size as a picture is laid, which is kept in position by means of a screw and it made removable for convenience of cleaning. Leo Kamm, 27, Powell Street, Goswell Road, London, E.C.

## New Trade Names.

**ENSYNODS.**—No. 304,684. Chemicals used in photography. Houghton & Co. Ltd., 88 and 89, High Holborn, London, W.C., manufacturers of and dealers in photographic, optical and scientific apparatus. July 14, 1908.

**HAKO.**—No. 306,241. Chemical substances used in photography but not including enamels in the nature of paint and varnish included in this class, and not including any goods of a like kind to any of these excluded goods. Chemische Fabrik auf Actien (vorm. E. Schering), 170, Müllerstrasse, Berlin, Germany, manufacturers. September 16, 1908.

**SATRALBIN.**—No. 306,243. Chemical substances used in photography. Chemische Fabrik auf Actien (vorm. E. Schering), 170,



Müllerstrasse, Berlin, Germany, manufacturers. September 16, 1908.

WYNA.—No. 304,686. Photographic papers. Houghtons Ltd., 88 and 89, High Holborn, London, W.C., manufacturers of and dealers in photographic, optical and scientific apparatus. July 14, 1908.

AKO.—No. 306,242. Photographic paper. Chemische Fabrik auf Actien (vorm. E. Schering), 170, Müllerstrasse, Berlin, Germany, manufacturers. September 16, 1908.

WALBIN.—No. 306,244. Photographic paper. Chemische Fabrik auf Actien (vorm. E. Schering), 170, Müllerstrasse, Berlin, Germany, manufacturers. September 16, 1908.

## Analecta.

*Extracts from our weekly and monthly contemporaries.*

### Improved "Blue" Printing.

My own method of working this process (writes Mr. Leslie Truss in *The Amateur Photographer and Photographic News*) for November 1908, as described below, while embracing far more time and trouble, yet so vastly superior to the usual way in results, if not in rapidity, that I have stuck to it firmly. The method of procedure is as follows:—The negative print (i.e., undeveloped), which should be slightly darker than is usually necessary, on being removed from the bath must be first bleached for about five minutes in the following:—

Water .....	8 oz.
Liquid ammonia .....	40 minims.

The ammonia should be added just previous to use and after immersion. The print will be found to be a pale grey positive; this should be well washed for another five minutes in running water and then developed in

Citric acid .....	200 grs.
Water .....	8 oz.

Development will be almost instantaneous, the colour being a decided green at first, and the blue print fully developed in about half a minute, after which ten minutes' washing should ensue. I attempted to stop development while the colour was in the green stage, but the extreme rapidity of action in the acid bath entirely prevented this. The finished print will be found to be quite equal in brilliancy to O.P., the high lights being clear and unstained, and detail showing well up in the half-tones. In conclusion, I may state that either citric acid or acetic, in concentrated solution, may be used in place of citric acid, but I have found that the latter gives the most brilliant results and is altogether the cleanest working bath of the three.

### Splitting a Sheet of Paper.

Mr. W. E. Hickling, writing in "*Photography and Focus*" for November 24 on copying by contact from both sides of a sheet of printed matter, describes a method by which the paper may be split in two, thus leaving the printed matter on one side only. "Two pieces of smooth strong calico are procured, each a little larger than the paper to be operated upon, and also some good strong glue, care being taken to ensure that it is evenly covered, particularly that no portion of the surface is left uncovered. Then immediately, before the glue sets, one piece of the calico is laid on the glued surface of the paper and pressed down into close contact with the paper in every part. The other piece of paper and calico are then turned over, and the other side of the paper is coated in the same manner with the glue. The other sheet of calico is then applied to it in exactly the same manner. The whole sheet of paper and two sheets of calico is now left to set and dry under slight pressure. When it is thoroughly dry the two pieces of calico are pulled apart evenly, and if the operation has been carefully performed, one half of the paper will remain attached to each of the two pieces of calico. It now only remains to soak off the paper from the calico in tepid water and to dry them. The surface of the paper is improved by being ironed with a warm iron (not hot enough to scorch the paper)."

## New Books.

"Life Histories of Familiar Plants." By John L. Ward. London: Cassell and Co., Ltd. 6s.

A most entertaining book this, of the development and habits of plants. The author's aim is to interest lay readers in the scientific study of plant life, and this he has certainly attained in a way which cannot fail to attract the amateur student of nature without wearying with strings of Latin names; the chapters contrive to impart a great deal of real instruction in the processes upon which depend the characteristics and properties of our familiar flowers. The author's photographs and photo-micrographs do him credit, both as an illustrator and photographer, and we can commend the volume as a gift-book of natural history, which owes its interest to the writer's sense of humour and to his appreciation of the difficulty of the non-botanical person.

"La Photographie." By G. Chicandard. Paris: O. Doin et Fils. Five francs.

This book is quite distinct among both French and English textbooks of photography. It is indeed not an instruction manual, but a précis of photographic processes past and present, with particulars as to date and author in almost every case, all very carefully arranged according to the Dewey decimal classification. This general review of photography past and present is to be amplified in necessary directions by the publication of other volumes uniform with the one before us, and dealing in the same systematic way with special sectional treatises. Among the subjects announced to be dealt with this way are: Negative making, positive printing, colour photography, photography by artificial light, micro- and macro-photography, stereoscopic photography, and photo-mechanical reproduction processes. We do not know whether in each of these cases the volume will partake of an historical character, but the arrangement of the book now before us can hardly be improved upon. It conveys a very large amount of information, tersely expressed, though it is not to be recommended to the reader unable to distinguish from the current and the obsolete.

## New Apparatus, &c.

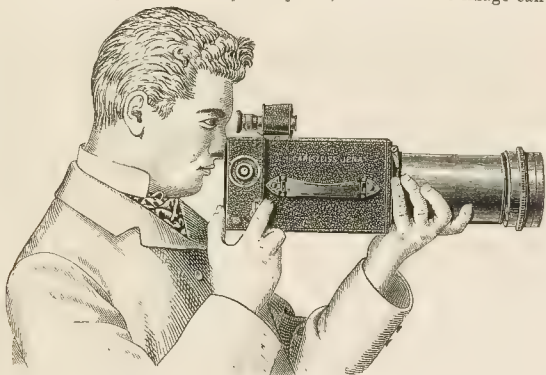
The Zeiss Tele-Camera. Made by Carl Zeiss, Jena, and 29, Margaret Street, London, W.

This camera is an instrument specially made for natural history, landscape, and portrait work, and permits of advantage being taken of the new Zeiss telephoto lens. The camera consists of a metal leather-covered case measuring  $8\frac{1}{2} \times 5 \times 6$  inches, and fitted with the "Palmos" focal-plane shutter. The lens is mounted on a tube about 9½ inches in length in such a way that excepting the portion carrying the iris diaphragm and the adjustment for objects at various distances the tube pushes inside the camera leaving a projecting portion only



2 inches deep. This adjustment is very rapidly made simply by raising the spring catch and then turning the clamp seen in the illustration. The weight is thus very nicely distributed for carrying, whilst the bushes, serving to fix the camera to a tripod, are placed right in the front, so that the weight is again fairly equally distributed when the camera is in use. The production of a telephoto lens at the large working aperture of  $f/10$  and a focal length of 32 inches is surely a triumph, when it is considered that the distance from lens-hood to plate is only 17 inches, whilst with the camera closed this is reduced to 10½ inches. The camera is naturally

weighty, but for special long-distance work of all kinds is a remarkably fine instrument. The adjustment for focussing on distant objects provides a range from infinity to 5 yards, but while the image can be



focussed on the ground glass there is also provided a binocular field glass of four magnifications which serves as a finder. The price of the camera complete with lens, shutter, and finder is £40.

Lantern-slides of Famous Pictures of the World. Sold by W. Butcher and Sons, Camera House, Farringdon Avenue, London, E.C.

In this series of coloured slides Messrs. Butcher have provided at a most popular price reproductions of the most notable masterpieces of classical painters. The set includes altogether eighty different



subjects selected to represent the great schools and periods of painting. The lantern slide, from its nature, cannot render the characteristic appearance of many paintings, but the general results obtained by the lithographic process of reproduction are for the most part of a kind to give a good general idea of the various paintings, and to encourage the study of the many manuals on art. The choice of subjects, it should be said, is one which renders the slides suitable for any audience. The complete 80 slides are issued at the price



of 40s., inclusive of lecture and an excellent polished mahogany box for transit. Sets of eight slides are likewise supplied at the price of 4s

## New Materials, &c.

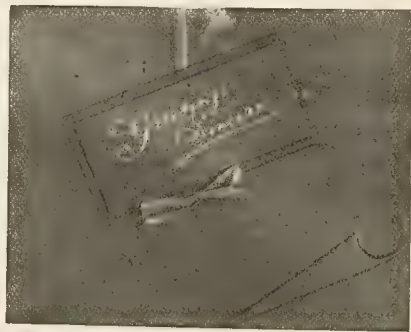
"Teb" Christmas Mounts. Sold by W. Butcher and Sons, Camera House, Farringdon Avenue, London, E.C.

That Messrs. Butcher have both recognised and appreciated the ever-increasing demand of photographers for Christmas mounts of dainty colouring, with simple lettering and design, is evidenced by an inspection of this new series recently placed by them on the



market. The cards are two-fold, of both the paste-on and slip varieties, and can be obtained with openings to take pictures of a size and shape, from quarter-plate to midget, at prices varying from 12s. to 24s. per gross; also in boxes containing 15, 12, or 10 assortments of the midget, carte-de-visite, and quarter-plate sizes respectively. Any of these cards can also be supplied as private greeting cards, the greeting being printed on a white inset leaf at a small extra charge, which varies according to whether the lettering is black or gold.

We would also draw special attention to the "Linette" series of calendars, which Messrs. Butcher are this year placing on the market, in addition to the well-known "Primus" calendars. The



former are made with stiff back and loose, apron-like front, containing a cut-out opening, this form having the obvious advantage that the photographer is enabled to mount his prints perfectly flat, a task which presents considerable difficulty with the usual slip-style of calendar. These "Linette" calendars are made in six varieties, and three sizes to take pictures 3 x 2, quarter-plate (upright) and quarter-plate circle, the price of all three being 24s. per gross.

### CATALOGUES AND TRADE NOTICES.

SECONDHAND APPARATUS.—The November-December bargain list of the City Sale and Exchange reaches us from 54, Lime Street, London, E.C. It is a large 16-page list, describing chiefly hand and field cameras and enlarging and projection lanterns. The list is sent free on application.



# Meetings of Societies.

## MEETINGS OF SOCIETIES FOR NEXT WEEK.

SATURDAY, NOVEMBER 28.

Camera Club. "A.P." Prize Slides.

MONDAY, NOVEMBER 30.

Photographic Society. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.  
 Photographic Society. Five-minute Papers by Members.  
 and District Photographic Society. "The Photographic Lens." C. P. Goerz.  
 London Photographic Society. "Trimming and Mounting." W. Llewellyn White.  
 Camera Club. "The Carbon Process." A. E. Henley.  
 and District Photographic Society. C. P. Goerz Co.'s Prize Slides.

TUESDAY, DECEMBER 1.

Photographic Society. The Annual Dinner.  
 Birmingham Photographic Society. Midland Photographic Federation, Circulating Portfolio.  
 Photographic Society. "Natural History Photography." Riley Fortune.  
 Camera Club. Exhibition of Thornton-Pickard Prize Slides and Apparatus. R. Heskech.  
 and District Camera Club. Lecture for Beginners. W. Duxbury.  
 Camera Club. "A Few Old Sussex Churches." John King.  
 Camera Club. "Lantern Slide Making." J. Woodger.  
 Photographic Society. "Mounting." A. J. Linford.  
 Amateur Photographic Society. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.

WEDNESDAY, DECEMBER 2.

Birmingham Photographic Society. "Photography as a Help to the Study of Ornithology." Rev. H. N. Bonar.  
 Camera Club. "Oil and Gum." A. W. Hill.  
 and District Photographic Society. Members' Slides.  
 Suburban Photographic Society. "Some Ancient Churches of Essex." C. Forbes.  
 Camera Club. Lantern Evening.  
 Polytechnic Photographic Society. "Various Novel Lighting Effects." H. Essenhigh Corke.  
 Camera Club. "Real Orthochromatism." S. E. Bottomley.  
 Photographic Society. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.

THURSDAY, DECEMBER 3.

Photographic Society, Y.M.C.A. "Bromide Toning." T. Hartley.  
 Camera Club. Members' Lantern Slides.  
 Amateur Photographic Association. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.  
 Photographic Association. "Composition and Selection." J. Campbell.  
 and District Camera Club. "Afar in the Fatherland." W. L. F. Wastell.

## ROYAL PHOTOGRAPHIC SOCIETY.

Meeting held November 24. Mr. W. Bickerton lectured upon "Wild Birds and their Ways," illustrating an interesting discourse upon a few of the less common British birds with a series of 120 lantern slide photographs. Mr. Bickerton explained that his natural history photography was done in the few leisure hours allowed by his business pursuits. As shown by the large number of photographs of a very small number of birds, his aim had been recording the habits of his subjects in a good many aspects, and in this way he was able to keep his audience interested in the characteristic doings of some of the less familiar wild birds.

LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION. — At the meeting held on Thursday, November 19, the Rev. F. C. Lambert presiding in the chair, Mr. Ernest Marriage gave a lecture upon "Telephotography." He said that many thought that the telephoto lens was only useful for distant views, but in practice it would be found that it was a most useful instrument to have for near objects, as for instance the taking of water plants, where one would in the ordinary way have to put up with them being either of a small nature or the other hand have to wade up to the knees to get the view that was wanted. To take a small part of a negative taken with the ordinary lens and to enlarge it did not give the same effective picture as did the telephoto negative taken direct, owing to the large falling in sharpness in the enlargement, which would be rendered crisp and sharp in the direct print. A large aperture lens should be used with the negative lens if at all possible, owing to the lengthened exposure required when doing telephoto work. With a good telephoto attachment the amount of magnification could be varied at the will of the user, and thus varying effects could be obtained. A point to be remembered was that the camera intended for use with the telephoto lens should be fitted with a larger amount of swing to the

back than was usually fitted, owing to the fact that it was often desirable to take in parts of a building that were high up, and without the great amount of swing it would not be possible to get the lines true. At the same time he found that the old rule of keeping the back perpendicular did not hold good for telephoto work, as it was often the case that when the back was so used that the lines would be out of truth, the only way was to examine the image on the screen and to swing the back until one got what was wanted. Caution should be exercised when calculating the exposures, as to the scale marked upon the sliding tube of the lens. These were supposed to give the magnifications, but were a delusion and a snare; they could only be right for one point, or distance, and should therefore not be taken any notice of. An easy way of calculating the exposure, the lecturer said, was to first find the magnification, by dividing the distance from the negative lens to the focussing screen by the focal length of the negative lens used, and then add 1 to the result. This would give the magnification. To find the F value or intensity of the lens, multiply the stop in the positive lens by the magnification, when one would get the F value of the lens complete.

SOUTH SUBURBAN CAMERA CLUB.—Meeting held November 18. Mr. J. Cyril Crowley lectured on "The Haunts, Habits, and Homes of a Few Wild Birds." Mr. Crowley showed a fine set of over 100 slides of birds and their nests, from the robin of the towns to the rare feathered frequenters of the Western Hebrides. To get some of these photographs he had to be temporarily marooned on a desert isle, where he built the hut that sheltered him from the inquisitive gaze of his unconscious siter. Others were secured while dangling on a rope from a precipitous cliff. One or two were taken by walking up to where the bird lay low, afraid to move lest her nest should be discovered; and in one case, a perch was provided in a prominent place, on which the perky little model posed of her own accord. A hearty vote of thanks was accorded to the lecturer at the close of an interesting evening.

BIRMINGHAM PHOTOGRAPHIC SOCIETY.—Mr. E. G. Collins lectured "On Making Photographic Christmas Cards." Photographic Christmas cards can roughly be divided into two classes. First, the simple mounting of suitable prints on a tinted paper or cardboard support, and then printing or writing the greeting by hand. Second, including all those cards which are entirely photographic, consisting of a photograph of a design or a combination of photograph and greeting. To the artistic photographer especially this opens out a field of work the possibilities of which are unlimited. Once a satisfactory design is obtained we have only to make a negative and print off the number required by any process. In making the negative a great saving of time is effected by making a rough copying stand with runners, on which an easel or support for the design moves to and from the camera, which is fixed. It is important to notice that the lines are kept absolutely true and square, and the design should be ruled off to a size bearing a relative proportion to the size of printing paper to be used. Having focussed the design at full aperture it is better to stop down a little, to secure better definition all over. As regards the plate to be used, the best is one of medium speed or an iso, and it should be backed to get the line work clear. Develop with a developer giving good density—e.g., hydroquinone or pyro-soda. If full density is not obtained you will have to mask the edges of the negative while printing to secure a clean print. Printing is best done on thick, ordinary, or cream bromide, or on a gaslight paper. Of the latter class "Gravura" is very suitable, as you have the power to alter the tone of the print. With normal development it gives a pure black, but by varying the developer and exposure tones can be got from sepia to red chalk. Dekko matte antique is a pleasing tinted gaslight paper, of heavy substance, suitable for cards.

If a folded card is desired, the smallest camera that can be used with success is half-plate. It can, however, be done without by making two quarter-plate negatives, one for picture and one for greeting. Care will have to be taken to mask the junction of the two while printing. For printing the greeting on cards of the first class, if the tinted mount is of a lighter colour, we may use ordinary or Indian ink, or if a softer effect is needed, Prout's brown. For all dark mounts nothing is better than Chinese white. It is mixed with water to a fairly thick consistence, and put on with a soft easy-running pen. A quarter-plate negative may be printed on to a half-plate paper by masking the whole of the paper, except where the print is to be. The greeting may then be written with ink in the usual way.

## Commercial & Legal Intelligence.

**A NORWICH BANKRUPTCY.**—The affairs of Edgar Wilkinson, residing at 218, College Road, Eaton, Norwich, and carrying on business at 1, The Arcade, Norwich, came before the Norwich Bankruptcy Court last week. The statement of affairs showed gross liabilities £1,092 16s. 3d., expected to rank £473 9s. 4d., deficiency £84 8s. 4d. In reply to the Official Receiver, debtor said he had been trading as a photographer at the Arcade. Some years ago he was assistant at Cambridge, and 22 years ago he started at that place with another assistant named Scott. He put about £150 into the business. The partnership was dissolved three years later, and debtor drew out £200. The dissolution was not gazetted. Leaving Cambridge he went to Higher Broughton, where he joined his brother, also a photographer. His father had left him some money, and he put £400 into the new business. The partnership lasted for six years, and debtor was paid out. He took less to go out than he paid to go in. The dissolution was not gazetted. Through an advertisement he bought the business of Mr. Howard Heath, of Rampant Horse Street, Norwich, for £200. He then possessed £300 and his furniture. That was in 1894. He traded at Rampant Horse Street until 1902, and was fairly successful. In June, 1902, he moved to the Arcade, at a rent of £266. He sublet a portion for £60, so his rent stood at £206. He moved with the idea of extending his business, but the move had not answered his expectations. He had never taken stock, and had kept no proper books of account for the last seven years. Since 1902 the competition had been very severe, cheap photographers had come into the city, and chemists had supplied photographic materials. He first became aware of his insolvency by reason of the pressure of his creditors. But for the difficulties raised by the owners of the Arcade he could have disposed of the remainder of his lease to advantage. Had he carried this through he would have met all his creditors. That was his last hope, and when it fell through he filed his petition. Whatever loss there had been had arisen in his business. He had not neglected his business, but had given it the whole of his attention night and day. The examination was closed.

**A MANCHESTER BANKRUPTCY.**—Max Muenzer, lately residing in Moss Lane East, Manchester, was examined at the Manchester Bankruptcy Court, last week, before Mr. Registrar Atkinson. Debtor was described as now managing director of a limited company, but lately carrying on business as a manufacturer of photographic materials and picture-frame maker at the Helios Photographic Works, Chester Road, and also as a photographic artist and enlarger, under the style of the Great Britain Art Company at Grosvenor Street, Manchester; and also at Newcastle-on-Tyne, Sunderland, Stockton, Hull, Leeds, Wolverhampton, Birmingham, Liverpool and Bradford. He submitted a statement of affairs which showed that he estimated his liabilities expected to rank for dividend at £4,190. As his assets he gave: "Sale price of business to Muenzer, Limited, cash payable before January 24, 1909, £4,000; 12,500 ordinary and 2,500 preference shares of £1 each, allotted as fully paid, £1,000," thus showing a surplus of £809. In answer to the Official Receiver, debtor said he commenced business as a photographic enlarger in Hyde Road, Ardwick, five years ago with £10 capital. Subsequently he took the premises in Grosvenor Street and Chester Road, the latter being his works. The business was prosperous, and grew rapidly. At the beginning of the present year he had assets amounting to something like £6,000. A company called "Muenzer, Limited," was formed to acquire the business, with a nominal capital of £25,000, divided equally into preference and ordinary shares. The shares were allotted, but no cash was paid, although he was to have had £4,000, in addition to the ordinary and preference shares, as set out in his statement. Practically, the Official Receiver said, debtor sold his business on credit—on a six months' bill. You got a piece of paper, which may be very valuable or very valueless, Mr. Gibson added, and to-day you have not got a shilling to pay your unsecured creditors? Debtor: No, I haven't, but what is due to me from the business. At present you have nothing? No. And your creditors' debts amount to something

over £4,000. Yes. The Registrar: At present it looks very much like a rather bad form of a one-man company. The examination was adjourned until January 22.

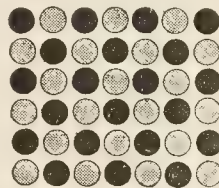
## Correspondence.

- \**Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*
- \**We do not undertake responsibility for the opinions expressed by our correspondents.*

### THE "THAMES" ONE-EXPOSURE COLOUR PLATE.

To the Editors.

Gentlemen,—May we be permitted to make one correction in Mr. H. Essenhigh Corke's very able and fair criticism of our plate? Treating the wider interstice between the red and green circles for the purpose of counting as a circle it will be found that the number of colour patches is 67,500 to the square inch—i.e., imperceptible as patches



the unaided human eye at a distance of six inches. As your next issue is a colour supplement, we should be glad to say a few words in on the construction of the screen; and also to deal with such cases want of complete success as have come under our notice.—Yours faithfully,

THE THAMES COLOUR PLATE CO.

254A, High Holborn, London, W.C., Nov. 21, 1908.

### DETERIORATION OF NEGATIVES.

To the Editors.

Gentlemen,—I read with interest your article on this subject and your suggestion for testing the effectiveness of the varnishing. My experience, however, is that if by any means the negatives get wet either by soaking up condensation that may run to the bottom during violent changes of temperature, such as we had a fortnight or so ago or whether by drops of water accidentally splashed on the surface those negatives that are not varnished at all fare the best. You will find, I think, in the former case that the damp acts very singularly on the varnish, causing it to make such marks that no amount of doctoring will remedy. I enclose the bottom part of a 1-1 negative to explain my meaning. You will perhaps say if this film had been cut off as you suggest prior to varnishing it would not have happened but I question it, for this reason: I had brought me not long since a negative that had been accidentally splashed with water, and probably not observed, and so it had ultimately evaporated, but it left pit marks in the film according to the size of the globule after the style of the marks, though fortunately none were large. The sample sent I admit is rather bad, though it is but one of several that were on the outside of about 500 on shelf. The intense cold of the bulk favours much condensation in extreme changes, such as I have referred to. Whether celluloid varnish would effectually meet such cases has yet to be proved. I think, however, of trying another remedy, which though a little costly, I hope will be successful in at least reducing to a minimum these effects, but it too has to be tested. I am not likely to adopt the method of the waggon painter, as I have a dislike three times the quantity of stuff needed drying in bulk on the bottom edges.—Yours,

OBSERVER.

[The specimens sent by our correspondent are interesting, but they simply show that an unsatisfactory varnish was used. A shell varnished negative will not usually stand the test we gave, though celluloid varnished one should be waterproof. When the lat



varnish is used the negative can be cleaned with a wet sponge without any fear of damage. A splash that is allowed to dry by evaporation is, of course, a severe test, but we quite expect that a fairly thick celluloid varnish would resist it. As regards the dripping process, we see no reason why the varnish should be more likely to dry in bulk along the bottom edge of the negative any more than a properly mixed paint. A good deal depends on the consistency of the varnish and upon the time allowed for setting before the plate is stood up on edge. In any case, celluloid varnish is not liable to dry thickly.—*Eds. "B.J."*

## Answers to Correspondents.

*All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.*

*Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.*

*Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & CO., 24, Wellington Street, Strand, London, W.C.*

*For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.*

### PHOTOGRAPHS REGISTERED:—

*T. P. Clarke, 34, Castle Street, Llangollen. Two Photographs of Sir Theodore Martin, K.C.B.*

*E. B. Hughes, 23, Patrick Street, Cork, Ireland. Photograph of Ernest Temple Thurston.*

*Ward's Studio, 45, Staines Road, Hounslow, Middlesex. Photograph of the Head of a Bulldog, "Grenadier Guard."*

*H. S. Franks, Adelphi Studios, 60, Strand, London, W.C. Three Photographs of Draped Figure.*

*E. D. Lavender, The Studio, Tweedy Buildings, Bromley, Kent. Photograph (Combination) of a Placed Group containing Twenty Photographs of Children, arranged in Rows of Five, one above the other. In three instances an Adult is shown.*

*H. Hilton, 8, George Street, Brighton. Photograph of the Brighton United Tui.*

*C. B. (King William's Town).—About the best formula is that given in the "Almarac" (1909), page 908: 10 per cent. iodine solution in potass iodide, 30 minims; 10 per cent. potass cyanide solution, 10 minims; water, 2 oz. As regards the lenses, it is contrary to our rules to give information which is contained in manufacturers' price lists. We have asked the firm in question to reply to you direct.*

*CLOSED STOVE.—I have just put a slow combustion stove, burning anthracite coal, in my work-rooms. Do you think that any fumes from it would injuriously affect bromide prints when drying in this room? It is a closed stove.—F. G.*

Certainly not. The stove should not give off any fumes at all, and even if a back draught should lead to occasional escape of burnt gas the effects on bromide prints would be absolutely nil. A couple of gas-burners of the flat flame type generate more injurious gas (i.e., containing sulphur) than such a stove, and photographic prints are, of course, not susceptible to change from such a cause.

*ENLARGEMENTS.—(1) The best way to get best results in enlarging large pictures 20 x 16 and upwards? (2) Is daylight enlarging through camera without condenser preferable to enlarging camera with condenser and artificial light?—DON.*

(1) The result is chiefly dependent upon the sharpness and softness of the negative. For such large work a thin negative and a powerful light is more necessary than for a lesser degree of enlargement. (2) Both are regularly employed by commercial enlargers, but we should prefer the arc light to daylight for varied trade work. Mercury-vapour lamps are now used considerably without condensers.

*WORRY.—(1) Practice and natural aptitude are the best teachers, but you may derive help from such books as: "The Studio, and*

*What To Do In It," by H. P. Robinson (Iliffe); "The Pose in Portraiture" (Dawbarn and Ward, 6d.); "Lighting in Photographic Studios," by Duchochois. (2) The most useful illustrated work is "Photograms of the Year" (Dawbarn and Ward, 2s. net), just published.*

*EXHIBITION PRINTS.—(1) I am thinking of sending several pictures to the Manchester Exhibition next month, and should like to know whether sulphide toned bromide prints are suitable, or would they stand a better chance if produced in carbon or ozobrome? My reason for asking is that I have them already completed in bromide, and should have to reprint them. (2) I should be much obliged also if you could give me some rough idea as to an average price to ask for pictures about 20 x 15 and 15 x 12 prints, in good oak frames and mounts of the best quality. My reason for asking is that, although an enthusiastic photographer for many years, I have not thought of exhibiting before. I might mention that I do not go in for any hand-work beyond spotting.—W. DE W.*

(1) It is purely a question of effect, and presumably, as you are accustomed to bromide, you will succeed better with that process. The "quality" of a carbon or ozobrome print is better than bromide (each process at its best), but a large proportion of exhibition work is done in toned bromides. As regards price it is found that framed prints offered at much over a guinea do not sell readily. (2) The paper you name is a standard make, and largely used by the photographic profession.

*GUNN AND NOWELL.—Certainly, it is. You may safely entrust them to Mr. E. W. Foxlee, 22, Goldsmith Road, Acton.*

*COLLODION PAPERS.—(1) I have such a trouble with the C.C. papers chipping and peeling, and yet I don't like to give them up, as I get better tones on the P.O.P. matt paper. Is there a means of hardening the surface? (2) I sometimes think of giving albumenised papers a trial, as I have seen prints on them years old a splendid colour and not the least faded. Can you by ready sensitised, like P.O.P., and in a matt surface, and what is the best toning bath for it?—WEEDEE.*

(1) Cracking is often due to using the paper too fresh. If the tubes be opened and the papers allowed to ripen a few days before use the trouble often disappears. There is no other remedy except changing to a brand of paper less liable to this defect. (2) Messrs. John J. Griffin and Sons, Ltd., Kingsway, London, supply an albumenised paper of the glossy type.

*TONING P.O.P.—Re fixing prints before toning, can you tell me what combined bath Professor Namias uses after the hypo-boric acid bath, or would any combined bath answer? It seems contrary to all former teaching to keep this after use and add gold. (2) Would an ordinary hypo bath answer as well as the boric acid one if the prints were washed between?—WEEDEE.*

(1) So far as we know, no special formula for the combined bath is employed. As regards keeping, the conditions are different; the prior fixation removes acid salts from the paper, and the combined bath is thus less liable to decomposition, as pointed out by Professor Namias. (2) We believe it would.

*OLD NEGATIVES.—I believe I saw a reply to a query re address of purchasers of old negatives, but I cannot find it. Would you oblige by repeating it?—G.*

Bowen, 58, Grove Road, Holloway, N.

*READER.—We do not undertake analyses of water. If you told us what specific object you have in view we could perhaps advise you; otherwise your best course would be to apply to, say, one of the Local Government Board analysts for the county of Cornwall. Dr. Bernard Dyer, 17, Great Tower Street, London, E.C.*

*BURSTING SHELL.—The enclosed photograph shows the effect of a shell bursting after it had embedded itself in the timbers of an old wreck which was sometimes used by artillery as a target; a large portion of it was sunk in water and quicksand. Do you think a shell would produce an effect like this under those conditions? What sort of a lens would have to be employed to be at a safe distance, also state distance it might have been taken from, and if you think it has been "faked" in any way.—LYDITE.*

We see no reason to doubt the genuineness of this photograph. If the vessel was partly sunk the effect of the shell would be much the same as that of a torpedo, and the effect represented

reminds us very much of a torpedo explosion. As regards safety of position the photograph might have been taken from an ordinary bomb-proof shelter close at hand, or with a very long focus lens, or possibly it is an enlargement. You must, however, remember that the effect of such an explosion extends up to an immense height, and it is not impossible that the exposure was made in an ordinary hand camera some considerable distance away.

**TICKA CAMERA.**—Will you kindly send me the name of maker of the small Ticka or watch size camera with which Her Majesty the Queen obtained so many of her views?—**RUSSE O'LEARY.**

Messrs. Houghtons, 88-89, High Holborn, London, W.C., are the makers of the "Ticka."

**VARIOUS QUERIES.**—(1) I am desirous of starting business on my own account, but am somewhat uncertain as to how I should set about it. I am at present employed as operator with a certain firm, but I take it that I am not at liberty to use prints off negatives which I have taken here as specimens, even although I intend starting in a town a long way off. How then am I to fill my show-cases, etc.? (2) Supposing I started in a town where there is already a photographer of the same name as myself. If he puts the name on his mounts, say, as "Brown, Whithorn," or "J. Brown, Whithorn," could I name my mounts "Brown, Whithorn"? Of late I have had considerable trouble with a yellow stain appearing round the edges of my plates during development. My formula is (a) 4 oz. soda sulphite, 1 oz. pyrogallie acid, 60 grs. potash bromide, 80 oz. water; (b) 8 drachms liquid ammonia (.880), water 15 oz., using three parts (a) to one part (b). I have sometimes to photograph in bad light, and was of the opinion the stain was due to forcing development with ammonia. I omitted the bromide from the (a) solution and diluted the developer with warm water, but without effect. Would a pyro-soda developer be a remedy, and if so, can you give me a good formula for Royal Standard E.R. plates?—**STAINED.**

(1) You are certainly not at liberty to use the prints unless you have the permission of the firm to do so. Your best way will be to take the specimens in your own studio when you have it ready.

(2) You can, of course, use your own name, but you must not do it in such a way as to lead the public to imagine that you are the other Brown, or are in any way connected with him. (3) We should advise you to try pyro-soda. You cannot do better than employ the formula as issued by the makers of the plates.

**COLOURING POSTCARDS, ETC.**—(1) Can you tell us what dye colours are used for the postcards of actresses, etc., that are shown in shop windows, as these seem to retain their colour very well? We have been using photo-tints, but find that they fade out almost as they dry, and we have had several of the cheaper forms of pendant miniatures returned on that account. We print the picture on bromide Nikko paper, developed with metol-hydroquinone, and fixed in an acid fixing bath and washed as usual. Do you think the acid would have any effect on the permanency of the dye colours? (2) Can you give us the address of a firm who supply tissue paper for interleaving folio mounts, etc., that has somewhat the appearance of watered silk? We have seen this in a photographer's window, but cannot obtain same locally. (3) Also can you let us know of a firm who supply thin vellum or a good imitation of same for mounting purposes, in sheets about 16 x 12, or 22 x 16, or thereabouts, at a reasonable price?—**TISSUES.**

(1) The Vanguard Manufacturing Company supply a reliable series of dyes. The most advisable colours are those printed in italics in the table on page 822 of the forthcoming "Almanac" (1909). The mode of preparation of the print, supposing the operations are properly carried out, will not affect the permanency of the dye. (2) Try F. E. Jones and Co., 22, Gray's Inn Road, W.C. (3) The genuine Japanese vellum, which is expensive, may be had from Messrs. Crompton Bros., Queenhithe, E.C., but they only supply in wholesale quantities. We believe, however, that the Autotype Company, 74, New Oxford Street, supply the same paper retail.

**CARBON PRINTING TROUBLES.**—In my business I work the carbon printing process, but to only a limited extent, say about half a dozen to perhaps a dozen prints a day. During the last month or so I cannot get the tissue to dry after sensitising within a reasonable time. I may say that I have no suitable place for drying it at this time of year, though it is all right in summer. I have a small gas

stove in the room, but the fumes from it make the tissue insoluble when it is dry. At present, if the tissue is sensitised in the evening, it is not dry until nearly the next evening, and is then almost useless unless very hot water is used for the development.

**CARBO.**

In place of the gas stove we should advise you to try a good paraffin stove; the fumes from that will not injure the tissue. Or, better still, use the spirit sensitiser as sold by the Autotype Company. Tissue sensitised with that dries in about a quarter of an hour, and is then in good condition and ready for use. As it is applied with a brush it is not expensive to use.

**L.C.C. LANTERN SLIDES.**—It was reported, at the meeting of the London County Council on November 24, that the Education and Local Government, Records, and Museums Committees had co-operated in a scheme for the provision and circulation of lantern slides amongst the Council's teaching staff by lending all suitable negatives in the Horniman Museum, subject to the museum receiving, as well as giving, lantern slides for teaching purposes. Certain exhibits at the museum are being photographed and reproduced on lantern slides in a scientific sequence for circulation. The exhibits will be grouped in a manner so as to be included in 200 negatives, and from these negatives lantern slides will be made and included in the Council's collection now in use in connection with the lantern slide scheme.

**PHOTO PRINTS FOR BUILDING PLANS.**—At the last meeting of the Buildings and Improvements Committee of Wimbledon Town Council the Town Clerk submitted a letter from the Local Government Board enclosing copy of a communication received by them from Messrs. Niven and Wigglesworth, architects of a house proposed to be erected in Murray Road, complaining that the Borough Surveyor declined to accept plans of the house, on the ground that they were photographed on cloth, and were not "drawn in ink on tracing cloth," as required by the by-laws as to new streets and buildings in force in the borough. The Borough Surveyor, having reported on the facts, the Town Clerk was directed to inform the Local Government Board that "photo-prints" are accepted under the by-laws, so long as they are clear and permanent.

**MIDLAND PHOTOGRAPHIC FEDERATION.**—Although it has only been in existence for rather more than a year the Midland Federation would appear to be in no way behind its older confreres in activity and enthusiasm. Its energetic secretary, Mr. Lewis Lloyd, has sent us a copy of the "Year Book and Gazetteer," the official organ of the Federation, and the long list of societies, nearly fifty, which comprise it, together with the names of the photographic experts who are willing to place their services for either public lecturing or personal advice, at the disposal of these societies, and also their individual members, are evidence that the executive have not been satisfied with obtaining anything less than the best for the benefit of those for whom they cater. Should there be any Midland societies still unfederated they would, we think, do well to send to Mr. Lloyd (Church Road, Moseley, Birmingham, 1s. 1d. in stamps) for a copy of this booklet, a perusal of which will doubtless enlighten them as to the advantages they are missing. The price of the book to members of any federated society is 6d.

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## SUMMARY.

"The British Journal Almanac." The 1909 "Almanac" is now obtainable everywhere. Our publishers advise those requiring it to purchase without delay, since the orders by wholesalers and retailers indicate an even more than usually large demand.

We regret to announce the death of Mr. W. E. Downey. (P. 928.)

Portraiture. The conclusion of the valuable series of notes and hints relating to photographic portraiture is given on page 923.

Some of the minor but important precautions in the making of stereoscopic transparencies are given on page 923.

Among other recent developments in pinatype, Dr. Mees showed the Croydon Camera Club last week the method of stereoscopic projection described by Dr. König in the "B.J." some week or two ago. A demonstration of this kind should make a very attractive society fixture. (P. 926.)

Embossing photographs at the time of dry-mounting, reflex cameras, and folding cameras are among the patents of the week. (P. 923.)

## "COLOUR PHOTOGRAPHY" SUPPLEMENT.

The "Thames" Colour Plate. Our experience with some of the examples of the "Thames" colour plate show it to possess considerable rapidity, but to give more difficulty in registration than may be at first imagined. (P. 89.)

Some interesting photo-micrographs by J. R. and G. R. Lynch and J. H. Pledge showing the structure of the "Thames" plate are reproduced.

Mr. Essenhig Corke has recommended the printing of separate positive transparencies from the negative made through the "Thames" filter-screen in order to obtain several duplicates of one original. (P. 92.)

The kind of positive which should be made for the "Thames" filter is described with other matters by the makers. (P. 96.)

Baron von Hübl, in a further discussion of the properties of the Autochrome plate, concludes that the copy from an Autochrome positive or negative is never quite equal to the original. He takes a highly discouraging view as to the possibility of printing on paper from screen-plates by a leuco process. (P. 93.)

A note pointing out how the Autochrome plate may be wrongly named for black spots upon it occurs on page 95.

## EX CATHEDRA.

### The 1909 Almanac.

Punctual to the announcements which our publishers have made for weeks past, the "British Journal Almanac" for 1909 was on Tuesday last in the hands of the public in all parts of the United Kingdom. Although efforts have been made, both by our publishers and ourselves, to reduce the bulk of the volume, what success has been achieved is, we fear, not very apparent. Nevertheless, dealers and distributors may observe with satisfaction that we have checked the book's corporeal growth, though not, we are assured, its progress and popularity among photographers everywhere. Indeed, if evidence were wanting of the still increasing esteem in which the "Almanac" is held we may point to the ordering of wholesalers, retailers, and importers which led to the edition being out of print more than a week before the day of publication.

### "The Market-Place of the Photographic World."

The volume of the "Almanac" being a kind of stores or shop which is a stranger to early closing and is open all the year round, we have this year—to continue the metaphor—provided a shop-window for the convenience of the purchaser, in regard to which addition it should be remarked that any article not seen therein should be the subject of inquiry to one or other of the firms who are concerned in our composite emporium. The "shop-window," in short, is a classified index to the goods of all descriptions advertised in the "Almanac." An index to advertisers there has always been, but we know it often happens that a given article is required and the name of the advertiser cannot be called to mind. The index, which is placed at the extreme end of the volume, not only does this, but serves also to indicate the choice available in purchasing any given material or piece of apparatus.

### The 1910 Almanac.

It is our usual experience to receive during the months of October and November, or even in December, suggestions from well-meaning persons as to improvements or additions which in their estimation would render the "Almanac" a more valuable work of reference. Not that we resent such suggestions in the slightest; on the contrary, we welcome them, and would be glad to see more of them; but we would point out that they reach us at a time when the bulk of the text portion of the "Almanac" is in the printer's hands, and when, therefore, the duties of revising proofs and dealing with the latest portions of the work are such as do not allow of the compilation of new features or re-modelling of sections. We sometimes gather from these correspondents that they hold the comfortable belief that

on the return of the editor and advertisement manager of the "Almanac" from their holidays somewhere about the end of September, a few instructions to printers, a week or two spent in "general revision," and hey! presto! your "Almanac" is ready to come out. This seems to be the delightful idyllic dream of some of our correspondents, who write us about November 10 with one or two ideas for things that would take a week to compile. To them and to all others we would say:—We invite and consider suggestions, and the best time to send them is the day on which you have gone through the "Almanac" just published.

\* \* \*

### More Cine-graph Fires.

During the past week there have been no less than two cinematograph fires in Berlin. But for the extraordinarily strict regulations enforced by the police and a special commission which keeps a sharp eye on such public entertainments, the second fire might easily have had serious consequences, as it happened during a crowded performance. A section of the German press has dealt somewhat sharply with the matter. Meanwhile the authorities are seriously investigating the causes of these fires and their prevention, and are considering the advisability of making it an absolutely necessary condition in the permit to hold cinematograph entertainments that only fire-proof films are to be employed. They are determined to put a stop to these dangers to life, and it is practically certain that some very radical reforms will be introduced in the near future.

\* \* \*

### Pyro Soda Formulæ.

We often hear speculations as to how far the various published formulæ of the different plate-makers really differ, and even hear doubts expressed as to whether they differ at all in many cases. The point can very well be tested by studying the formulæ in the "Almanac," and for this purpose we have abstracted and revised the pyro soda formulæ until they are all reduced to a common measure for comparison. We selected only the formulæ in which metabisulphite is used as a preservative, and of the eight to be found we rejected one on account of vagueness, and one that is conspicuously different from the rest as regards concentration. Of the remaining six, two are practically identical, though this fact would never be suspected from the form in which they are written. In five of them the carbonate is eight times the weight of the pyro, and in the exception it is just about seven times. In four cases both the quantities and relative proportions of pyro and carbonate are the same, and also in four cases the weight of sulphite is equal to that of the carbonate. One of the six formulæ has no bromide, but three of the other five formulæ have the same quantity.

The greatest differences are in the quantities of metabisulphite, which varies from  $3\frac{1}{2}$  to  $7\frac{1}{2}$  grains per 10 ounces of mixed developer. Where so many quantities agree, it is not much use taking a strict average among the whole, and the following formulæ more truly represents what the majority evidently think to be about the correct composition of a pyro soda developer.

Pyro ... ..	27½ gr.		2½ gr.
Potash metabisulphite ... ..	5 "		½ "
Soda sulphite ... ..	½ oz.		22 "
" carbonate ... ..	½ oz.		22 "
Potass bromide ... ..	3½ gr.		1 oz.
Water to ... ..	10 oz.		

In the whole nine formulæ in the book, only one omits bromide, which is rather a curious thing, seeing that a few workers now advocate the use of any bromide at all with pyro soda. In seven the sulphite and carbonate are together in the same stock solution. In one the sulphite is in a separate third solution, and in one it is in the same bottle as the pyro and metabisulphite, which we think, by far the best place for it. Another curious feature is the concentration, which is certainly greater than that commonly used. Two grains of pyro per ounce of developer is very commonly used, but the majority of these formulæ recommend  $2\frac{3}{4}$  grains, and while none goes less, one goes up to nearly  $4\frac{1}{2}$  grains per ounce. As regards mixing, a preference is shown for two solutions used in equal parts, which is perhaps not quite the best arrangement, as it affords no opportunity for warming the developer by adding warm water. We always prefer two solutions of double strength, so that one part is taken of each and then the mixture is diluted with two parts of water.

\* \* \*

### Illegal Failures with P.O.P.

Last week our "Patents" column contained an abstract of a curious patent which suggests that the inventor is endeavouring to turn to account a rather common mishap. We frequently have queries relating to the sticking of P.O.P. prints to the glass upon which they are squeezed for glazing purposes, but few have probably realised that this sticking propensity was a suitable subject for a patent. The inventor dips his P.O.P. print into water at 70deg., and then squeegees it on to clean glass. He does this for the purpose of inducing the print to stay on the glass, whereas others in summer weather do precisely the same thing under the impression that when the print dries it will leave the glass and show a fine glossy surface. When the water is really 70deg., and the print has not been hardened, the final result is a little uncertain, but in future photographers will do well to remember that when the prints stick they are infringing this patent. On the other hand, when the patentee's prints refuse to stick, he will have the consolation of possessing some well-glazed results.

## THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC FOR 1909.

Edited by GEORGE E. BROWN, F.I.C.

### NOTICE.—IMPORTANT.

Our publishers ask us to inform agents that the entire edition of 25,000 copies of the "Almanac" is now booked, and they regret being unable to execute further orders.

The forty-eighth annual issue of THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC has now been published. Last year's ALMANAC reached a total of over 1,000 pages, and the entire edition of 25,000 copies was sold out immediately. Of no other photographic book ever issued can two such unique facts be recorded. The edition for 1909 also consists of 25,000 copies.

The editorial article deals very completely with the important subject of

### REFLEX CAMERAS,

and the systematic review of the work of the year under the title "Epitome of Progress" is again a strong feature of the volume.

The lines followed in the previous editions of the ALMANAC are maintained in general, but in a number of particulars the arrangement of the volume for 1909 is modified to make it more than ever the book of universal photographic reference.

The ALMANAC for 1909 thus appeals to photographers all the world over as a daily reference guide in practical work. The standard matter and formulæ are revised and added where necessary, and wherever practicable, new features of an informative nature added.



### STEREOSCOPIC TRANSPARENCIES.

MANY photographers have very confused ideas upon the subject of mounting stereoscopic prints, and, owing to the repeated insistence of text-books upon the necessity of separating the two pictures and reversing them right and left, some have an idea that the right and left hand pictures get transposed in some very mysterious fashion. It is easy to produce satisfactory card slides by simply following instructions in a mechanical fashion without understanding the why or wherefore of any of the proceedings, but when transparencies are in question want of knowledge of the true reason of the reversing process may lead to the needless cutting of the negative. As a matter of fact, though we must cut either negative or print when making a card slide from the original negative there is no need to cut either when making a transparency.

The simplest way to look at the cutting question is as follows:—In the first instance, when we focus on the subject, each half of the focussing screen shows an inverted image. If the finished negative is examined through the glass with the right-hand print still on the right we see exactly what we saw on the focussing screen. If, again, we make a print and look at this with the right-hand picture on the right side we still have two inverted images. What is wanted is evident. We must divide the pair of pictures and turn each one separately the right way up and then we have the two correctly arranged.

A very little consideration will show that the inversion of the image that we have to effect is precisely the kind of inversion that takes place when we produce a transparency by copying from a negative in the camera. If, then, we set up our stereoscopic double negative in a copying frame and produce a transparency from it in a stereoscopic camera so that the right-hand lens makes a copy of the right-hand picture and the left-hand lens one of the left-hand picture, the result will be a complete stereoscopic slide with the two pictures in their correct relative positions. No cutting is required and all the necessary inversion is automatically effected in the copying process.

If the negative is set up with the film side towards the camera the resulting positive will have to be viewed through the glass, but if the negative is turned glass side to the camera the positive must be viewed from the film side, which means that the cover glass must be between the film and the eyes when we study the finished slide. The latter is the best arrangement if a ground glass backing is not required, but if ground glass is necessary then the complete slide will have three thicknesses of glass and be very heavy; probably also too thick for the grooves of the stereoscope. The first method of copying, with negative film towards camera, is therefore the best

if a ground glass backing is to be used. This leads to a little minor trouble with the masking, which always looks most neat and gives the best finish when seen through the cover glass. Probably the best effect is produced when paper masks are dispensed with. A very good way is to specially prepare the negative by cutting a clear mask around the images. First mark out with pencil the boundaries of the two pictures, and then with the aid of a straight edge cut through the boundary lines with a very sharp knife and finally scrape away all the film outside the cuts. This is a very easy and safe operation, but when finished the whole negative should be varnished to prevent the edges of the film lifting. The positive made from the prepared negative should then show a black mask in silver deposit, or if the mask does not develop quite black enough it can be easily covered with a coat of black varnish.

It is obvious that instead of making a transparency to be viewed through the glass we can apply Mr. Carnegie's reversing process, and so get a negative from which we can make direct paper prints that will require no cutting. When a large number of prints is required it would be quite worth while to adopt this expedient.

It can, of course, easily be understood that when we dispense with cutting either negative or print we also lose all opportunity of correcting wrong alignment of the two images. To preserve correct alignment it is essential that the two lenses of the stereo camera should be exactly on the same level. That is to say, the axis of each lens when produced to cut the plate must intersect it at the same distance from the top or bottom. This will be the case in any good quality apparatus, but rigidly accurate fitting is not always in evidence in cheap apparatus.

As regards securing proper separation of the images in the transparency, this can be easily arranged in the copying operation if the lens separation is adjustable. If not adjustable the separation for distant objects in the final transparency will be the same as that of the lenses, which must therefore not be too far apart. Some cameras have a fixed separation of  $3\frac{1}{4}$  inches and this will probably be a little too much for the final slide. For an ordinary prismatic stereoscope the distance should not much exceed three inches and for lenticular stereoscopes  $2\frac{1}{2}$  to  $2\frac{3}{8}$  inches is about the limit. If the original separation is three inches we should have to copy with a lens separation of  $2\frac{1}{2}$  inches to give a positive separation of  $2\frac{1}{2}$  inches. An adjustable separation is in all cases desirable, and it can be arranged for without any great difficulty in most stereo cameras. Of course double extension is required for the copying process, unless a pair of very short focus lenses is available, and on this account a  $\frac{1}{2}$ -plate camera adapted to take  $6\frac{1}{2}$  by  $3\frac{1}{4}$  plates is more generally useful than one of the standard stereo size.

### HINTS ON PORTRAITURE.

[In the 1909 "American Annual of Photography," just published, we find a compilation of rules and counsels prepared with evident care by J. W. Little. There being many of the younger generation of photographers by whom such epitomised opinion is welcomed as an aid in their own study of portraiture, we last week commenced the reprint of the article, which is here concluded.—Eds. "B.J."]

PLANT things, such as chiffon, lace, furs, etc., lend themselves more readily to grace of outline than do silk and satin, while dull cloth is more conducive to breadth.

Care must be taken in arranging the accessories, such, for instance, as a newspaper or book held in the hand, that the attention may not be drawn away from the head. Balance may often be secured by the introduction of a strong light by the

use of some accessory or otherwise, to serve as a background for the head, the secondary light being toned down, and so concentrating the interest in the head and face. There should be but one leading light, which should usually be the head, and one leading line, which should lead toward the head; a study of inverted photographs is useful for the purpose of determining the abstract quality of lines and spaces.

The accessories should be employed to repeat the lights. The light of the face should be several times repeated throughout the picture in fainter tones, but there should be no exact quality in any of the repetitions, neither should there be too many, but the chief mass of white should be sufficiently pronounced and have no rival.

Be careful to have the background and accessories suited to the character of the sitter and his costume. Models should also fit their occupation; as, for instance, a tennis girl should be well formed physically.

Jewellery should usually not be worn unless it be of a character that will photograph well and not reflect the lights strongly. Should it do so it should be remedied in retouching.

### Hands.

As a general rule, the hands should not be placed directly below the head, although one of the hands might be so placed if the other carried the greater interest, as might be the case were it holding a book, etc., and the lines running towards it from the head were stronger.

The hands should not be placed opposite each other, nor, when considered with the head, form a triangle or other geometrical outline. Sometimes it is better to subordinate them in tone; to that end they may be placed in shadow and should usually show the edges only. The fingers should be partly folded, but should rest naturally.

If the hands are placed close together, they are likely to be too insistent, unless skilfully posed and subdued in lighting.

The background for the hands should be carefully considered. If the hand touches the face it should not press so hard as to cause distortion of the features. In this case the hand and the side of the face with which it comes in contact may be placed in shadow.

First allow the sitter to drop his hands in his own way, as the result will probably be more natural. If unsatisfactory, they may then be posed or omitted.

Poses of the hands adopted in painting cannot always be followed in photography, on account of the exaggerated perspective produced by the lens and for other reasons.

It is not advisable to use the swing back to get the hands in focus, as it further increases the size of the hands. It should be remembered here that the length of the hand from the wrist is almost the same as from the forehead to the chin.

### Lighting.

In order to preserve tonal values and still concentrate the light on the face, it is better to do so by placing the face in strong light than to darken the tone of the hands artificially.

A vertical light is best for a round face, to give relief. A front horizontal light is best for heavy eyebrows, sunken eyes, and prominent features. A top light gives better character to the eyes, but is apt to exaggerate the mouth. Where there is little projection to the brows, a top light may often be used to advantage.

If the arrangement of the blinds to secure proper lighting be once ascertained, almost any effect can be secured by moving the sitter and by the use of head-screens, without moving the blinds.

Some operators consider that the best effect of lighting is secured when the catch lights fall on the eyes properly, securing the different effects, such as broad lighting, Rembrandt lighting, etc., by moving the camera around the sitter. For most lightings, the subject should look forward with the face about parallel to and slightly back of the side-light, with the light falling upon the head at an angle of about sixty-five degrees.

For diffusion of lighting, some operators use a large screen composed of tracing cloth, which is interposed between the skylight and the sitter in such a manner as to shut out all direct illumination excepting that which is permitted to pass

through an aperture about two feet square in the centre of the screen. Others use an open light, corrected by opaque screens between the subject and the light, to produce luminous shadows in the subject and at the same time allow of short exposure.

If the lighting is harsh, lengthen the exposure and shorten development; if flat, shorten the exposure and lengthen the development.

Softness may be produced by removing the subject from the light and allowing a large area of light to enter.

More brilliant lighting can always be obtained on bright days than on dull days, as the light is more diffused, and faster plates must be used in dull weather, which do not give as much latitude as slower plates. If slow plates are used it is often necessary to diffuse the light on bright days to soften contrasts.

When orthochromatic plates are used, the light on the sitter should be screened by pale yellow blinds, when it may not be necessary to use a ray screen over the lens. If panchromatic plates are used such blinds will not be necessary.

If there is no blue or violet in the subject, it is of no advantage to use a ray filter in connection with orthochromatic plates, and they may be used without it; or the light falling upon the blue may be shielded by an opaque screen.

The use of ray filters in connection with orthochromatic plates tends to increase contrasts of light and shade. The lighting then should therefore be somewhat more diffused.

Orthochromatic plates are not always desirable in portraiture, as in the case of contrasting blue and white stripes, which might be rendered too contrasty. The use of orthochromatic plates, however, tends to minimise the necessity for retouching. Flat lighting on the shadow side of the face is more suggestive of youth; more contrast is suggestive of age and character.

Thin faces should have diffused lighting, which tends to make them look more full, while hard lighting tends to give more expression to round faces.

High-lights upon or surrounded by light tones give suavity and gentleness of modelling. In a face this lighting produces flatness, and is therefore adapted to faces which are wrinkled and thin, where these qualities are apt to appear too pronounced.

High-lights against deep shadows give brilliancy and produce ruggedness and angularity. This is a good lighting for faces inclined towards flatness or having little elevation of the features, and tends to bring out expression.

A flatter lighting is required for a profile than for a three-quarter or full face.

The more at right angles the light, sitter, and camera are placed with respect to each other, the longer the exposure required, on account of the greater portion of shadow showing in the portrait.

Reflectors are useful for lighting up shadows cast on backgrounds or other portions of the picture. A note should always be taken as to what extent the reflector throws light on the background as well as on the sitter.

### Reflectors.

To avoid giving a harsh light, the reflector should be large and at some distance away. When used for the head and shoulders only it should be small, close to the subject, and just out of range of the lens.

A pure white reflector is apt to cast too strong a reflection on the shadow side of the face, producing second catch lights in the eyes.

A reflector on the floor will reduce shadows under the chin and nose.

When a white screen is used between the subject and the light for diffusing the light, the exposure may be somewhat less.

When using a white side screen for diffusing it is sometimes



useful to have one or two very small dark screens to cut off the light from the shoulder or from the hands in case they should be posed against a dark ground.

In general, the principles governing the lighting and posing of a portrait in the studio will also apply to portraiture by an ordinary window, although, the source of light being smaller and less under control, it is more difficult, and effects cannot be obtained in such variety.

Owing to the concentrated lighting when using an ordinary window, the scale from light to dark in the composition should be short; the subject should be as well lighted as possible, the light diffused, the shadows illuminated by reflectors, and the exposure ample.

A sheet of white cardboard may often be placed outside the window at an angle to secure better lighting where the light is obstructed by high walls or other objects.

A shaded window at a considerable distance on the opposite side of the room may often be utilised to light the shadow side of the face, but the light from it should not be so strong as to produce flatness or cross lighting.

If the walls of the room are too light, or the light from other windows in the room is strong and difficult to control, a dark reflector may be used to tone down the light on the shadow side of the face.

If daylight is insufficient in at-home portraiture, the side opposite the source of light may be sometimes lighted by a small supplementary flashlight, using plain magnesium.

By seating the subject low, as with children, he may be placed farther from the window; the farther from the window, the more diffused will be the lighting.

A good lighting may be secured by an ordinary window by placing the subject the same distance from the window as the width of the window and even with its farthest edge. Cover the lower part of the window with a dark shade and raise it to the same height as the head of the subject; then turn the head of the subject until the eye in the shadow can just see the window.

When the dress is dark, the lower part of the window should be covered with some translucent material, in order that the dress may receive sufficient exposure.

Violent contrasts in clothing, accessories, or colour should be avoided or controlled in lighting. A large mass of dark or light, such as a black or white dress, must be partly lost in the shadow or in the background in places, or it must be relieved in some other way, as by a strong effect of contrast. White objects should usually show relief on one side, and on the other unite with the shadow or background to prevent their appearing to be inlaid.

Figures in silk and satin dresses should be so lighted that the face only is in strong light, to prevent spottiness by reflections.

When photographing a subject in a white dress, compromise between over- and under-exposure of the face. Ribbons, etc., may be retouched a little, and the face held back while printing. Woollens and colours which absorb the light require more exposure.

If white drapery must be used, it is better to have it of wool, which absorbs the light better than cotton. Non-halation plates are best. A painter's comb, having about twelve teeth to the inch, placed in front of the upper half of the lens, if properly used, will serve to partially cut off the light falling on the lower part of the figure.

When it is intended to vignette portraits, the sitter should not wear clothing of marked contrasts or patterns; white drapery is perhaps best. The background should be light and plain or somewhat graduated; the light should come rather from the front, the focus should not be too sharp, and the eyes of the sitter should not be looking directly toward the camera; exposure and development should be so controlled that the face

will not appear in the print as very much darker or lighter than the background.

Black vignettes may be obtained by placing a vignetter inside the camera and about two inches from the ground glass.

Vignetted photographs are not particularly in good taste, as they prevent proper spacing and uniting of the subject with the margins of the picture, and, moreover, are apt to convey the impression that they have been printed in that way to conceal defects which would otherwise appear.

When a light background is used the lighting should be flat, and a lighter range of tones should be employed on the face than with a dark background, when the general lighting should have more contrast.

When using a painted background, the light should fall from the same source as the shadows indicate as painted on the background.

Where strong contrasts are desirable, it is usually better to put a light figure against a dark background than a dark figure against a light background.

A dark background generally gives more importance to the head than does a light background. Dark clothes are less noticeable against a dark background and light clothes against a light background.

The figure should usually not show too hard against the background, but should merge into it at some parts to produce one scheme of light and shade.

The background should never show a greater degree of light and shade than does the principal part of the picture.

When it is desired to subdue the background and accessories, negatives may be given a short exposure and shadows strengthened with matt varnish on the back, while detail may be strengthened by retouching on the film side and the portrait printed on rough paper to soften the lines of the retouching. Undesirable portions of the background may be eliminated by reduction; various other modifications may be made also by reduction and spotting, as practised in some studios.

The light and shade values of either plain light or dark backgrounds may be variously modified by setting them at different angles, either laterally or horizontally, with respect to the source of light. This may also be done by reflecting light on various parts of the background, or by screening parts of it from the light.

When graded backgrounds are used, care should be exercised that undue prominence is not given to those parts of the subject coming against the lighter parts of the background. Some operators are opposed to the use of artificial and graduated backgrounds, and use various plain fabrics in their stead. Brown and gray paper often make very serviceable backgrounds.

The distance of the background from the sitter should be studied with the lighting. Atmosphere is more easily secured with a grey background.

A full-length portrait should have plenty of background space.

For a good likeness, a light background is preferable; for a study dark background is usually best.

With a white background, a longer exposure is usually required to avoid contrasts. With a dark background the exposure should generally be shorter, as the lights of the face are then shown with greater clearness. Development in either case should not be prolonged.

If a background has creases in it, it may be kept moving during the exposure.

A simple background may be improvised by the use of the open doorway of a darkened room, or the door itself, by a suitable choice of angle, may be made to act as a graduated background.

When taking a portrait outdoors it is often better not to attempt to pose the subject, but to await a favourable opportunity, and then snap the shutter.

When a bust picture is taken outdoors it is sometimes better to have the subject standing.

J. W. LITTLE.

## RECENT DEVELOPMENTS IN PINATYPE AT THE CROYDON CAMERA CLUB.

[Dr. C. E. K. Mees, on the 25th ult., chatted informally and interestingly about pinatype, as applied to three-colour slides and prints, stereoscopic projection, and monochromatic transparencies and paper prints. As a rule, the optical lantern, the blackboard, and a plentiful supply of white chalk, are sufficient to meet the learned doctor's requirements; but on the evening in question, in addition to these almost indispensable adjuncts, a fine array of dishes, measures, and various coloured solutions indicated something in the nature of a "practical demonstration," something indeed which the own gratification, and equally to others who would in turn combat his views. A cheerful, as well as an instructive, evening was therefore anticipated, and, as a matter of fact, realised.]

DR. MEES, after introducing his remarks by some description of the large scale on which dyes were invented and manufactured by Meister Lucius and Brüning, turned to the subject of the evening, incidentally reminding his hearers that the first demonstration of pinatype in this country was given at the Croydon Camera Club, since when, although no startling innovations had been effected, much patient work had been done towards perfecting the process. Pinatype, as they knew, depended upon the fact that a bichromated film, when exposed to daylight behind a positive, is capable of taking up a dye out of solution, in inverse ratio to the light transmitted, and in consequence reproduces such positive.

### Three-Colour Lantern Slides.

In the making of a three-colour lantern slide three positives from the original negatives were therefore necessary. As pinatype was capable of reproducing gradations very faithfully, a positive of fair, but not excessive, contrast should be sought for, not the soft and flat transparency usually employed for enlarging by artificial light. A bichromated film on glass is exposed behind the positive from the red filter negative and dyed up blue; the film is then coated with a layer of plain gelatine, sensitised, and exposed behind the positive from the blue filter negative and dyed up yellow. The third transparency is printed on a separate plate, from the positive taken from the green filter negative, and dyed magenta. As this forms the cover-glass a reversed positive is required. Immense trouble had been taken by Dr. König and those working with him to secure suitable and permanent dyes. Apart from the extreme importance of their possessing correct colour absorptions, it was also obligatory that they should not spread laterally in the film or wash out. All "acid" dyes could be used, but it was not worth while considering other than those specially sold for the purpose, which naturally were much the most suitable. Plates coated with plain gelatine were obtainable, and must be sensitised by bathing. It was not convenient or conducive to satisfactory results to attempt to incorporate the bichromate salt with the gelatine before coating.

### Three-Colour Paper Prints.

Three positives are required as before, except that the necessity for reversing one does not arise. They might be obtained either by enlargement or by contact from the original negative. Three bichromated films on glass are exposed and dyed up as usual and washed. It was a strictly necessary condition that the "print-plates" be coated with a hard gelatine. A piece of paper coated with soft gelatine is then immersed in water and applied to the print-plates in the order given in the instructions, when the dyes are successively absorbed by the soft gelatine to any required extent, which may be gauged from time to time by inspection. It was essential that the paper be thoroughly saturated and applied to the print-plates under water and kept damp whilst in contact. The print-plates might, of course, be used over and over again by repeating the dying-up.

### Transparencies and Prints in Monochrome.

The same system, *mutatis mutandis*, might be applied in the production of monochromatic slides, transparencies, and paper prints. A very large number of special dyes were available of every variety of hue. These were divided by Dr. König into two classes, the first comprising dyes which severe tests had proved to be permanent, the second being dyes which experience had shown were not so stable, but might be used with confidence for lantern slides. Absence of grain, with great transparency, characterised "pinatype" slides. The process, moreover, was inexpensive to work, notably so in the case of paper prints, when a paper of far less purity might be employed than could be adopted for coating with a silver emulsion. For the cheap production of postcards it merited consideration and for repetition work with lantern slides.

### Novelties in Colours.

A series of slides, in three-colour and in monochrome, were then shown on the screen, and comprised some very beautiful subjects. In the monochrome set fine rich blacks, brown-blacks, browns, and olive-greens were much admired. Next came such illustrations as seascapes in bright crimson, spring landscapes in intense purple, the setting sun in sullen indigo, portraits in pea-green, and so on. These, the lecturer explained, somewhat nervously, were not shown as examples of appropriateness in colour selection, but rather as indicating the wide range of colours obtainable. Notwithstanding this explanation, an excellent simulation of wrath amongst the pictorialists present at once became evident. One after the other they rose and went for the devoted doctor in right royal fashion. A chance like this was not to be missed, and it was felt that the most must be made of it. During this outrage on the finer feelings of the artistic temperament an interested point was elicited in respect of a few of the black dyes. These—unlike a platinotype black, for instance, which absorbs the spectrum fairly evenly—possess only absorption bands, and in consequence a decided change of tint occurs when the former is viewed in some artificial lights. It was also pointed out (possibly as a sop to the inflamed pictorialists) that a considerable amount of control was obtainable, over-exposure giving hard results, under-exposure the reverse. The correct exposure for a slide might be taken to be about twice that, which would be given to P.O.P. for full printing.

### Stereoscopic Projection.

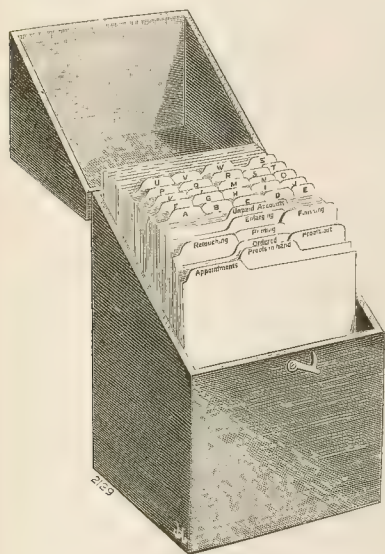
Undoubtedly the chief interest of the evening centred in this. In principle the method is old, but it may safely be asserted that it has been brought to a state of perfection never before attained. It consists of the projection by means of a single lantern of two coloured pictures in close juxtaposition, which are viewed through spectacles having eye-pieces of similar colours: Two pinatype slides are made, one in the usual way, the other forms the cover-glass, and must necessarily be printed from a reversed positive. These are respectively dyed in two colours, which have only just been placed on the market—viz., "complementary green" and "complementary red"; the two plates are then bound up in the "nearest approach." To obtain a satisfactory red, the lecturer said, was fairly easy, but up to the introduction of "complementary green" there was no dye extant which would fulfil theoretical requirements. When the two overlapping pictures are projected as one on the screen a little fuzziness only is apparent, or, rather, the slide has the appearance as if the camera had been slightly moved during exposure. The spectacles, which gave the company a very distinguished and unusual appearance, are constructed out of cardboard and string. One eye-aperture is glazed with red gelatine, which, to all intents and purposes, only allows of the green image being seen (as "black"), the other is glazed with green, which only permits the red image to be observed (also as "black"). The eyes therefore resolve the composite picture monochromatically and with true stereoscopic effect. It is obvious that all the spectacles must be worn one way and in accordance with the projected images. In the case where, say, some isolated branches of a tree or other objects much nearer to the camera than the rest of the view were included, then the appearance on, or rather away from, the screen was very curious, not to say, startling. Such branches or other objects appeared to shoot out of space well in advance of the screen and to be quite independent of the picture behind them. This method of stereoscopic projection seems well worthy of the attention of amateurs and others, and will undoubtedly come as a novelty to the majority. From the foregoing it is apparent that no difficulties worthy of the name exist, and no special apparatus is required,



of, of course, the spectacles, which, so far as the cardboard frame concerned, might easily be improvised at home. Possibly they supplied ready made, and no doubt the London agents for pinaktes, Messrs. Fuerst Bros., would be happy to answer any inquiries. Already stated, the method is not new, since it dates back to Louis Du Haumont, who, under the name of "Anaglyph," introduced in 1891, but hitherto only ordinary commercial dyes and coloured inks have been available, and have therefore imperfectly realised the theoretical conditions.

### CARD-FILING FOR STUDIO BUSINESS.

FOSTER BRIGHAM's article of last week on the use of the card-index system in controlling the production and charging of work in a portrait photographer's establishment naturally attracts interest to the cards prepared by Messrs. Houghtons for general use by photographers. We believe we are correct in saying that Foster Brigham's design of card was not made in ignorance of that of Messrs. Houghtons Ltd., but was drawn up on the lines shown and described in our last issue in order to carry out the system which seemed best to its author. The contingencies provided in the Houghton card, which is an adaptation for British studios of the system described by Mr. Pirie MacDonald, will be



appreciated from the account contained in a booklet "Keeping tabs on your Business," which Messrs. Houghtons will be pleased to send to any professional photographer. This runs as follows:—When an appointment is made the card can be filed according to the date of such appointment and it thus automatically comes to the front upon the day for which the sitting has been fixed. It is next placed behind a Guide (or card with projecting tab) marking proofs are in hand, after which it is moved to division marked "Proofs out."

Should finished proofs have been ordered the particulars must be noted. Should the proofs be detained "Reminders" in the shape of a letter or postcard can be sent enquiring whether they are satisfactory, or if the client would prefer to give another sitting. The proofs having been returned the date is filled in upon the card and the order put in hand. Particulars of the orders will of course be entered in the spaces provided.

As the work proceeds the card will be marked and placed behind the corresponding Guide Cards:—Retouching, Printing, Finishing. As the prints are delivered, the number and dates are filled in, and the card placed in the "Unpaid Accounts" section. The lower portion of the card should be used as a ledger and the items posted on the journal and cash book. If this procedure is followed there will be little or no danger of accounts being overlooked. The Card is finally removed to the Alphabetical Index, where it is always instantly accessible for reference.

The cards as supplied by Messrs. Houghtons measure each 8 in. by 5 in., and are kept in an oak box measuring  $5\frac{1}{2}$  in. by  $5\frac{1}{2}$  in. by 9 in., and accommodating about 300, or in larger and more elaborate cabinets which permit of the system expanding to meet the resources of any business. The single-box outfit may, however, be recommended to those anxious to make a beginning with the system, and in any event is the essential or working part of the system, since it is the indicator which shows how orders stand and what accounts are owing. The file of cards representing work done and paid for may be separately kept as the cards increase without affecting the vital and most useful part of the system. The simplest form of outfit is obtainable complete with box, cards, guides, etc., for 15s., a larger outfit for 42s. What we wrote a year ago of the usefulness and efficiency of such a system needs to be emphasised still more to-day, and we would therefore direct attention to the means thus offered to the smallest photographer of keeping his business under his eye in a way which no other method so easily permits.

## Answers to Correspondents.

*Owing to re-make up of this issue it has been necessary to place part of the Answers to Correspondents here.*

**TRIPLER LENS.**—I have a lens offered me for 12 x 10 pictures. It bears the name of J. H. Dallmeyer, "Triple Achromatic." Will you please say if this lens is as good as a R.R. for outdoor groups and general work? It is offered me cheap, but I want a good lens, and cannot afford the price of one of the new forms of anastigmats. Awaiting the favour of a reply through the "Journal."—A. J. BURGE.

The triplets of Dallmeyer were very excellent lenses for the time when they were introduced, but they have very generally been superseded by the R.R., and still more modern lenses. As compared with the R.R., the triplet is rather a slow lens, as its largest aperture is but about  $f/10$ , while that of the former is  $f/8$ . Still, the triplet is a very useful instrument for general work, where great rapidity is not required, as, for example, in copying pictures. For this purpose it is still much liked on account of the fine definition it yields.

**PAPER FOR BACKGROUNDS.**—Can you kindly tell me of any place where I can get paper, brown, up to 5ft. or 6ft. wide without creases for making backgrounds? I have inquired of several stationers in this neighbourhood, and none of them keep the paper except in sheets, and these are all folded in the middle, which, of course, would not do.—J. G. BELL.

Brown paper, and also a grey, may be had up to at least 5ft. wide and of any length, and is a regular article of commerce. It is supplied by all upholsterers. It is known as "carpet paper," and is made for putting under carpets when they are laid.

**A. Z.**—If you bought the goodwill and books and book debts, together with the furniture and apparatus, the negatives are yours, unless in the agreement they were specially excluded. What would be the use of the goodwill and books without the stock of negatives? We should advise you not to give them up, but to consult a solicitor if you are threatened with action.

**MOUNTING LANTERN SLIDES.**—Will you please let me know the best cement to use for binding up lantern slides? I have used gum—the best gum arabic—and dextrine, but I find the paper has a tendency to peel off with the heat of the lantern.—HANTS.

We know of nothing better than either fish glue or thick flour paste, made with good flour and well boiled. With this there will be no tendency for the binding to split off. Gum is not a good cement for fixing paper to glass.

**E. K. C.**—Both methods are good, and some prefer one and some the other, but the prints strip off equally as well with either. Waxing the plate is a little more trouble than treating it with French chalk. Some who employ the former method say that with it they get a higher gloss than with the latter. As a matter of fact, however, in practice, there is very little difference between the two in this respect.

(Continued on page 935.)

## DEATH OF MR. W. E. DOWNEY.

We regret to record the death of Mr. William Edward Downey, which took place on Monday last, November 30, following an operation. With his father, Mr. William Downey, who is now more than eighty years of age, the deceased gentleman had been associated with the Royal family from boyhood. When twelve years of age he accompanied his father to Balmoral to take a photograph of Queen Victoria, and since then a succession of Royalties and groups of Royal personages have been photographed by the Downeys, father and son. At the time of his death, Mr. Downey was only fifty-four years of age. His decease will be keenly regretted in his family circle, and particularly by his venerable father, with whom wide-spread sympathy will be felt.

## Exhibitions.

## EDINBURGH PHOTOGRAPHIC SOCIETY.

THE annual exhibition of the Edinburgh Photographic Society is still some months ahead, but this month they have in their rooms, 38, Castle Street, Edinburgh, an exhibition of members' work. The membership of the E.P.S. is not confined to the city, its special rates for country members assists greatly in maintaining its high membership roll, and in the prize list we find that a number of the awards have been gained by non-resident members. The President has shown his active interest in the survey section of the society—a branch of work that we have frequently commended—by gaining the medal in that class, besides one in architecture, thus showing that he is not merely a figure-head, but an active working president. The exhibition shows a good level of quality, and should be a popular item in Edinburgh photographic life. Landscape and seascape: Medals, James McKissack (2), Rev. W. J. Hansell, Alex. G. Watson; honourable mention, J. Angus, D. Lumgair. Survey: medal, J. F. Duthie. Architecture: medals, J. F. Duthie and Francis C. Inglis; honourable mention, Miss Grace M. Rae, James McKissack. Portraiture and figure work: medals, Rev. W. J. Hansell (2), James McKissack; honourable mention, James McKissack, Miss Margaret McLauchlan. Colour work: medal, W. Mitchell. Lantern slides: medals, James McKissack (2); honourable mention, J. Angus, J. D. Brown, R. C. Malcolm, James McKissack, Rev. W. L. Jamie.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for Patents have been received between November 16 and November 21:—

**COPYING.**—No. 24,566. Improvements in photographic frames for copying plans, drawings, and the like. Richard James Baker, 156, Llandaff Road, Canton, Cardiff.

**FILM PACKS.**—No. 24,734. Improvements in flat film packs. Jochaim Georg Schneider, 6, Lord Street, Liverpool.

**CINEMATOGRAPHS.**—No. 24,752. Improvements in apparatus for photographing and exhibiting cinematograph and mutoscopic pictures. Henry William Hamblin Palmer, 52, Stephens Road, Tunbridge Wells, Kent.

**FLASH-LIGHT.**—No. 24,831. Improvements in or connected with firing mechanism for photographic flash-light apparatus. Arthur George Barrett, 55, Chancery Lane, London.

**DEVELOPING APPARATUS.**—No. 25,074. Improvements in apparatus for developing sensitised plates. Arthur Augustus Brooks, 57, Barton Arcade, Manchester.

**SPECTROGRAPHS.**—No. 25,095. Improvements in spectrographs. Peter Heele, 16a, Valletta Road, Acton, London.

## COMPLETE SPECIFICATIONS ACCEPTED.

These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

**DRY-MOUNTING EMBOSSED FOLDER.**—No. 3,727. 1908. The object of the invention is to accelerate the process of attaching prints

to their mounts by the dry-mounting method, and, at the same time, to emboss or otherwise plate-mark the prints. For this purpose, a folder is used consisting of two plates jointed at one side and made of metal sufficiently thin to be easily bent. The folder is opened and a mount to which it is intended to attach a photograph is laid on one of the plates; then the photograph to be attached is laid on the mount, put in correct alignment, and the other leaf of the folder is gently closed over. The whole is then placed under the mounting apparatus and receives the necessary pressure to secure adhesion.

The plates may conveniently be of different finish to each other, for example, one of them may be highly polished to impart a glossy surface to the print, and the other finely ground or matt surfaced for a like purpose. Or the plates are made with double

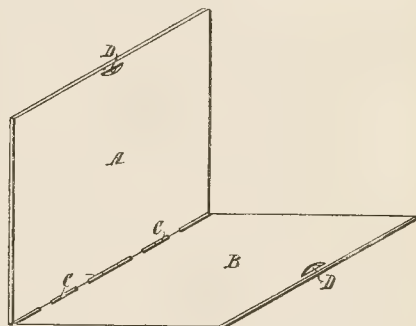


Fig. 1.

acting hinges, so that they be folded in either direction, thus allowing of four degrees of finish to their surfaces instead of two as in the former case.

The example shown in figure 1 consists of two plates A, B, having hinges C along one side, and provided near the other with apertures D, with any other convenient device for opening the plates.

In operation, the folder is opened, the mount is placed face upwards upon the one plate; on it is placed the print in proper alignment, the two are held in position with the fingers; the other plate is folded over, its resilience being such that the inner edges of mount and print can be held by its pressure before the outer edges are released by the fingers; and the whole is then placed in the mounting press and pressure applied.

In the example shown in figure 2, a distancing plate E is applied to one folding plate A, and on the other plate B are marked lines G for registration purposes. Or if the hinges C be double acting, the distancing plate and registering lines may be duplicated for folding in the reverse direction. The plate is for the purpose of concentrating the pressure applied upon the print, so

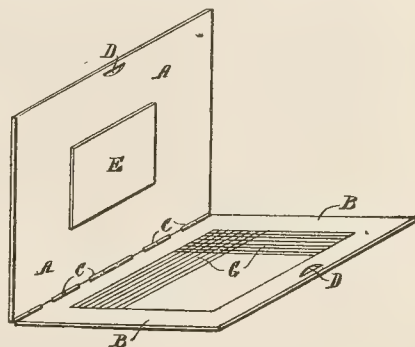


Fig. 2.

that mounts embossed or otherwise ornamented about their borders may be used without risk of their ornamentation being obliterated or damaged by the pressure applied.



In operation, the folder is opened, the print to be mounted is laid face down upon the ruled plate—its position being adjusted in accordance with the ruled lines—the mount is laid face down thereon—its position also being adjusted by the ruled lines; the other plate is folded over and the whole placed in the press and pressure applied. Or alternatively, the mount may be placed in position face up, the print laid thereon—both with due regard to position, and the other plate bearing the distancing plate E folded over. In this latter case the plate E may be surfaced in a manner to give any desired surface finish to the print.

The example shown in fig. 3 is adapted for plate-making, and it may be also embossing the mount. In it there is provided upon the ruled plate B a marking plate H—which may also be surfaced to impress the print. Upon the opposite plate A is a former frame J within which when the plates are folded together

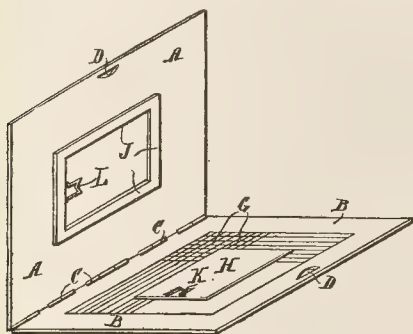


Fig. 5.

the marking plate H fits. A device such as the monogram K may be formed in intaglio in the marking plate H, or be attached thereto, while the counterpart relief L is formed in or attached to the plate A.

In operation, the folder is opened; the print laid face down in proper position upon the marking plate H; the mount—of course of sufficiently thin material—is superposed and the whole closed and subjected to pressure.

It is obvious that the folder and other plates need not of necessity be of metal—they must, however, be of material sufficiently hard to withstand, and sufficiently flexible to allow of the easy handling and placing in position of prints and mounts. George Wilson Morgan, 393, Union Street, Aberdeen.

**FOCUSSED PINION AS MIRROR RELEASE OF REFLEX CAMERA.**—No. 12,925. 1908. The invention consists in the connection of the focussing pinion (or the pinion head) with the releasing catch of the mirror in a reflex camera in order to provide a supplementary movement serving to release the mirror.

The camera may be of any ordinary construction with a swing or pivoted reflector A, a racking front B carried on racks C, and operated by a rack pinion D and a pinion head E. The reflector A may be retained by a lever F engaging its edge or otherwise as in figs. 1 and 2 or by a lever engaging a lever upon which the reflector is pivoted, and such as described in the specification of the former Patent No. 10,469 of 1908 ("B.J." September 11, 1908), or the lever F may act in any other arrangement to retain the reflector in position for focussing.

The retaining and releasing lever F is provided with a pin *f* or other device by which it is brought into contact with the pinion head E to which a sliding movement is given in addition to its rotary movement.

In the construction shown in figs. 1 and 2 the pinion head E is mounted upon the journal *d* of pinion D so as to move to and fro thereon a sufficient distance to press the pin *f* of the retaining and releasing lever F inwards to release the reflector, the mounting and journalling of the pinion remaining as before. A spring *e* returns the parts to normal position.

In the construction shown in fig. 3 the pinion head E is mounted loosely on the journal of the pinion D so that the latter can slide longitudinally therein and a collar *d*<sup>1</sup> on the pinion engages the retaining and releasing lever F. The locking bush

*d*<sup>2</sup> which fastens the pinion head on to the pinion projects beyond the pinion head E and serves as a push.

In the construction shown in fig. 4, the pinion D and pinion head E are rigidly connected and a push *E*<sup>1</sup> is inserted in the pinion head with pins *e*<sup>1</sup> which engage a collar *e*<sup>2</sup> against which the pin *f* of the releasing lever F engages—the spring *e* holding the collar in normal position. By pressing the push *E*<sup>1</sup> the collar *e*<sup>2</sup> is moved inwards to actuate the releasing lever.

Any other suitable form of connection between the pinion D

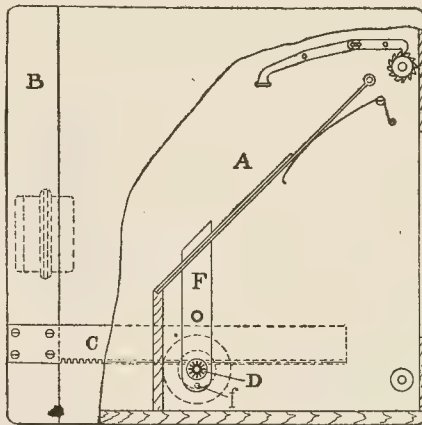


Fig. 1.



Fig. 2.

and the pinion head E may be adopted which will permit of a supplementary movement either to the pinion head or to the pinion or to both, and such movement may be in either a push or a pull. The same result can be obtained by pressing or moving the pinion head and pinion downwards, the bearing being held in normal position by a spring.

In the arrangement shown in fig 5 the bearing of the pinion D is in a pivoted plate *D*<sup>1</sup> pivoted at *d*<sup>3</sup> and held in gear with the rack C by a spring *c*. To the pivoted plate a lever G is

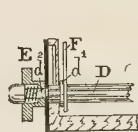


Fig. 3.

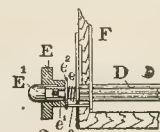


Fig. 4.

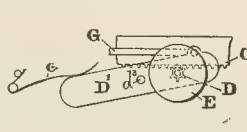


Fig. 5.

connected which when the pinion head E is pressed downwards is moved to release the reflector. On releasing the pinion head E the spring *c* carries the plate *D*<sup>1</sup> back and the pinion D into gear again with the rack C.

It is to be understood that any other suitable connection may be made between the pinion head E or the pinion D and the reflector releasing lever so that a supplementary movement of the former other than rotary will release the reflector. And also that it may be applied to any form of reflex or reflecting camera with racking front in which a swinging reflector, swinging mirror or focussing plate has to be released preparatory to the taking of the photograph. Thornton-Pickard Manufacturing Co., Ltd., Arthur Gray Pickard and Frank Slinger, Altrincham, Cheshire.

**STEREOSCOPIC LENSES.**—No. 27,644. 1907. The invention relates to lenses for photographic, stereoscopic and like apparatus by means of which two images of the same object can be superposed on the same plate in such a manner as to obtain negatives or prints giving the effect or idea of relief.

As shown in this drawing (fig. 1), the apparatus comprises two semi-lenses obtained, for example, by dividing a single lens along a diameter thereof; the semi-lenses are placed in such a manner that the faces of the diametral planes of section are opposite to one another. In the case in which these semi-lenses are fixed in circular mountings *b*, the other halves of the lenses

are placed by opaque bodies *c*. The two lenses *a* are placed a suitable distance apart. Behind these lenses are arranged two systems of prisms *d, e*, giving a total reflection, which displace the rays 1, 2 coming from the object, and throw them upon a lens or objective *f* which causes them to converge along the lines 3, 4 to a point *g* on the plate.

The images formed by the rays 1, 2 are thus superposed at the focus of the system which operates as if the two half lenses *a* were united at the front of the lens *f*, but since these rays

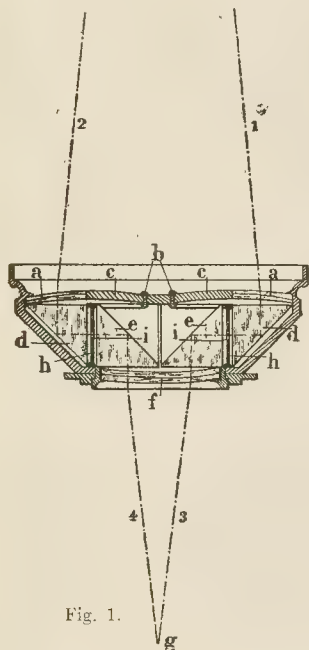


Fig. 1.

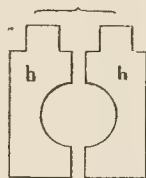


Fig. 2.

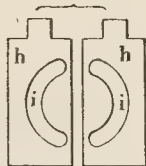


Fig. 3.

1, 2, have a certain separation, the two images, by being superposed, give the effect or idea of relief. These two images not being identical, the rays 1, 2 should not be separated beyond a certain limit, beyond which superposition becomes impossible.

As is seen, this arrangement thus automatically superposes two images at the focus of the apparatus.

Figs. 2 and 3 represent two types of diaphragms or screens intended for use in the apparatus shown in fig. 1. Each screen is formed by two plates *h*, those illustrated in fig. 2 showing an opening at or towards their centres, so that only the rays which are central with relation to the optical system, are utilised. The diaphragm or screen illustrated in fig. 3 is provided with apertures *i* in the form of annular segments which permit only the most refracted rays to be received. These plates are placed between the prisms as shown in fig. 1. Luiz Augusto Teixeira de Aragao, 40, rue Perronet, Neuilly sur Seine (Seine.)

**FOLDING CAMERAS.**—No. 28,464. 1907. The invention comprises various devices to be employed in a very small box or fixed body camera, the body of which forms a spool-holder for the sensitive roll-film. There is provided, firstly, a new form of twin strut for supporting the camera front, made preferably from a single stamping, bent at suitable angles, and provided with ears or lugs which extend beyond the usual limits, and are pivoted externally to the camera body. Some of the advantages of this plan of construction are that the struts, having a longer reach, accommodate a longer focus lens than has hitherto been possible, and the fact of their being of twin like formation, reduces the number of parts, whilst the extended ears or lugs being pivoted externally, to the camera body, simplifies the assembling of such parts. Secondly, a front plate of new design which at once forms a means for opening the camera and a supporting foot for the

said camera when open. Thirdly, a new method of forming the key way in the spools and a simple key for engaging therein, dispensing with the necessity of a sliding key, such as cameras of this type are usually provided with, and which are of more or less complicated construction. Magnus Niell, Djursholm, Sweden.

**WATCH CAMERAS.**—No. 32. 1908. The invention relates to the type of camera made in the form of a watch in accordance with Patent Specification, No. 21,295, 1904. Improvements now made in this description of camera allow of (1) provision within the camera to accommodate a view finder which is made to automatically spring into position by the setting of the shutter. (2). A spring-operated safety cover over the lens-aperture which allows the shutter to be set without admitting light to the sensitive film, and acts as the shutter release when retracted against the tension of the spring. It also performs the function of a time-exposure shutter when the exposure opening of the ordinary shutter is adjusted opposite the lens. (3). A lens situated at the side of camera instead of in the stem as formerly, the stem being utilised to act as the film winder in the same manner as the winding stem of a keyless watch. (4). A novel form of roll holder arranged to lie diametrically within the case of camera, with the focal plane situated at its rear part to preserve the necessary focal distance. Magnus Niell, Djursholm, Sweden.

**AFFIXING CAMERA ACCESSORIES.**—No. 8,201. 1908. The invention relates to the fastening of accessories such as view-finders, vignettters, etc., to a camera. The objects to be fixed, or the rails or the like which support them, are connected with the camera by the means of the usual screw socket or bushes or to the screw which engages therewith.

The device is provided with an intermediate piece which is either clamped between the stand and the camera, or can be fixed as desired to the bottom of the camera by means of a special thread on the stand or by a special bush or screw socket on the bottom of the camera, or to the stand itself. Karl Lenck, 154, Friedrich Strasse, Berlin NW 7, Germany.

**NEGATIVE WASHER.**—No. 13,281. 1908. The claim is for a washing tank in which the negatives themselves are held in place against the corrugated inner face of the movable cover by a series of spring-pressed clips. The negatives are thus carried into position within the partitioned receptacle when the lid is closed thereupon, and will be removed therefrom at the completion of the washing process.

Means are further provided for retaining the receptacle cover in open position, whereby (when in such position) the cover may be utilised as a rack. John Henry Rubenking, Jr., Barton view, State Illinois, U.S.A.

## New Trade Names.

**WINGED SHIP (DEVICE).**—No. 302,236. Chemical substances used in manufactures, photography or philosophical research, and anti-corrosives, but not including glycerine, jellies, oils, or greases, or any goods of a like description. Paul Ruben, 56, Leadenhall Street, London, E.C., general merchant. April 13, 1908.

**GLADIATOR.**—No. 306,269. Photographic dry plates and sensitised films. Mawson and Swan, Ltd., Mawson's Buildings, Mosley Street, Newcastle-on-Tyne, Northumberland, chemists and scientific instrument makers. September 17, 1908.

**RADEX.**—No. 307,613. Photographic cameras. Arthur Lewis Adams, trading as Adams and Co., 24, Charing Cross Road, London, W.C., photographic apparatus manufacturer. November 3, 1908.

**STUDEX.**—No. 307,614. Photographic cameras. Arthur Lewis Adams, trading as Adams and Co., 24, Charing Cross Road, London, W.C., photographic apparatus manufacturers. November 3, 1908.

**GLADIATOR.**—No. 306,270. Sensitive photographic papers. Mawson and Swan, Ltd., Mawson's Buildings, Mosley Street, Newcastle-on-Tyne, Northumberland, chemists and scientific instrument makers. September 17, 1908.

**"DEX."**—No. 307,156. A paste for mounting photographs. Aubrey Wilme Collier, trading as A. Wilme Collier, 8th Avenue Works, Manor Park, London, E., manufacturer. October 20, 1908.



## Analecta.

*Extracts from our weekly and monthly contemporaries.*

### Strong Prints from Weak Negatives.

Mr. A. H. Hall, writing on this subject to "The Amateur Photographer and Photographic News" for December 1, says: "The easiest method, to my mind, is to make a weak gaslight print, i.e., give an exposure that is too short to obtain full density, but long enough to give full detail without veiling, and to intensify by the well-known bichromate method, followed by re-development with amidol. For the development of the print, in the first case I much prefer well-restrained pyro soda. Development will be somewhat slow, and unless the negative is quite abnormally thin, full density can often be obtained without any further manipulation. The print may be of a pleasing sepia, but is more likely to be a most unpleasant greenish black. It is, therefore, better to stop development before full density is obtained, and intensify as suggested above, when the resulting print will be found to be a pleasing black. A method that gives even finer results, but is rather more trouble, is to make a weak print, harden it, and make an ozobrome on top of the image so formed. The print should then be dried, and when dry, the underlying image can be re-developed with amidol or toned in the sulphide bath. Very fine results can be obtained by this means; in fact, some of the best prints I have been made from a bromide that has inadvertently been under-exposed, with an ozobrome print superposed. A sepia bromide on a print that has been re-developed with amidol gives a very fine warm black. The secret of both these methods is to get a print in the first place that has no signs of veiling, yet is as strong as possible. This entails several trials to get the exact exposure, but the results are certainly worth the trouble involved."

### Christmas Mottoes on Photographic Christmas Cards.

A writer in "Photography and Focus," for December 1 gives the following hints for printing suitable "greetings" on photographic cards. "In most cases it is best to print whatever inscription is required in white letters, and one of the easiest ways of doing this is the following:—Some old celluloid film is obtained, and the gelatine coating is cleaned off it with water and washing soda. Hot water must not be used, as it cockles the film. When quite clean, one side of the film is roughened with some very fine emery powder, and it will then be found that it can be written upon without the ink running. The celluloid film bearing the motto is next fastened in position on the negative with a piece of stamp-paper, the writing being next the film of the negative. The Christmas card can then be printed in the usual way, and the lettering will show up plainly upon it in white. It is advisable to use Indian ink for writing on the film, as this will be found to dry very much blacker than ordinary writing fluid. The edge of the film may sometimes show in the finished print, but this can generally be avoided by trimming the film so that the edge of the celluloid follows some lines in the picture, such as the side of the road, the top of a wall, or some similar detail.

With some subjects, such as snow scenes, for example, the lettering has to appear darker than the rest of the picture. This is rather more troublesome, but does not present any great difficulties. To do it we proceed to write the wording on a smooth sheet of white paper, or if this is beyond the ability of the photographer he can get his stationer to have it printed. This is then photographed in a good light, and so gives us an opaque negative with the words transparent. The picture is printed in the usual way, and the print is then placed under the negative of the lettering, which is then in its turn printed. The words soon appear clearly in dark lettering, while the rest of the print is protected by the black negative."

**PHOTOGRAPHER'S STOCK RAIDED.**—Some persons, bent on theft as well as wilful destruction, forced an entrance to the shop of Mr. Joseph A. Hall, photographer, of Holmside, Sunderland, one night last week. They did not content themselves with stealing goods worth about £10, but did damage in addition by smashing plates and other articles to the amount of about £30.

## Dew Apparatus, &c.

The "Ensign" Lantern Screen. Made by Houghtons Ltd., 88 and 89, High Holborn, W.C.

A very ingenious and convenient form of lantern screen, suitable for pictures projected to a moderate size, is being introduced by Messrs. Houghtons, under their general trade name of "Ensign." The two drawings explain the construction and mode of action of the screen. The baseboard is formed by the box, which is caused to stand steadily by the two feet seen in Fig. 1, which feet are turned in flush with the box when the screen is being put away, as shown in



Fig. 1.

Fig. 2. The supporting frame contains two vertical supports hinged about half-way along their length, and each connected with the top piece, which carries the screen. This latter is attached to a spring roller, and is operated in the way customary with this domestic accessory. The erection of the framework is the work of a second or two, and calls for no standing on chairs or reaching to the top of the

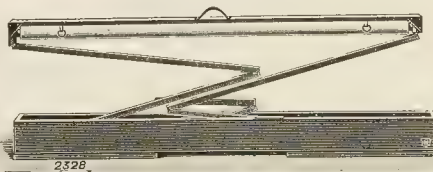


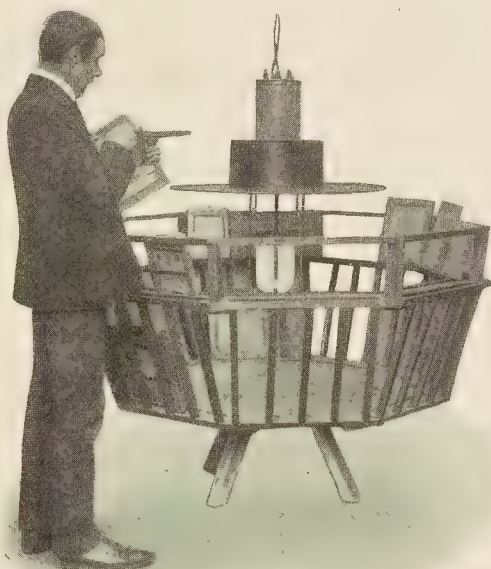
Fig. 2.

frame. All that is necessary is to raise the side pieces and press the locking struts into position. The screen is thus a most convenient one for schoolrooms, home use, or wherever a 4ft. or 6ft. picture is large enough. In sizes for these two discs the apparatus costs 32s. 6d. and 42s. respectively, complete with frame, case, and screen.

The Westminster No. 1 Printing Frame for Arc Light. Made by the Westminster Engineering Co., Ltd., Victoria Road, Willesden Junction, N.W.

The form which this apparatus takes is clearly shown in the accompanying drawing from which it will be seen that printing frames are placed round the shaded arc lamp in two rows, the upper frames being placed upon a narrow shelf whilst the lower

ones rest on the floor of the apparatus. The depth of the apparatus, 2ft. 2in., allows of frames of the largest size being employed, whilst as many as 70 half-plate frames can be accommo-



dated. The apparatus is mounted on a ball-bearing centre, which permits of it being rotated by a touch of the hand, any frame being thus instantly got at, and the intermittent rotation of the apparatus further equalising the light. Two distinctive good features of the apparatus are that the frames are put in without requiring to be attached in any way, and that the operator is never exposed to a glare of bright light, the broad shade over the arc cutting off direct rays from the latter, and allowing of the papers being examined without fear of veiling the sensitive surface, and further without so dazzling the printer's eyes that he is unable to judge of fine detail in, say, a platinotype print. The price of the apparatus complete with light shield is £4 10s.

## New Books.

"Deutscher Camera Almanach," 1909. Berlin: Gustav Schmidt. M4.

Since the commencement of the preparation of this volume for the press, the death of Herr Fritz Loescher, the editor, has taken place, and the completion of this work has thus been in other hands, those of Herr Otto Ewel. Still, the volume is produced on the lines of its four predecessors. It includes a large number of reproductions of German, French, and British examples of current pictorial work, accompanied not by criticisms thereof (for this relief much thanks: one can easily have too much of the art critic's comments), but by contributed articles upon topics which are about equally divided between the æsthetic and technical aspects of photography. Where illustration is so ample there must necessarily be a good sprinkling of the ordinary, but one or two reproductions of notable merit are the beautiful landscape of Ledenig (we hope this worker will be represented in the next R.P.S. Exhibition), Mr. E. O. Hoppé's portrait of Maud Allan, M. Demachy's "Trouville," and a delightful bit of landscape by M. Vanderkindere. Of the articles, that of perhaps chief interest is M. Demachy's on the oil process. The work of the photo-engraver and printer has been admirably done, and though the shiny "art" paper is rather distracting, no contributor can complain that his original has not been perfectly "brought up."

"Deutscher Photographen Kalender," 1909. Part II. Weim Office of "Deutscher Photographen Zeitung. M2.

This second part of the compact and useful calendar of Herr I. Schwier contains, as usual, a diary for 1909 and the compendium tables and codified facts relating to photography, and comp chiefly for the use of German-speaking photographers. The last portion consists of a formulary of photographic processes from collodion, dry-plate methods, including orthochromatics, through positive printing processes to miscellaneous recipes and prescriptions. The inclusion of catatype, ozobrome, and carbograph is an instance of the revision which has taken place in these portions of "Kalender." Also, we now see a number of formulæ for the sepia or sepia toning of bromide prints and other evidences of Herr Schwier's publication being kept abreast of current progress.

"The American Annual of Photography." Edited by John Tennant. London, Dawbarn and Ward, Ltd., 6, Farring Avenue, E.C. 3s. net.

The text portion of this handsomely printed volume is ably equally divided between a number of contributed articles and reproductions of photographs which, in the majority of cases, evidently have a pictorial aim. A good many workers well known in European circles are here represented, as also some very interesting work of some of the American professionals, such as Herr Hall and Charles H. Davis. The contributions mostly assume the character of articles on practical expedients and methods relating to commercial and professional photography almost as much as the camera as an amateur pursuit. There is a directory of American photographic societies, and a brief, but useful, formulary of recipes for developers, printing processes, etc.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

#### FRIDAY, DECEMBER 4.

Sutton Photographic Club. "Printing on Bromide Papers." Andrew Pringle.  
Mill Camera Club. "Photographic Chemical Experiments." E. Cooper.  
Aberdeen Photo Art Club. "The Decorative Element." J. A. H. Hector.  
Bury Athenæum Amateur Photographic Society, Bury. Dutch Lantern Pictures.  
A. E. Staley & Co.  
L.C.C. School of Photo-Engraving, Bolt Court. "Max Levy Etching Machine."  
W. Gamble.  
Lancaster Photographic Society. Competition Lantern Slides.

#### SATURDAY, DECEMBER 5.

St. Helens Camera Club. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.

#### MONDAY, DECEMBER 7.

Scarborough and District Photographic Society. Photography Prize Slides.  
South London Photographic Society. Lecturette Competition.  
Kidderminster and District Photographic Society. "A.P." Prize Slides.  
Bradford Photographic Society. "Large Bromide Prints from small Negative."  
A. Braeewell.  
Stafford Photographic Society. "Carbon Printing and Ozobrome." W. Leonard Hey.  
Cripplegate Photographic Society. "The Bromoil Process." F. J. Mortimer.  
F.R.P.S.  
Southampton Camera Club. Affiliation Lecture.  
Lancaster Photographic Society. "Glimpses of Wales as seen through a Camera."  
E. Youds.  
Leek Photographic Society. Monthly Lantern Night.  
Catford and Forest Hill Photographic Society. "A Ramble through Kent and Surrey with Walker Miles." Alfred Bedding.  
Manchester Y.M.C.A. Photographic Society. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.

#### TUESDAY, DECEMBER 8.

Royal Photographic Society. Presidential Address, "The Progress of Photography amongst the Arts."  
Leeds Photographic Society. "Enlarged Negatives on Paper." R. Stockdale.  
West Calder Photographic Society. Dutch Lantern Pictures. A. E. Staley & Co.  
Hanley Photographic Society. Y.M.C.A. Exhibition of Thornton-Pickard Prize Slides and Apparatus. R. Heaseth.  
Hackney Photographic Society. Excursions' Print Exhibition and Competition.  
Birmingham Photographic Society. "Bromoil." Demonstrated. J. Gale.  
Epsom and District Literary and Scientific Society. "Goetz Lens." Illustrated.  
Halifax Camera Club. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.

#### WEDNESDAY, DECEMBER 9.

North Middlesex Photographic Society. "Cristal Films." E. Ridge.  
South Suburban Photographic Society. "A French Wonderland and the Devil's City." J. A. Sinclair, F.R.P.S.  
Wimbledon Park Photographic Society. "Alone with the Sky and a Camera." T. F. Connolly.  
Croydon Camera Club. "A Dive into Belgium." W. L. Wastell.  
Borough Polytechnic Photographic Society. "After-Treatment of the Negative." P. Gaden.



Leds Camera Club. "Florence to Marseilles." C. B. Howdill, A.R.I.B.A.  
 Hignouse Photographic Society. "On the Printing, Developing, and Toning of  
 Velox Papers." W. F. Slater.

## THURSDAY, DECEMBER 10.

Richmond Camera Club. "Pollens." Dr. Rodman.  
 North-West London Photographic Society. "A Trip to Norway and the Arctic  
 Circle." Walter Kilbey.  
 Melbourne (London) Camera Club. "Exposure and Development." The President.  
 Aberdeen Photo Art Club. Informal Meeting.  
 Aberdeen Photographic Society. "Flower Photography." E. Seymour.  
 Maidstone and Institute Camera Club. "The Carbon Process." H. Witcombe.  
 Rodley, Farsley, Calverley, and Bramley Photographic Society. "Ozobrome."  
 Mr. Womersley.  
 Leek Photographic Society. Judge's Awards. Print Competition.  
 Handsworth Photographic Society. Midland Federation Slides.  
 Rugby Photographic Society. "The Carbon (Autotype Co.) Process." A. W.  
 Fell.  
 Liverpool Amateur Photographic Association. "The City of Oxford" W. A.  
 Taylor.  
 Open Valley Literary and Scientific Society. "On the Printing, Developing, and  
 Toning of Velox Papers." W. F. Slater.

BIRMINGHAM PHOTOGRAPHIC SOCIETY. — On Tuesday evening, November 24, a lecture, entitled "The Land of Canals, Carillons, and Coifs," was given by Mr. C. B. Howdill, of Leeds, before a good audience, Mr. Harold Baker in the chair. The lecture opened with a short historical sketch of the Netherlands, then commencing on his journey Mr. Howdill led his audience via Dover-Ostend to Bruges, where he explained that the carillons in the church towers give out their chimes every 7½ minutes and play a complete tune every hour; on to Brussels, which boasts the finest municipal buildings in the world, where he was fortunate enough to witness the bicentenary procession to commemorate the rebuilding of the Guild-houses; travelling northward to Antwerp, where the tower of Notre Dame contains a carillon of ninety-nine bells. From here he visited The Hague, Leyden, Haarlem and Alkmaar, all of which suffered severely during the Spanish wars, thence by canal to Amsterdam and Marken, and home via the Hook of Holland. The lecture was interspersed by ray stories, and was of considerable topical interest. A series of slides illustrating the coifs or head-dresses of various parts of the country being a particular feature; and several slides by the Sanger-Shepherd process of pictures by Jan Steer, Teniers, and Rembrandt, which Mr. Howdill had obtained permission to photograph in the Ryks Museum at Amsterdam, were well received.

## Commercial & Legal Intelligence.

LEGAL NOTICES.—A first and final dividend of 2s. 3d. in the £ is to be paid on December 10 in the case of Ralph Winter Thomas, photographic dealer, residing at 28, Burghley Road, St. Andrew's Park, Bristol, and carrying on business at 69, Stokes-croft, Bristol.

ARTISTIC "GUILDS" AND "ASSOCIATIONS."—At Hereford last week, Jack Davies, photographer, Gothic Cottage, Widemarsh Street, was charged on adjournment with being the bailee of a certain picture of the value of 15s., the property of Virginia Large, Stanhope Street, and unlawfully and fraudulently converting the same to his own use on October 29. He was also charged with, being the bailee of a certain picture, value 10s. 6d., the property of Miss Frances Evans, Chandos Street, which he did unlawfully and fraudulently convert to his own use on October 21.

Mr. W. M. Akerman prosecuted for the police, and Mr. E. A. Capel defended.

Evidence was given by Mrs. Virginia Large to the effect that defendant came to her house one day in October last and asked her to lend a picture he had previously enlarged for her. She first of all saw the defendant's wife about September 1. Witness subsequently handed her a photograph which was enlarged. She gave the order on September 9, and the defendant asked for half the amount of the cost, which was 7s. She handed this amount to him, and subsequently paid him 14s., and 1s. extra for another mount. The defendant called again with reference to some midgets, and she paid half of the account. On October 19 the defendant borrowed the picture he enlarged and the frame, telling her that he desired to show it to a lady at Burghill. He promised to bring it back on the next day. On the following day she received a postcard from him. It was addressed: "Art Company, Gothic Cottage, Widemarsh Street," and signed "J. Davies," and it purported to explain a delay in not returning the frame. On the 22nd she had another postcard, asking her to excuse the return of the frame until a further date. She sub-

sequently saw the defendant's wife on the 24th, and she said the defendant was out with the picture, having gone into the country. On the 26th she received a letter from him promising to return the photograph later on, and to make her the present of an extra photograph for keeping her so long. The defendant's wife subsequently showed her the picture without frame or glass. She said her husband had not come back from Manchester. Mrs. Davies afterwards said she would see that the frame was all right. Witness paid subsequent visits to Gothic Cottage, and found the Davies' had gone. She applied for a warrant on November 9. Afterwards she received a postcard from Cinderford signed "E. Davies."

The prisoner said he was at present living at Cinderford. When he first went to Gothic Cottage, Hereford, he worked for his brother. His brother left about five weeks afterwards, and he (defendant) continued to work at Hereford on his own account. He borrowed Mrs. Large's framed photograph to show to customers, and admitted saying he would return it, but he broke the glass and damaged the frame. He then took the frame off the picture and used it for another because he was short of money at the time. He meant to replace the frame. He got his frames from Manchester. He had no intention of robbing Mrs. Large or anyone else. He was absolutely broke, and he wrote to his brother, who came to an arrangement to finish and deliver the pictures that were there as soon as he had the chance. Amongst the pictures was Mrs. Large's. He endeavoured to get work in London, but did not succeed, and then returned to his brother. They could not get a further supply of frames in time owing to the removal of a firm in Manchester. His brother had executed several of the orders since his arrest, and the others would have been completed only the photographs were in the possession of the police.

Cross-examined: Mrs. Large's frame was now at Holme Lacy, having been supplied to a customer there. He was not in partnership with his brother. His brother's firm was "The American Artistic Guild." He was his brother's servant. He was three years older than his brother. His brother's banking account was at the United Counties' Bank, Broad Street, Hereford. He (prisoner) came from Manchester to Hereford. He either called himself "H." or "J." Davies. At Manchester he worked for the Apollo Art Association. There were no complaints about his business in Kendal. There were no complaints in Hereford about frames. With regard to Mrs. Large's frame, he had been paid for it twice over. He admitted using several of his customers' frames, but he intended to replace them. He had had about twenty frames from Manchester.

Prisoner denied convictions at Manchester in the name of Louis Beerbohm. He had a brother living at 6, Pembroke Street, Manchester.

Izidore Davies said he was known as Izzy Davies. He left Hereford because he wanted to work by himself. He went to Ross. He received a communication from his brother's wife, and accordingly went to Hereford. His brother then explained his position, and asked him to help him. He promised to meet the demands of the customers. He immediately started to complete the orders. He bought some frames at Bristol, and intended to frame the remaining photographs, but the police had in the meantime taken them away. He produced acknowledgments purporting to show that he had completed some of his brother's orders. As soon as he got the photographs in court in his possession he would complete the orders. Mrs. Large could have the frame produced in court.

Cross-examined: He bought the frame produced in order to accommodate his brother, and meet Mrs. Large's demands. The business was his. He did not have studios at Chicago, Manchester, Edinburgh, Carlisle and Lancaster. It was a matter of form to state so on his circular issued from the Merton Hotel, Hereford. An enlargement of Mrs. Rudge, of Ledbury Road, would be delivered when she paid the balance. She had paid half the amount, 6s. 6d. He would not execute the order until the other half had been paid, because he had been "had" by other people.

The Chairman said the Bench had carefully considered the case, and were quite satisfied that the defendant fraudulently converted the frame to the use of some person other than the owner, and, consequently, was guilty of larceny within the meaning of the Act.

The Chairman said he was sorry to see a young man like defendant in court on such a serious charge, and he would be fined £15, or two months' imprisonment with hard labour.

LUXIA COMPANY. —In the Chancery Division recently, before Mr.

Justice Eve, the action of *Berger v. Turtle* was heard. Mr. Ward Coldridge said this was a motion by plaintiff (Mr. Maurice S. Berger) for the appointment of a receiver of a business carried on in partnership by plaintiff and defendant as manufacturers of sensitised paper called "Luxia." The parties had got along for some years amicably, plaintiff attending to the technical part of the business until quite recently. In 1906 there was a suggestion by defendant that the business should be sold, and a written agreement was entered into, under which plaintiff was to have a share of the proceeds of sale. Plaintiff was described in that agreement as manager, and apparently defendant thought he could get rid of his partner now by merely giving him notice. Plaintiff then issued a writ claiming the usual relief in an action for dissolution of partnership. In his affidavit plaintiff stated that he founded the business in conjunction with defendant, who was his father-in-law, and they entered into a verbal agreement of partnership on the terms that they should trade as the Luxia Company. The name "Luxia" was invented by plaintiff to describe certain formulæ which plaintiff alone understood.

The defendant, who appeared in person, said he denied most emphatically that he ever entered into an agreement of partnership with the plaintiff. Plaintiff relied on the agreement of April 9, 1906, as constituting the partnership, but that was not an agreement of partnership, and was never intended by either party as such. A one-third share was distinctly stated to be given to the plaintiff as bonus, and no partner received bonuses. The business was absolutely his (defendant's), as he bought it from trustees. Plaintiff was also claiming salary due to him as manager from him (defendant), and he could have dismissed plaintiff with a month's notice at any time. The agreement in question was entered into two days before he underwent a serious operation simply that he might get the formulæ which plaintiff had always refused to give, saying they were incomplete, and he (defendant) had to employ a chemist to complete them. Plaintiff had acted treacherously by going to his (defendant's) largest creditors saying he was selling the business to a limited company. Plaintiff had never put one penny into the business, and he (defendant) had lost £8,000 from first to last in trying to find this son-in-law employment.

His Lordship remarked to Mr. Coldridge that he felt a difficulty because the agreement mentioned on the writ was certainly not a partnership agreement. Mr. Coldridge said the contention of the defendant was absurd. He said he obtained these valuable formulæ, without which the business was useless, merely by appointing his son-in-law manager, with power to dismiss him next day.

In the result his Lordship said he would let the motion stand over until Friday week, with leave to the plaintiff to amend the writ and notice of motion, and Mr. Turtle must be prepared, if he denied the existence of a partnership, with an affidavit to that effect.

On November 20 Mr. Coldridge said he had to renew the application he made on the previous Friday for the appointment of a receiver and manager of the business carried on by the parties in partnership as the Luxia Company, makers of sensitised paper.

Without calling on the defendant, who appeared in person, his Lordship gave judgment. He said he understood that defendant was the father-in-law of the plaintiff. Defendant had strenuously denied that there was any partnership, and it was quite obvious to him on the evidence filed that the plaintiff had not in his affidavit in reply dealt with the only material paragraph in the affidavit of the defendant that there never existed any verbal partnership. Under these circumstances, and holding that the agreement exhibited negatived the existence of any such relationship, he had no alternative but to dismiss the motion with costs.

Defendant said plaintiff was retaining the keys of his safe and premises.

His Lordship said he could make no order for the return of the keys on that occasion. He could only intimate that the plaintiff had no right to retain the keys. Motion refused, with costs.

**PHOTO-FRAME DISPUTE.**—In the City of London Court, on November 24, before Judge Rentoul, K.C., and a jury, an action was brought by Mr. Hans L. Zinck, manufacturer of photo frames, Mühlberg-in-Thüringen, against S. Hildesheimer and Co., Ltd., photographic dealers, 96, Clerkenwell Road, to recover the sum of £74 1s. 4d. for photo frames supplied. Mr. L. Tyfield and Mr. A. Bryan appeared for the plaintiff, and Mr. Given and Mr. Gervase

Rentoul for the defendants. Plaintiff's case was that his representative in England, Mr. Abrahams, 54, Redcross Street, Finsbury, was anxious to obtain orders for photo frames from the defendants. Abrahams endeavoured to induce the defendants' manager of the photo-frame department to come and see his samples. Mr. O. F. Hoffmann, the defendants' manager, called, and, after an inspection, he gave an order for £82 9s. 6d. worth of photo frames, which included 100 samples to send out to the travellers who were to take the order. All the goods had to be made specially for the defendants. Abrahams' principals in Germany. A portion of the goods had been sent, Messrs. Abrahams received a letter from Mr. S. Hoffmann, the defendants' manager, saying that he did not see sufficient profit in the frames, and that Pym had no business to have given the order, which was only conditional on Sonn's approval, and that was not given. Pym had asked Abrahams to hold the goods over, and plaintiff came to the conclusion that the defendants were making a loss, they were asked to pay for the goods which had been ordered in the general way. Plaintiff's agent did not take the order subject to any confirmation, but it was an out-and-out sale. Four months after the order had been given the defendants declined to accept the goods, and the present action was brought. Mr. Abrahams' explanation, said he was paid on commission; but it had not been paid in the present transaction. He would not have accepted the order if it was subject to a confirmation. He did not say he would try to sell the goods elsewhere to save getting into trouble with his firm. For the defence, Mr. Oscar Pym was called, and said he never gave any definite order. He had no power to do so without his manager's confirmation, and that was never done. Sonn's sanction was never given to the goods being received, and therefore had to be refused. Mr. Edward Sonn said no order was confirmed by him in the matter, except for samples which they paid for. There was a clause on their order forms stating that no order was valid unless it was in writing and countersigned by himself, the secretary of the company. That had never been done in the plaintiff's case. The jury found that the defendants gave the order. Judge Rentoul said that there was no evidence of damage, and he could award the plaintiffs was £d. and costs.

**EASTMAN KODAK COMPANY OF NEW JERSEY.**—The usual quarterly dividends of 1½ per cent. (being at the rate of 6 per cent. per annum) upon the outstanding preferred stock, and of 2½ per cent. (being at the rate of 10 per cent. per annum) upon the outstanding common stock of the Eastman Kodak Company of New Jersey, to be paid on January 1, 1909, to stockholders of record on November 30, 1908.

**A CHATEAU BANKRUPTCY.**—The first meeting of the creditors of William Beard, 78, Canterbury Street, Gillingham, near Chatham, photographer, formerly of 113, High Street, Gillingham, and of Brompton, took place on Monday at the Official Receiver's Office, Rochester. The statement of affairs showed gross liabilities £4s. 6d., of which £44 was given as partially secured by bill of sale on the debtor's furniture at his last address. The debtor filed his own petition, and at the time the county court were in possession of his effects under a warrant of execution issued by creditors. The deficiency is stated to be £689 6s. 6d., as, apart from the goods on which the bill of sale was given, the debtor has no effects. He began business in March of 1897 at High Street, Gillingham, in partnership with a Mr. Harry Hill. This partnership was dissolved in March, 1898, and debtor carried on the same business in his own name. After this he appears to have taken another partner, Mr. Thomas, and traded in coals. This partnership has, however, been dissolved, as from March, 1905. At the public examination (at Rochester County Court) in the afternoon of the same day, the debtor stated (in answer to Mr. R. O. Tatham, the Official Receiver) that he was unable to tell his financial position at any time from the books he had kept, as the ledger only recorded what was owed to him and not what he owed to his creditors. He was overdrawn at the London and Provincial Bank to the amount of £245, but this was guaranteed by a Mr. Thomas, and he, in turn, was guaranteed by the debtor's wife in respect of a reversionary interest due on mortgages, and due to the wife upon the death of her mother. Mr. Thomas, a former partner, had also advanced him £250 in various sums from time to time, and he had used the money in the payment of debts. The debtor (who was represented by Mr. W. A. Watts, solicitor, Chatham) was allowed to pass, upon signing notes. There were no creditors present to oppose him.



**FRAUD BY CANVASSERS.**—Last week, at Broxburn, near Edinburgh, two men named John Paul and William Davidson Gray, canvassers, 100, Victoria Street, Bathgate, were charged with pretending to various people that one of them, Gray, was collector for Mr. John McLaren, photographer, Broxburn, and thus induced people to deliver to them various sums of money, which they appropriated to their own use, on Wednesday, November 11. Paul did not put in an appearance, and a warrant was issued for his apprehension. Gray pleaded guilty to the charge. The Fiscal stated that Paul had really been employed by Mr. McLaren, Broxburn, to take orders, but had no authority to collect money. He first called on these people and got their orders, and some time later on brought round Gray, whom he represented as McLaren's collector. As already stated, he induced people to hand over sums of money. Gray was not in McLaren's employment at all. Judge Grieve characterised the fraud as a most contemptible one, and said that the community must be protected from such men as Gray. The penalty would be ten days' imprisonment, without the option of a fine.

#### NEW COMPANIES.

**A. DUGGLEBY, LTD.**—Registered November 10. Capital £1,000, in £1 shares. Objects: To take over the business of a chemist, druggist, dealer in patent medicines, drugs, optical and photographic requisites, carried on by Albert Duggleby at 81, Leigh Road, West Cliff-on-Sea, as Duggleby's Drug Stores. Private company. Registered office, 81, Leigh Road, West Cliff-on-Sea.

## News and Notes.

**THE R.P.S. DINNER.**—The annual dinner of the Royal Photographic Society took place at the Holborn Restaurant on Tuesday last, the president, Mr. J. C. S. Mummery, presiding. The usual royal toasts were given and responded to with enthusiasm. Lord Redesdale proposed success to the society specially coupling with it the name of the president. Mr. Mummery in responding said that he had no intention of giving on that occasion any detailed account of the annual report, but touched a little upon the work of the society and the recent exhibition, which, notwithstanding the counter attraction of the Franco-British exhibition had proved a complete success. The musical arrangements, which were under the direction of Messrs. Furley Lewis and A. W. W. Bartlett, were much appreciated by all present, and the company did not disperse until a late hour.

**GLASGOW SOUTHERN PHOTOGRAPHIC ASSOCIATION.**—At the annual exhibition of the above society, to be held in the Club Rooms, Eglinton Street, from January 19 to 30, 1909, there will be three competitive classes open to all photographers, one of which will be specially devoted to colour photography. Messrs. Archibald Cochrane and E. Christie have consented to act as judges, and bronze plaques will be placed at their disposal for award. There will also be several special awards, including a silver plaque for the picture which in the judge's opinion is the best sent in for competition. Entries close December 30, 1908, on or before which date all entry forms, accompanied by entry fees, must reach the hon. secretary, Mr. R. Lindsay, 88, Eglinton Street, Glasgow, S.S. Mr. Lindsay will also be pleased to supply any further information, together with entry forms, to those applying for same.

**COUNCILLOR G. E. HOUGHTON.**—At the bye-election for the filling of vacancies upon the Margate Town Council last week, Mr. G. E. Houghton was elected a member of the Council for the forthcoming year.

**DEATH OF HERR W. KNAPP.**—We regret to hear of the death, on November 24, of Herr W. Knapp, for many years head of the well-known firm of technical publishers bearing his name. Herr Knapp occupied a unique position as a photographic publisher, for from his press at Halle a whole series of photographic periodical and other publications emanated, and he was widely known and respected in photographic circles.

**WEST HAM EDUCATION COMMITTEE,** at their meeting on Monday, agreed to place an order with Messrs. W. Tylor, Ltd., to supply 10,000 lantern slides per annum each to Holbrook Road and Star Lane schools for the purpose of illustrating certain lessons, at 25 s. per school, on condition that the slides are to be retained at the schools for a period not exceeding forty-eight hours.

## Correspondence.

- \* \* Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.
- \* \* We do not undertake responsibility for the opinions expressed by our correspondents.

#### CARD-FILING FOR STUDIO BUSINESS.

To the Editors.

Gentlemen, We have read with interest Mr. Foster Brigham's article on "The Card-Filing System for Professional Portrait Business," and we would venture to suggest that we have been advocating this method of keeping studio accounts, registering appointments and progress of work, for some time past. We have had on sale for over a year cabinets and outfits with the cards ruled and subdivided in a complete and yet essentially simple manner. These printed cards are more easy to keep posted than the written cards illustrated by Mr. Brigham, and they have the advantage of always keeping the same kind of information in the same place. Notes about conversation with the receptionist and the sitter's predilection for certain styles are relegated to the back of the card, as also are memoranda about the dress of the sitter and the whereabouts of the filed negatives.

You were good enough to draw attention to this filing system last year, and you may now be agreeable to reminding your readers of it again, in view of the interest that is certain to be provoked by Mr. Brigham's eminently practical article.—Yours faithfully,

HOUGHTONS, LTD.

[We are glad to accede to Messrs. Houghtons' request, particularly so as we believe the arrangement of their special card was produced from one of Mr. Pirie Macdonald's, described in the "British Journal." Messrs. Houghtons, Ltd., have, however, produced a card to meet British requirements. We describe it and the outfit on page 927.—Eds. "B.J.P."]

## Answers to Correspondents.

#### PHOTOGRAPHS REGISTERED:—

- R. T. Ford, 125, King Street, Cheshire. *Two Photographs of the late Rev. Father Wm. F. Stanley, late Rector of St. Peter and Paul's, New Brighton, Cheshire.*  
 Two Photographs of the Right Rev. H. Singleton, D.D., Bishop of Shrewsbury.  
 Two Photographs of the late Right Rev. S. W. Allen, D.D., late Bishop of Hereford.
- J. H. Begg, Junr., 15, Albion Terrace, Aberdeen. *Photograph of a Dog.*  
 P. D. Prior, Milton Chambers, Milton Street, Nottingham. *Photograph of Double Nest made by One Pair of Greenfinches.*  
 J. Mills, 11, Gold Street, Northampton. *Four Photographs of Miss Ellen Terry (Mrs. James Carew).*  
 W. A. Mallett, Church Street, Tewkesbury, Gloucestershire. *Photograph entitled: "Sunset on the Lordly Severn, Tewkesbury."*  
 B. Griffin, 29, High West Street, Dorchester, Dorset. *Two Photographs of Thomas Hardy.*  
 W. Whiffin, 237, East India Dock Road, Poplar, E. *Photograph (Combination) of a player's Ground of the Millwall Football Club, 1908-9.*  
 A. Dimberline, 3, Mission Street, Marsh, Huddersfield. *Two Photographs of Miss Annie Graham, Missionary from China.*

**JOHN HUTCHESON.**—(1) The number of the patent specification is 17,007, of 1905. An abstract appeared in our issue of June 29, 1906, and in the "British Journal Almanac," 1907, p. 803. (2) There are no patents now in force as to the making of ordinary carbon tissue.

**PHOTOGRAPHY AS PROFESSION.**—Having been a good many years an amateur photographer, and my daughter being nearly fifteen, would you kindly say what chances there are in putting her to learn the business, with a view of setting up at it; what is the best way for me to proceed to get her apprenticed or otherwise, and how many years, etc.? Any information will be greatly esteemed.—W. WALL.

If your daughter has both natural aptitude for portrait photography and also business instinct, there may be a good prospect of her doing well in business for herself. But for assistants there are not very bright prospects at present, the market being overstocked with labour. The best course of training would be to apprentice your daughter to a good firm, but before doing so we advise you to study the pages of the "B.J.," wherein you will find the advertisements of situations wanted and vacant. In the event of your contemplating a definite step we would be willing to give you an interview, when we might be able to give you some advice.

**LENS FOR PORTRAITURE.**—What lens would you advise for home portrait work? I require a quick lens for children. I have obtained good results with 1.1 (rectilinear) lens for cabinet heads and smaller sizes, but I require something quicker to use with  $\frac{1}{2}$ -plate cameras. —ARTIST.

The quickest lens you can have for portraits is a portrait lens. These may be had with an aperture of about  $f/5$ . A good cabinet lens of from 11in. to 12in. focus will cover the half-plate very well; indeed, a larger size if stopped down.

**COLLODION PRINTS.**—We should be very much obliged to you if you would kindly help us to find out the cause of the yellow stains. We wash prints well before toning, then tone in borax gold bath, then wash again in, say, six changes of water, and put them in platinum bath. After this we wash them well again and fix them for fifteen minutes. After this we wash them by hand, changing them for two hours, say, every five to ten minutes, and put them to dry between clean, pure blotting-paper. In the last week or two we have been troubled by these yellow stains, which occur, say, in four or five prints out of a batch of sixty, and occur about a week or so after they are mounted. Would the cause of it be the mounts? We send you a few for inspection. You will notice little yellow marks on them, or is it the fault of our printer or in the mounting? —STAINS (Wales).

Yellow spots, such as those on the prints, are sometimes caused by too slow drying of prints, which have been mounted. It is possible that the mounts may be, to some extent, at fault, but quick drying in a quite warm room will perhaps be the means of avoiding your present trouble. We would refer you to the "B.J. Almanac," for 1907 for a series of articles on the numerous points which call for attention in working collodion paper.

**DEVELOPER.**—I have to thank you for your prompt reply to my question in your last issue re developer. I may say I have taken your advice, and with satisfaction. Having exposed some plates under bad circumstances as to light, some were developed with pyro-soda and the others with pyro-metol. There was no image whatever with the former after developing twenty-five minutes, but with the pyro-metol I obtained a fair image on the plate, all being exposed at the same time and place. If I am not troubling you too much might I ask which developer you consider best for seascapes and children's portraits outside, dressed in white? Is metol the best? —LONG READER.

We should not consider the particular developer of very material importance. The chief point, especially with light-toned subjects, such as children in light dresses, is not to over-exposure nor to over-develop. Keep the negative thin, and, as metol tends to a thin negative, you will not go far wrong with it.

**MISS WALKER.**—Perhaps if you apply to Mr. F. A. Bridge, East Lodge, Dalston, N.E., he may be able to help you.

**HARRY WATSON.**—(1) Apply to Fallowfield, 146, Charing Cross Road, London, W.; or Billcliff's Camera Works, Manchester, S.W. (2) The Tress Company, 4, Rathbone Place, London, W.

**D. Y., M. R. L., and others.**—We will reply next week.

**CARBONERA.**—You require to register the transference of the copyright at Stationers' Hall, on the form provided for the purpose.

**PYRO.**—We have no information as to working formulae, which are largely trade secrets. A formula for rapid bromide P.O.P. emulsion was published by Valenta last year. See the "Almanac," 1908, p. 641; but such paper, or any chloro-citrate paper, cannot be developed with an alkaline developer.

**REDUCING OVERPRINTED PLATINOTYPES.**—Will you be so kind to advise me of the formula for the reduction of overprinted platinotypes? The same may be reduced if treated before the final acid bath, I believe, not when dry. I have an idea it is chloride of platinum, but of this I cannot be sure. I have tried chloroplatinate, but of no avail. —PLATINOTYPE.

If prints be placed for about two minutes in the oxalate developer, then for about 1 second in 1:20 hydrochloric acid, and then put back again in the developer and treated as usual, some reduction of the effect of overprinting is obtained. The only reagent for the finished print is a weak solution of chlorine water.

**R. T.—1.** We can only suggest that you offer the prints to the leading postcard publishers. 2. Negative intensified by the

mercury iodide method followed by re-development should be quite permanent. It is not correct to assume that a mercury process necessarily gives impermanent results. Mercury followed by ferrous oxalate developer gives quite permanent intensification.

**RETOUCHER.**—What you complain of is certainly illegal, and it is evident that you know how to put a stop to it in your case, namely by bringing the facts to the notice of the local Factory Inspector. You can, of course, do that. It is not at all unusual for employees to be called to work somewhat longer hours during the pre-Christmas work, and that they very generally do cheerfully. Usually the employer makes some recompense for this in the shape of extra pay, presents, or Christmas boxes. The hardship is not so very great, after all.

**GREEN TONES ON BROMIDES.**—Can you oblige me with a good reliable formula for the toning of bromides a sea-green colour? I have an idea I have seen such. —SEA-GREEN.

One is given in the "Almanac," page 810, but this and other formulae are not perfectly satisfactory. The Leto Company supply a better preparation for green tones.

**TOE THE LINE.**—It is not usually held to do so. An amateur is commonly regarded as one who does not rely upon his hobby as a means of livelihood.

**INQUIRER.**—We can only generally tell you that conditions in Australia are very much as here. The two papers are the "Australian Photo-Review," 375, George Street, Sydney, and the "Australian Photo-Journal," 386, George Street, Sydney.

**COPYRIGHT.**—I take the liberty of writing you about a subject which is rather troublesome to an outsider, viz., I have a photograph which I bought. It has seemingly been reproduced from an oil painting done in 1886. Now what I want to know is this: if I am at liberty to copy this photograph for illustrating a catalogue. The gravure has no indications of being copyrighted. The catalogue, of course, will not be sold. —POLAR STAR.

It is immaterial whether your reproduction will appear in a publication which is to be sold or distributed free. If there is copyright on the engraving—and very probably there is—you have no right to make or publish a copy. It is not necessary that the word "copyright" should appear on a work in which there is copyright.

**FACTORY ACT.**—Will you please tell me through your paper if it is illegal to have a female employed in the reception room on Sunday, if she has the time allowed off during the week, and would it make any difference if she were manageress? The factory inspector called here to warn us about the same, and said that we should take proceedings if we continued to have a female receptionist on Sunday. This is rather an important question as it will affect photographers all over the country. —FACTORY INSPECTOR.

Under the Factory Act it is illegal to employ females on the Sunday in any workshop. If the receptionist is engaged in any work, such as mounting, spotting, retouching, etc., she comes in with the other workers as a workwoman under the Act, and it is illegal to employ her on the Sunday, even if she has time off during the week. The factory inspector, no doubt, knows the conditions under which she is employed better than we do. Hence his notice.

**NOTICE TO ADVERTISERS.**—Blocks and copy are received subject to the approval of the Publishers, and advertisements are inserted absolutely without condition, expressed or implied, as to what appears in the text portion of the paper.

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## SUMMARY.

The activity being shown both by licensing authorities and by the cinematograph trade in the prevention of fires is evident from the report printed on page 945.

A demonstration of the new Lumière non-flammable film was given on Tuesday last. (P. 953.)

The president of the R.P.S. in his annual address dwelt upon the destroying effect which photography had had upon a number of the more minor arts. (P. 949.)

We suggest to photographic societies holding members' exhibitions the systematic restriction from competition of members who have taken, say, four awards. (P. 938.)

At the ordinary general meeting of Ilford, Ltd., held last week, the report recorded considerably increased sales (despite keen competition) and a large increase in the profit on trading account. (P. 945.)

A new printing paper of quite distinct properties and with many attractive features has just been placed upon the market. (P. 951.)

We suggest the construction of a stereoscopic camera in which the act of focussing on near objects would automatically effect a further separation of the two lenses. (P. 937.)

An account of the training now being given in photography to girls by the London County Council is published in the form of an article on page 940.

The first portion of an important paper by Mr. Herbert E. Ives on the Lippmann colour photograph appears on page 942.

Telegraphic transmission of photographs and repairs of cinematograph film figure among patents of the week. (P. 947.)

The conclusion of the miscellany of hints on portraiture appears on page 941.

An analysis of some current formulæ for metol-hydroquinone gas-light developers leads us to a formula which may be taken as a useful working average. (P. 933.)

The advisability of catering for photographs of fair size instead of largely for midget and similar prints may be offered as a suggestion to the middle-class professional photographer. (P. 938.)

## EX CATHEDRA.

### Silver Ferrocyanide in Photographic Processes.

That the properties of ferrocyanide of silver, the chief product of the action of ferricyanide upon a silver image, still contain the basis for photographic processes is shown by two German patents recently granted. In that of A. Tellkamp (No. 201,968 of August 10, 1905) advantage is taken of the bleached silver image to produce a surface from which proofs in greasy ink may be taken. The ferricyanide-bleached print is applied to a gelatine film containing a ferrous salt (prepared from a mixture of 100 gms. of gelatine and 1 gm. of ferrous sulphate in 600 ccs. of water). The unaltered ferricyanide in the print combines with the ferrous salt, producing an insoluble salt in the gelatine, which, after this treatment, is able to absorb a fatty ink. From the relief film thus obtained, prints are taken off by contact. In the case of the second patent (No. 202,108, May 15, 1907, of the Neue Photographische Gesellschaft), the bleached prints are obtained by treatment with a 5 to 10 per cent. solution of potassium ferricyanide. They are then washed and coated with a mixture of pigment and casein. On drying, the whole is treated for ten to fifteen minutes in a solution containing 2 gms. of potassium bromide and 1 gm. of potassium bichromate in 100 ccs. of water, "washed" with warm water, and fixed by means of hypo. The action here seems to be somewhat akin to that in the ozobrome process.

### An Automatic Stereoscopic Camera.

We suggested some time ago that for scientific stereo work a camera with an adjustable front is a necessity in dealing with near objects. If this movement is not supplied, the corresponding images of the principal object move apart as the object comes nearer, and get inconveniently near the ends of the plate, if not off it altogether. Camera makers do not seem to realise that this adjusting front can very readily be made to work automatically as the camera is racked out, with the aid of two guides that will control the separation of a pair of sliding panels. These guides will naturally be curved, and their form can easily be calculated. If properly adjusted, the principal object in view will always be represented in the centre of each of the separate stereo images, so that when using ordinary stereo size plates the maximum separation for distant objects should be  $3\frac{1}{4}$  in. The production of a half full-size image will then require the separation to be reduced by one-third, that is, to about 2 in., which is generally the least separation that can be arranged with lenses of ordinary size. Larger images than this will seldom be required. The rule governing the amount by which the separation must be diminished as the camera is racked out is a very simple one. If the additional

extension of the camera beyond the infinity mark is equal to the focal length multiplied by  $\frac{1}{f}$  then the separation must be reduced by an amount equal to the maximum separation multiplied by  $\frac{1}{f-f_1}$ . That is to say, when making a quarter full size image we must reduce the separation by one-fifth, or when making a one-sixth full size image, we must diminish the separation by one-seventh, which is nearly half an inch if the original separation is  $3\frac{1}{4}$  in. The automatically adjusting front will render mistakes impossible, and greatly diminish the trouble of setting up the camera.

### Gaslight Paper Developers.

Last week we published a summary of the pyro-soda developers to be found in the makers' formulæ of the 1909 "Almanac." We have made a similar study of twelve metol-hydroquinone formulæ advised for use with gaslight papers, and the results are interesting, as they show a remarkable unanimity in some of the ingredients and an equally remarkable discordance in others. In the first place, eight out of the twelve formulæ prescribe 30 grs. of hydroquinone to every 10 oz. of developer, and six agree in advising 7 to 8 grs. of metol in the same quantity, the average of the whole twelve formulæ being  $7\frac{1}{2}$  grs. Two of the formulæ that do not agree with these figures are for rather exceptional papers, therefore their influence on the general average may be disregarded. One of the others is exceptionally dilute, and may be left out on this ground. The opinion of a large majority is therefore distinctly in favour of relative weights of four parts of hydroquinone to one of metol, and of absolute quantities of 3 grs. hydroquinone and  $\frac{3}{4}$  gr. metol per ounce. As regards bromide, five formulæ favour 3 grs. per 10 oz. of developer, while the extreme variations of the rest are from  $\frac{1}{2}$  gr. to 4 grs. The average for the whole is  $2\frac{1}{2}$  grs., the difference between which and 3 grs. is immaterial; we may therefore in this case take the average, which is equivalent to  $\frac{1}{4}$  gr. per ounce. As to the sulphite, there seem to be considerable differences of opinion, as the quantities given vary from 5 grs. to 44 grs. per ounce. The carbonate quantities are, however, still more erratic, as they vary from 5 grs. to 108 grs. per ounce. In four cases the carbonate is equal to the sulphite, and in one it is less, but the majority favour a larger quantity up to six times the quantity of the sulphite. The average quantities for the whole twelve formulæ are 23 grs. sulphite and 41 grs. carbonate per ounce of developer, while if we eliminate the more erratic quantities, the averages are 26 grs. and 38 grs. respectively. It is, of course, a fact that gaslight papers differ greatly in properties, and very likely the differences in the formulæ have some good reason. At the same time, it is well known that one good amidol formula will work well with practically all the papers. Some of the ready-made developers on the market are also apparently effective with all brands of paper, so probably the differences in the makers' formulæ are not absolutely essential. We may deduce from the figures given that a mean formula would contain about eight parts of sulphite and twelve of carbonate to every one part of hydroquinone. This would give the following formulæ:—

Metol	...	...	...	...	$7\frac{1}{2}$ grs.
Soda sulphite	...	...	...	...	240 "
Hydroquinone	...	...	...	...	30 "
Soda carbonate	...	...	...	...	360 "
Potash bromide	...	...	...	...	$2\frac{1}{2}$ "
Water	...	...	...	...	10 oz.

This formula differs from all, which is the usual result of working to averages. If we change the sulphite to  $\frac{1}{2}$  oz. and the carbonate to 1 oz. in the 10 oz. formula, we get a result that approximates very closely to two of the published formulæ.

### A Museum of Ethnology.

The suggestion is made by a correspondent in the "Morning Post" of Monday last, that steps should be taken to establish a museum of ethnology in London, on a scale worthy of the opportunities for such an enterprise which are granted in the British Empire. There are already in existence several collections which would form the nucleus for the contents of such an "Imperial" museum, notably the Indian collection at South Kensington, which it is proposed to break up in the future. Photography for long past, and now of late colour photography, have been applied so exhaustively to ethnological research that the appearance and habits of almost every tribe may be shown in a manner second only to actual travel among the people. Such a museum would realise in a magnificent way the aims of those who, in the field of photographic record, have consistently kept to the front the importance of preserving records of the transient phases of life abroad as well as at home.

### Not for Competition.

There appears to be a growing custom among photographic societies of including in their annual shows many works labelled "Not for competition." It is easy, of course, to see how this comes about. A member gets tired of taking awards year after year, and is glad to retire from the contest, leaving an easier field for other competitors. But, it seems, the other competitors are at times inclined to resent this condescension. They wish still to try their steel against the retiring victor. That is sportsmanlike, no doubt; but is it the proper spirit to be fostered in a photographic society? It smacks rather of "pot-hunting," and reduces picture-making to a means, where it should be the end; justifiable emulation giving way to mere contest. To our minds the best way out of the difficulty would be for a rule to be made that when a member has taken, say, four awards his works should be no longer competitive. This would remove the personal element altogether; the retiring exhibitor being relieved from the unpleasant, haunting feeling that he is acting the superior person, whilst the rank and file would know when to expect that his works must be classed as *hors concours*.

### LARGE VERSUS SMALL SIZES—A BUSINESS QUESTION.

Of late years there seems to us to have been a tendency amongst middle-class photographers to cultivate business in the wrong direction, namely, by giving prominence to portraits of small size—postcards, midgets, and the like—at cutting prices, instead of working in the opposite direction—giving greater importance to pictures of larger dimensions, such as boudoirs, imperials, panels, etc., at a modest price. This is the more surprising, seeing that a single picture of these sizes carries as much or more profit to the photographer than do, perhaps, several dozens of the smallest sizes, of which such large numbers are now being done. Moreover, the larger sizes, if a good display of them were made, would decidedly improve the status of the business, while the prominence given the small sizes tends to lower it in the eyes of the general public. On mentioning this to a middle-class man, who is doing a fair business, the other day, he told us there was no demand for the larger sizes at the present time. It occurred to us that the "no demand" was to a great extent brought about by photographers themselves, by reason of there being no supply prominently shown; photographers as a rule do not make a feature of anything but small direct portraits, and of enlargements, mostly of



the common—we might almost say orthodox—20 by 16 size, which they can get done at a very cheap rate.

What seems desirable to us is to make a specialty of moderately large portraits, such as boudoirs, imperials, and panels. With regard to there being no demand for these pictures, it may be asked how many middle-class portraitists could at the present time show a decent number of specimens in these sizes if they were asked for them? Are the general public likely to inquire for things they may possibly know nothing whatever about? If a good display of them were made as is often done of post-cards and midgets by many photographers, there is little doubt that a demand would be created for this class of work, if only to a limited extent at first.

There is no question that large portraits, up to a certain size, taken direct, have a certain quality about them that is not possessed by enlargements of similar size. It goes without saying that to take portraits, say, of the panel size, about 12 by 7, and the large panel about 15 by 10, requires somewhat costly apparatus; that is, if portrait lenses are used for the purpose. But with the present extra rapid plates such lenses are not absolutely necessary. There are few professional photographers who do not possess a 12 by 10 or a 15 by 12 camera, furnished with a rapid rectilinear lens, for outdoor work. Either of these may well be utilised in the studio for large portraits. It is true that the lenses will be slower than portrait combinations, but in practice they are not so much so as many may imagine. A large portrait lens of wide aperture has to be stopped down to some extent in order to get the different planes of the subject in sufficiently sharp focus—sometimes even to  $f/8$ —in which case it is no more rapid than is a R.R. worked with its full aperture, and it will not have any greater depth of focus than will the latter, with its full opening. Hence it will be seen that there is no great obstacle in the way of any photographer doing moderately large direct portraits.

In taking the pictures, we would suggest that large heads be avoided, unless lenses of much longer focus be employed than are catalogued to cover the size plates just referred to. The reason for this is that large heads, when taken with the camera within a few feet of the sitter, are rarely satisfactory, by reason of the violence of the perspective—otherwise distortion—whatever form of lens be used. Full length or three-quarter length standing will as a rule prove the most satisfactory. For the boudoir size any whole-plate or cabinet lens of eleven or twelve inches focus will answer. Having got the negative, prints can, of course, be supplied at a moderately cheap rate, and yet carry a good profit.

It was mentioned just now that there is a certain quality in a direct portrait that is not possessed by an enlargement, but that may possibly require some little qualification, because by adopting a certain system there will be but little difference between the two; sometimes even there is a superiority in favour of the enlargement. But there is a way of making enlargements of moderate size that look very like direct pictures, and many years ago it was vended as a secret process for a substantial sum. The method is as follows:—Instead of making the enlargement on bromide paper, it is made as a transparency on a dry-plate the full size desired. From that transparency a negative is made by contact printing on another dry plate. From that prints can be taken by any process. The advantage of this system of working over that of first making a transparency the size of the original is that any defects pertaining to that would be magnified in the enlarging, although they were not in the original negative. A further advantage of this method is that the enlarged

transparency can be readily retouched, as the effect of the work will be seen exactly as it will be in the finished picture. For instance, the eyes or any part of the picture that may be a little out of focus in the original can be sharpened up, delicate shadows put in, and deep ones strengthened. In fact, any finishing that might be required on each individual print can be done, once for all, on the enlarged transparency. It may be argued that this way of working is more costly than the other, inasmuch as two large plates have to be employed instead of one. But this is not a matter of serious import when the best possible results are the principal consideration. If the transparency is made of a pleasing colour, and not too dense, it may, after it has served its purpose, be backed up with ground glass and used as a window decoration in the reception-room, in which event possibly it may be purchased by the sitter for a small sum, which will amply repay for the cost of using the plate.

The object of this article is really to suggest to middle-class photographers who are complaining of bad business at the present time that they might in the end find it more advantageous to cultivate a taste amongst their customers for portraits of a larger size than they are at present doing, but not necessarily of the commonplace, often badly made bromide enlargements so much in evidence. If the same prominence as is now given to a number of little pictures were given to those of moderate size, it would certainly tend to raise the status of the establishment, even if it did not for the moment bring more business to it.

#### UNION OF GERMAN PHOTOGRAPHIC PAPER MANUFACTURERS.

It is not generally known in England that some time ago the German manufacturers of photographic papers formed a Union, which has for its object the protection of their interests and the keeping up of prices. This step they considered necessary as a result of numerous discrepancies which had crept into the wholesale as well as into the retail trade. Photographers were able to buy their papers direct from the manufacturers at wholesale prices, and the general public could buy their papers at the large warehouses, which within the last few years have become a feature of shopping in Germany, at prices nearly as cheap as the dealer could himself procure these. The explanation given was that the warehouses, having a much larger turnover, could therefore buy in larger quantities than the dealer, and consequently were granted a larger discount. The result of this was that, in order to protect themselves, the dealers were obliged to boycott all manufacturers who supplied the warehouses, and who were thereby ruining their trade. It was in order to settle this difference that the Union of the paper manufacturers was arranged, and met so completely with the approval of the dealers that many of them have since become members of it. But the inner working of this Union is, so far, not quite as smooth as its members would like it to be. For one reason, some of the members of the Union had long contracts with the warehouse proprietors, and they have been obliged to fulfil their obligations, and this has led to some grumbling. The warehouses, on their side, are resenting this treatment, which obliges them to fall into line with the dealers and sell photographic papers at the same prices as the latter. Since it is the specialty of one and all of these warehouses to sell at low prices, they threaten to retaliate on the paper manufacturers, and either procure their photographic papers from other sources, or to manufacture them themselves. Since a very large section of the public using photographic papers are now in the habit of getting their papers from these warehouses,

it is questionable if the paper manufacturers can afford to neglect the warehouse custom. Consequently the situation is full of interesting developments, and it is to be hoped that some amicable compromise will be arranged before any serious crisis is brought about.

Meantime, the Union of Photographic Paper Manufacturers, which includes among its members most of the important paper manufacturers in Germany, has marked another stage in its history by holding its annual meeting.

## THE L.C.C. AND PHOTOGRAPHIC EDUCATION FOR GIRLS.

A BRIEF announcement was made in these columns some time since that a number of professional photographers had been invited by the London County Council to form an advisory committee in connection with a scheme for educating a certain number of girls, at the conclusion of their course of elementary education at the County Council Elementary Schools, in those branches of photographic work most fitted for female employment.

The general scheme for trade education of girls, which has now matured into established Trade Schools, may, perhaps, be described as a logical development of the Evening Technical Classes, which were established some years ago with a view to enabling working girls and women to improve themselves and gain greater skill at their respective trades. These technical classes still exist, and are doing useful work, but experience has shown that owing to the fatigue of long workroom hours, the necessity of performing domestic duties after work time, etc., comparatively few are able to avail themselves of them. As a means of supplying that technical training which is frequently incompatible with modern workroom conditions, the classes therefore leave ample room for other efforts in the same direction.

The greater proportion of girls on leaving the elementary schools must at once set about earning a living. They are, for the most part, suited by natural ability for handicraft trades, but pressure of poverty at home, or the mistaken desire to get good money at once often leads them to enter inferior unskilled occupations, and prevents them from giving the time expected to be given by an apprentice or learner. The result is that while there is an over-supply of unskilled or ill-trained and inefficient workers, there is a scarcity of intelligent hands who are thoroughly competent at their trades. Photographers will recognise that this is the case with regard to their own business, and that it is generally true is beyond doubt. The old-fashioned system of indentured apprenticeship which pledged the employer to teach his trade throughout to the apprentice and the apprentice to serve for a definite period has fallen generally into disuse. This doubtless is due partly to the reasons above stated, partly to the disinclination of young people nowadays to enter into any undertaking which may appear to affect their liberty, but probably more particularly to the tendency in modern manufacturing conditions to the specialisation of the workers. It is thus quite likely that any one entering a trade may never have the opportunity of learning more than one branch of it or even more than a simple operation. There seems to be no generally recognised method of training in any of the trades which were investigated in reference to the establishment of the trade schools for girls, and although in some trades indentured apprenticeship is still occasionally found, there appears generally to be a laxity in observing the provisions. In this connection it is satisfactory to learn that the L.C.C. has appointed an Apprenticeship Committee, whose duty it is not only to encourage and

Nothing of any particular importance to English readers was discussed at this meeting, except that it has been considerably strengthened by the addition of a considerable number of new members, who are mostly dealers. The photographic Press does not know exactly how to treat the Union, and the sum total of its criticism is confined more or less to a warning to the Union to be careful how it employs the powerful position in which it at present finds itself.

negotiate apprenticeships, but to keep in touch with apprentices and see that they and their employers are acting straightforwardly towards one another.

The Trade Schools are essentially of the nature of apprenticeship schools, and are intended to provide that thorough preliminary training without which there is little chance of the worker rising to the upper grades of her trade, and the system has the advantage over ordinary apprenticeship that the training may be wider, more thorough, and carried on under conditions better suited to young girls between the ages of fourteen and sixteen than is possible in the workroom.

The industries chosen for instruction so far are:—Corset-making, dressmaking, ladies' tailoring, costume designing and making (wholesale), upholstery, waistcoat making, millinery, and photography. These industries have been selected from among the many trades open to women in London after a careful investigation into the nature and condition of each. Only those trades have been selected which lend themselves to school training, and where there appears to be a demand and good prospects for intelligent workers. The general conduct of the schools is, of course, under the direction of officials of the L.C.C. Education Department, but the trade instruction is given by experienced teachers who have been practically engaged in the trades they teach, and is conducted on such lines as to familiarise the pupils with the routine of a business house. At the same time, to develop the general intelligence of the girls, lessons are given in general subjects—arithmetic, English, hygiene, drawing, and physical exercises. The schools are open from 9 a.m. to 5 p.m. About two-thirds of the time is given to trade work and one-third to general education. The course of instruction extends over two years, each pupil's course commencing at Easter, so that it may be completed at a suitable season for obtaining work. Consultative committees of trade experts are attached to each school. These experts visit the schools from time to time, inspect and criticise all the work done by the girls, and give advice on the technical requirements of the trades.

Pupils must be fourteen years of age or have passed Standard VII. Admission is obtained by means of:—

(1) Industrial scholarships, 126 of which were awarded in 1908, on the result of a competitive examination of girls from elementary schools whose parents do not earn more than £160 per annum. These scholarships entitle the holders to free instruction and to a maintenance grant of £8 the first year, and £12 the second year.

(2) Free places are awarded to some of those who have not succeeded in obtaining a scholarship.

(3) Paying pupils (at a fee of 10s. per term, £1 10s. a year) are received in all the classes.

About 375 girls are now under tuition. The first set of girls finished their two years' course at Easter this year. All these were readily found employment.

The school in photography was not started until Easter this



ear. The advisory committee, who accepted the invitation of the L.C.C. to act, consisted of Misses Muriel Bell, Cassels, and Caswall Smith, and Messrs. Ernest C. Elliott, Alexander Mackie, and Richard N. Speaight. On their recommendation Miss Brenda Johnson was appointed instructress. About fifteen girls are now under tuition, the number to be made up in time to twenty. The work at present includes mounting, spotting, and working up prints and enlargements, retouching negatives, printing and toning P.O.P. and other printing-out papers, and bromide and gaslight paper printing, but as the pupils get on at these further branches will be added. The pupils also constantly practise at drawing from the solid. It must be said that at the outset the committee were far from sanguine as to the success of the scheme. Their first visitation, made when the pupils had received three months' tuition, caused them, however, distinctly to change their opinions. On that occasion each pupil was personally examined both by questioning and by inspection of her work; and although, of course, the progress made was not uniform, even the most backward pupil gave promise of becoming a useful assistant after two years' training, while

the majority by keeping up their rate of progress would become quite expert at their work, and be certainly worthy of a much higher rate of remuneration than a girl of sixteen is usually able to command. The committee were particularly pleased with the thorough nature of the instruction the girls were receiving. They were all able to stand a searching examination as to every detail of procedure in their work, and to give the correct reason for it; often, indeed, to reply intelligently to questions the average operator or printer of rule of thumb methods, who nevertheless considers himself an expert, would stumble at. The efficiency of the school is distinctly creditable to Miss Johnson.

We await with interest further reports of the committee, and later on, when these girls are in employment, information as to whether they are able to adapt themselves readily to working under the usual conditions of a photographic establishment. If they stand the test well—and there is no reason why they should not—it may cause professional photographers to modify their opinions as to the inutility of technical schools for training assistants in practical work.

## HINTS ON PORTRAITURE.

[In the 1909 "American Annual of Photography," just published, we find a compilation of rules and counsels prepared with evident care by J. W. Little. There being many of the younger generation of photographers by whom such epitomised opinion is welcomed as an aid in their own study of portraiture, we have, in our last two issues, given the full text of the symposium, which is here concluded.—Eds. "B.J."]

The same attention should be given to the lighting of a face outdoors as indoors. This condition may usually be met by a suitable choice of location.

### Outdoor Work.

An outdoor portrait should convey the feeling that it was taken outdoors. The subjects should usually be in loose, comfortable costumes. Rustic seats may be used; but do not use chairs or other paraphernalia belonging to the house. The subject and the surroundings should not be incongruous.

The background in outdoor portraiture should be fairly well in focus, but it should be sufficiently diffused to produce a feeling of atmosphere behind the subject. If it is necessary to use a very undesirable background, it should be entirely out of focus, but not so much as to cause distraction.

Be sure that the background is not too elaborate, unless it is intended that it shall be a pictorial photograph, in which event the figures should be small and subordinated to the former. The sky, unless subdued, should not show close to the figures, and the background should not admit spots of light.

A too strong light, even indoors, contracts the pupils as well as the eyelids; therefore, when taking portraits outdoors and in strong light, be careful to see that the light does not strain the eyes of the subject. The eyes should rest on some dark object to avoid squinting, particularly if they be of light colour. If the sun is shining, it is better that it should be at the back of the subject and facing the camera, although it should, of course, not fall directly on the subject, and the head should not come directly against the sky.

A position near a large tree is often a good one in outdoor portraiture, the trunk of the tree shutting off the light from one side and the branches softening the light from above. The corner of two walls joining at right angles and in shade is often available as a good position, but an artificial background generally must be used. If the light is too strong from above, it should be softened by a piece of muslin suspended over the sitter.

The exposure outdoors will be governed by conditions, but it will usually be about three times that required for a landscape under similar conditions. If there are buildings near, shutting off much of the light, the exposure required may be greater.

A studio stand may be improvised by making a collapsible triangle of laths, fitting it with bed rollers, and using it as a base for a tripod by inserting the legs in holes on the upper side and at the corners of the triangle.

### Miscellany.

An anastigmat thrown out of focus does not give as agreeable definition as a cheaper lens (unless it is equipped with a diffusing device), because of the extreme contrast between the portions in and out of focus.

The lens should be racked out when it is desired to produce diffusion in portraiture. The focus should never be so soft as to destroy textures.

A lens of rather long focus is best, and it should be fitted with lens shade whether indoors or out.

The focus should usually be sharpest in the lightest parts of the portrait, which is most often the head; this may often be accomplished by a judicious use of the swing-back and a lens of large aperture.

Cap exposures may be made where there is necessity for silent shutter and it is not available.

Do not attempt to represent outdoor effects in the studio. If the figures are in outdoor costume, an imitation stone wall or fence may sometimes be necessary. In general, however, artificial gates, fences, balustrades, etc., should be avoided.

The environment of the sitter in the operating room should be light and cheerful. The furniture should not be obtrusive, and the upholstery should be plain, not patterned. The walls should be of light grey; the floor may be laid with matting or a simple carpet pattern, though these are often a disadvantage when moving the position of the camera and furniture.

Furniture of old and rustic patterns looks artistic in the reception room. The room should be well furnished and decorated. Some professionals prefer that the pictures hung in the studio should consist of engravings or platinum prints of the old masters, choosing for this purpose pictures which are not so well known as to be lacking in interest, and occasionally hanging with them some of the photographer's own best productions. Old armour, vases, etc., may also be used to decorate the studio, and

are likely to elicit interest on the part of patrons. The walls should be of some quiet colour.

The show window should be kept attractive, and the samples of work displayed should be changed often, so that the public will be constantly on the lookout for something new. Where high-class work is done, only a few selected pictures should be displayed; where the work is of a cheaper grade, the pictures displayed should be more numerous and of greater variety.

The inside covering of packages of photographs for postage look better sealed with a label of artistic design than tied with twine.

A proof should seldom be sent to a customer from a who, unretouched negative, as it is likely to make a bad impression. It is better to have the name of the studio on the back mounts, but, if on the face, it should be small, of artistic lettering, and of a colour to harmonise with the print.

It is usually better to yield to a client's wishes, and make negative in the position or with the accessories desired by him, and then make another in accordance with your own judgment. It is more likely that he will choose the latter when the proofs are sent him, or he may even increase his order by ordering prints from both.

J. W. LITTLE.

## AN EXPERIMENTAL STUDY OF THE LIPPMANN COLOUR PHOTOGRAPH.

PHOTOGRAPHY in colours by means of standing light-waves was first done by E. Becquerel about 1850, although he was unaware of the part they played in his results. Zenker<sup>1</sup> developed the theory that the polished silver surface, on which Becquerel's sensitive film was formed, reflecting the incident light, caused standing waves. In the loops of these waves the silver salt was reduced, forming parallel reflecting surfaces distant from each other one half the wave-length of the incident light. Viewed by reflection the developed film exhibited colour as do thin films of oil on water, or, more exactly, the multiple interior surfaces of potassium chlorate crystals.<sup>2</sup>

Lippmann<sup>3</sup> in 1891 was the first to make practical application of this theory by developing the process of colour-photography bearing his name. For the polished silver surface of Becquerel he substituted mercury, which could be flowed behind a transparent fine-grain sensitive film on glass during the exposure, and removed to permit development and the subsequent viewing.

The theory and practice of the process will be found discussed by Lippmann,<sup>4</sup> Wiener,<sup>5</sup> Neuhauss,<sup>6</sup> Valenta,<sup>7</sup> Lehmann,<sup>8</sup> and others.<sup>9</sup> Full use has been made in the following study of the results of their work, and details of theory and experimental methods not new with the writer will not be described at any length.

Good results have been obtained by the process as worked by these and other experimenters, but its difficulties have been found so great as to prevent its wide use. Some discrepancies with the theory have been found, and compromises with the best conditions as indicated by theory have been found necessary in practice.

The object of the present investigation has been to see how closely the conditions called for by theory could be approached, to find the cause of some of the difficulties met with in practice, and, if possible, to obviate these.

The separate problems will be stated as they are taken up, but may be briefly outlined here.

According to the theory, as stated by Lippmann, the most accurate reproduction of colour should come from the use of a thick sensitive film, the film gaining in resolving power with the number of reflecting laminae. In practice very thin films have been used; reproductions of the spectrum show, on examination with the spectroscope, that the colours are very far from pure. The first investigation which follows was to determine whether films could not be prepared which would reproduce colours with a fidelity much greater than has hitherto been possible, and whose thickness could be increased with corresponding increase in resolving power. The investigation has resulted in a method for producing films having these characteristics.

The production of pictures of natural objects has been a matter of uncertainty and difficulty; the production of whites has been a stumbling-block to many. The manipulation of the plates with the necessity for a mercury-holding plate-holder has been inconvenient. The causes of this uncertainty in results have been studied; the conditions governing the production of white fixed; and a substitute found for the hitherto indispensable mercury mirror.

In addition, an application of the process to three-colour photography has been developed.

### Manipulation of Plates in General.

The transparent fine-grain silver bromide plates were made, with only such changes as are noted, according to the published formulae of Lippmann, Neuhauss and Valenta. Ordinary "chemically pure" silver nitrate and potassium bromide were used; the gelatine was either Eimer and Amend's "Gold Label," Nelson's "No. 1," or a department store gelatine recommended as the best for puddings, etc., which was found very hard and free from grease. The emulsion was flowed on pieces of crystal plate glass cut three by three inches. A plate-holder not greatly different from that used by previous workers permitted the introduction of mercury behind the plate and in contact with the gelatine.

The scheme of exposure followed throughout was to expose a comparatively large surface (two by two inches) to the kind of light being investigated. This allowed of easy spectroscopic examination besides leaving room for stripping portions to be sectioned.

Development was mostly with pyrogallol acid and ammonia according to the formula of Valenta, with the one change that the pyrogallol acid was used in powder form, added by means of a spoon of proper capacity to the rest of the developer just before use with each plate. The resulting developer was always fresh and of uniform strength. The hydroquinone used in part of the work was made up according to Jewell's formula<sup>10</sup> with the omission of the potassium ferrocyanide.

After development and drying, the pictures were made ready for viewing by cementing a thin prism of small angle on the film to destroy the disturbing surface reflections, and the back of the glass flowed with asphaltum varnish. The prism is usually cemented on by means of Canada balsam. As, however, the refractive index of the gelatine containing reduced silver is somewhat higher than that of the balsam, some medium of higher index is to be preferred. Gum styra<sup>x</sup> ( $\mu = 1.58$ ) was found suitable, but the lower surface of the prism must be ground to avoid the reflection at glass-balsam surface. The latter procedure was uniformly adopted. The amount of light reflected from the laminae is at best small, so to obtain the purest colours all addition of white light is to be avoided. This white light may come from the prism-balsam, balsam-gelatine, gelatine-glass, or rear glass surfaces, and if all these reflections are not diminished as much as possible the dilution of colours is quite appreciable. The prism-balsam reflection is overcome by grinding the back of the prism with emery, the balsam-gelatine by correct choice of balsam, the gelatine-glass is unavoidable, the reflection from the back of the glass can be completely destroyed

<sup>1</sup> "L-hrbuch der Photochromie," 1868.

<sup>2</sup> Rayleigh, "Phil. Mag." (5), XXVI, p. 256, 1888.

<sup>3</sup> Comptes Rendus, 112, p. 274, 1891.

<sup>4</sup> Journal de Physique, 3, p. 97, 1894.

<sup>5</sup> Annalen der Physik, 69, p. 438, 1899.

<sup>6</sup> Die Farbenphotographie nach Lippmann's Verfahren, 1898.

<sup>7</sup> Die Photographie in natürlichen Farben, 1894.

<sup>8</sup> Beiträge zur Theorie und Praxis der direkten Farbenphotographie, 1, 1906.

<sup>9</sup> An historical account of the development of the process will be found in "Die Grundlagen der Farbenphotographie," by B. Donath, 1906.

<sup>10</sup> "Astrophysical Journal," II. Page 242, 1900.



by first grinding with emery and then flowing on asphaltum varnish, preferably mixed with machine oil, to prevent its becoming brittle and flaking off. If the pictures are to be observed from the glass side a second prism is cemented on in place of the black varnish.

When so mounted the pictures are ready for observation. It is of extreme importance that they be observed by parallel light and shielded from all side light. The best conditions are given by a small opening in a wall facing a brilliant white sky. If the observer stands with his back to the opening and holds the picture at arm's length reflecting the sky it appears at its best.

These precautions are most necessary in the case of pictures of natural objects, for reasons which will appear later. Spectra and similar subjects, where the reflecting laminae are numerous and deep in the film, are visible much more easily, but are, of course, best seen under the conditions given above.

### Work with Monochromatic Light Sources.

The first investigation was on the influence of two factors, fineness of grain and film thickness, upon the correctness of colour rendering. It is naturally to be expected that both factors will influence this. The smaller the silver particles the more minute the variations in the standing wave system they will record. The thicker the film the more laminae, and hence the greater purity of the reflected light.

There are comparatively few recorded experiments on variations in the size of the grain; the first published emulsion formulæ have been closely followed by all experimenters. Cajal<sup>11</sup> recently observed that the size of the grain is influenced largely by the amount of agitation of the emulsion during preparation, and finds that the finer the grain, the better the quality of the colours. He, however, was not working with pure spectrum colours. The present investigation of this point was prompted by the observation that when photographing monochromatic light sources for a special application of the process the use of much less silver bromide gave more satisfactory results. This made it appear of interest to determine from this standpoint the best proportion of silver salt.

With regard to the best thickness of film, theory would call for the greatest thickness practicable to work. Yet the practice has been to work with extremely thin ones such as can be obtained by flowing the liquid gelatine on and off a warm glass plate. The section photographed by Neuhauss showed but seven or eight laminae. Wiener, by counting the laminae cutting the gelatine-glass surface in a spectrum photograph, found the number less than twenty, obviously too few to have much resolving power, and explaining the impure reflected light. There has, indeed, been reason to suppose that appreciably greater thickness would not help matters. The loss of light by absorption and reflection at each lamina is large, so that the effect of each lamina becomes rapidly less with increasing distance from the surface of the film, assuming them all equally well formed. Film sections indicate the latter is not the case, the laminae are of rapidly decreasing strength. Lehmann has calculated, taking into account the effect of absorption, that the laminae should be more distinct the greater the distance from the mirror. That they are not he ascribes to the reflected light losing the power of interfering after a short distance. These points were considered worth investigating more closely.

The size of the silver grain was varied entirely by the quantity of silver bromide in the emulsion. A set of emulsions was made up in which the content of silver nitrate varied between .03 and .18 gram per gram of gelatine, the quantity of potassium bromide constantly five-sixths of this. The resulting emulsion had from one-sixth to the same amount of silver bromide as used by Valenta and others. The emulsion was flowed on the level plates in measured quantities from a graduate, so that the thickness was under control. After flowing, the emulsion was pushed to the corners of the plate by means of a glass rod. The quantity used varied from one to ten cubic centimetres on a 3 in. by 3 in. plate. This gave films from about .077 to .07 mm., as section afterwards showed by the number of contained laminae.

Monochromatic green light was used for the greater part of the work. This was obtained from a Cooper-Hewitt mercury vacuum lamp, an aperture of 1 sq. cm. illuminating the plate 25 cms.

distant. A cell of neodymium ammonium nitrate and potassium bichromate absorbed the yellow and blue radiations. The plates were made sensitive to this colour by erythrosine.

### Influence of Size of Grain.

A noticeable increase of purity in reflected light was found as the quantity of silver bromide was reduced. This increase is quite marked between .18 and .09 grams of silver nitrate per gram of gelatine; after that less so.

Besides the influence on the purity of the reproduced colour the quantity of silver bromide affects the sensitiveness of the plates. A rather unlooked-for result was that a smaller quantity of silver salt made the plates more sensitive, up to a certain point. This is readily explained. The light must pass through the film, and decreasing the silver content increases the transparency. If the amount of silver becomes too small the plates again become less sensitive. The fastest emulsion was found to be one containing half the silver salt used by previous workers. As this gave practically all the increase of purity resulting from decreased grain it was adopted as the standard emulsion for future work.

The formulæ and method of preparation were as follows:—

A. Gelatine, 1 gram. Water, 25 cc.	B Gelatine, 2 grams. Potass. bromide, .25 gram. Water, 50 cc.	C. Silver nitrate, .3 gram. Water, 5 cc.
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A and B are heated till the gelatine melts, allowed to cool to 40 degrees, C added to A and then A to B slowly with stirring, the sensitiser added, and the whole filtered. After flowing and setting, the plates are washed for fifteen minutes and allowed to dry.

### Influence of Thickness of Film.

The first work done on the influence of film thickness indicated that, viewed from the film side, there was no increase of purity with increase of thickness beyond one of about thirty half wavelengths, or about that given by flowing the emulsion on and off the cold glass plates. The single green line of mercury was rendered as an ill-defined green band in the spectrum, properly a continuous spectrum with strong maximum in the green. The green light is considerably more monochromatic than usually seen in Lippmann spectra. From the glass side the band was of a different character, showing more clearly defined edges. This is explained by the stronger laminae being farther from the eye and by absorption being no more effective than the weaker ones. The reflecting surfaces are then comparable to the lines of a grating, each sending equal contributions to the total reflected light. Owing to the strongest laminae suffering so much absorption the light from the glass side is much weaker than from the film side.

Even from the glass side, however, increase of thickness beyond the above given limit produced no corresponding increase of purity. Further light on this question was furnished by studying the effect of varying exposure and development.

### Effect of Varying Exposure.

To study this, exposures were made through a graduated wedge of erythrosin solution, opaque to green light. Before noting the effect of varying exposure on the reflected coloured light, the appearance of the film at angles other than the angle of specular reflection is worth describing. By reflected light the film appears in the less exposed parts like an ordinary fine-grain negative—that is, there is a certain amount of diffuse reflection, so that a positive image is seen. As the exposure proceeds the diffuse reflection becomes less and less until the film is quite grainless and black, except at the angle of specular reflection, behaving as a piece of unsilvered glass. By transmission the plate is greenish in the very slightly exposed parts, muddy brownish yellow in the moderately exposed parts; where the film has been exposed until the diffuse light disappears by reflection it is clear transparent yellow, like a piece of yellow glass. The appearance and behaviour of the silver deposit is in all respects as though the particles of silver were first separate, scattering light, and on longer exposure fused together into a homogeneous mass. The appearances here described may be observed on almost any Lippmann photograph viewed at other than the angle to show colour, the diffuse deposit forming a positive image which in the fully exposed high-lights appears reversed.

The coloured light reflected from the laminae increases in intensity with increase of exposure until the diffusely reflected light disappears; after that for a long range of exposure no change in

<sup>11</sup> "Zeitschrift für Wiss. Phot.," July, 1907. Page 213-245.

intensity occurs. This is probably because the individual laminae do not gain in reflecting power after the silver particles have fused together into a reflected surface. This fact makes it possible in photographing spectra with plates not evenly sensitised to secure uniform action throughout the spectrum merely by long exposures.

The greatest spectral purity of the reflected light occurs just before the "saturation" point is reached, dropping slightly for longer exposures, and not changing perceptibly till many times

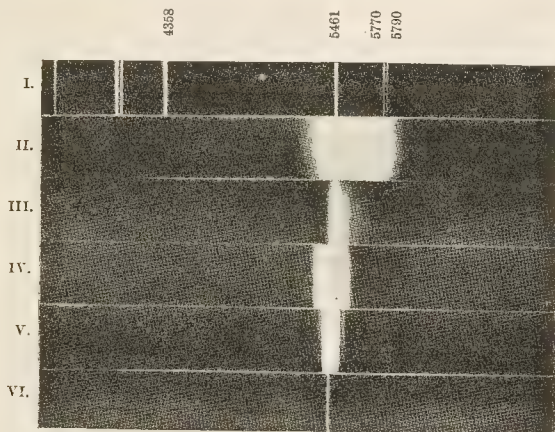


Fig. 14.

the full exposure, when the colour tends toward grey and white. From the glass side the purity increases with exposure to a maximum, and then remains constant except with very thin films, in which case the purity again decreases. The cause of this will appear shortly.

#### Effect of Varying Length of Development.

By lowering a plate slowly into the developer different amounts of development were obtained. The only effect of greatly increased development was to cause fog, decreasing somewhat the purity, if the picture was viewed from the film side. Viewed from the glass side longer development had no effect whatever, except with thin films, when the purity decreased similarly to the effect noted with increasing exposure.

The practice was to develop the plates up to the point where fog

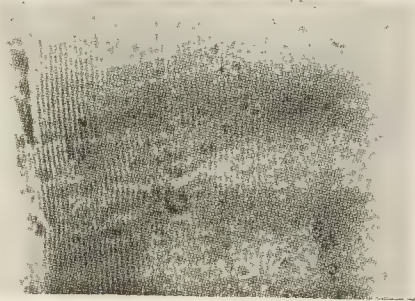


Fig. 5.

begin to appear, usually by time development. At temperatures near 20 deg. C from 45 seconds to a minute gave full development.

#### Action of the Developer on the Film.

Using thick films it was found, if development was sufficiently prolonged, the laminae intersected the gelatine-glass surface, giving a watered silk effect, the same phenomenon used by Wiener to estimate the thickness of the film. As in film sections heretofore made, comparatively few laminae had been found, it has been assumed that but few are formed. The appearance just noted indicated that the laminae might be formed throughout the thickness of the film, provided development were continued long enough.

To study the action of the developer it was decided to section the films and observe them under the microscope. This has been done by Neuhauss, Lehmann, and Cajal. The latter swells the section in water to bring the structure, in its natural size too small to be satisfactorily resolved with the microscope, within reach of average powers. This method was pursued in the present investigation. After development a small oblong of film was cut out with a knife and then stripped from the glass by means of a narrow straight-edged chisel. The strip of film was then laid on one half of a split piece of pith. When dry, the other half of the pith was laid over it, the whole placed in a microtome and sectioned. On laying the sections on a microscope slip, and wetting with a drop of water, the majority of the laminary structures were easily observable with a one-sixth inch objective. For much of the work where it was not important to have sections of exactly the same thickness it was found convenient to dispense with the microtome, simply holding the pith in a pair of clothes pins and shaving off sections with a razor guided by the fore-finger, an operation easily performed after a little practice.

A section of a normally exposed and developed film is shown in Fig. 5. It will be observed that the laminae are strongest at the mirror-surface, decreasing in strength with distance from it.



Fig. 6.



Fig. 7.

Figs. 6 and 7 (sections of same thickness) show the result of short and long development. With short development the laminae are visible for only a short distance; with long development the laminae are present to a great depth, but a thick band of fog has progressed inward from the surface. The laminae corresponding to the surface ones in the short development are therefore in the long development at a greater depth. From the glass side their effect is precisely similar, unless the film is thin or development has been very long, in which case the fog band reaches to the glass and drowns out the clearly formed laminae. This makes clear the above noted effects of long exposure and long development as seen from the glass side. A film exposed or developed progressively from edge to edge possesses a layer of well-formed clean laminae running diagonally down from the surface until the glass is reached.

HERBERT E. IVES.

(To be continued.)

CINEMATOGRAPH ACCIDENTS.—The West Ham Town Council some time ago wrote to Whitehall, pointing out the need for regulations in respect to cinematograph entertainments, which at present are free from restrictions, and which are a source of risk to persons attending the same. They have now received a letter from the Home Office, stating that the question from the point of view of public safety is receiving the attention of the Home Secretary.



## ILFORD, LTD.

## INCREASED SALES DESPITE KEEN COMPETITION.

The ordinary general meeting of Ilford, Ltd., was held on December 1, at Winchester House, E.C., Colonel Ivor Philipps, P., presiding.

The Secretary (Mr. Fred. J. Jenks) having read the notice and the report of the auditors,

The Chairman, in moving the adoption of the report and accounts for the year ended 31st March 1908, said: Dealing with the declaration of the dividend recommended, said: Dealing with the balance-sheet, you will see that the goodwill stands at a large figure of £222,000, and last year we wrote nothing off that amount. Under freehold land, buildings, etc., we brought forward an amount of £78,114, and we have added since £5,952, on account of additional land we have purchased at Ilford and also on account of new buildings which we have found it necessary to erect at Ilford to carry on your business properly. The depreciation is written off exactly on the same basis as in previous years, and you will see figures at £2,600, as against £2,700 last year. The net increase under this heading of freehold land, buildings, etc., is £1,300, of which very nearly half is the value of the additional freehold land. The investments are entered at cost, as in previous years, and are exactly the same as before. They have fortunately appreciated by about £700 during the year, but the market value is still about £5,800 less than the book value. This year we have set aside £1,000 to reduce this disparity. The sundry debtors show an increase, owing to the increased sales and the general development of our business. Stock figures at about the same, but is really in a much more favourable condition, because this year the manufactured stock is less and the unmanufactured stock is more, consisting largely of nitrate of silver, which we were fortunate enough to buy at a very favourable price, so that a large quantity of your stock is available supposing we should be in such an unfortunate position as that we wanted to realise it, which we are not. The cash at bankers shows an increase of about £14,000. Turning to the profit and loss account, the salaries, advertising, rates, taxes, and sundry trade expenses are about £15,000, against £18,000. This is owing to our having no managing director at present, and also to a certain saving the secretary's and other salaries. Directors' and auditors' fees are also somewhat less, owing to the death of our colleague, Mr. R. Smith. Turning to the credit side, the profit on trading account is £46,000, against £34,000, an increase of close upon £12,000, or about 35 per cent., which I am sure you will agree with me is comparatively satisfactory. The balance carried to the balance-sheet is £28,810, against £14,000 last year, or more than double. (Applause.)

Sales show a very satisfactory increase, although competition does not show signs whatever of slackening. When you consider the disastrous state of trade generally in the country, and remember that our manufactures are used in great part for what may be termed luxuries, I think you may view the outlook with considerable satisfaction, for in this bad year for trade you have not only kept level, but have gone ahead. It was only reasonable in a period of such bad trade to expect a decrease in your output. I referred last year to the price-cutting that was going on, and said we hoped and expected there would soon be more reasonable conditions, but those hopes and expectations have not been fulfilled, and in this direction matters are rather worse than they were before. The Board are very much indebted to a number of shareholders who sent us privately criticisms upon the way we bring our goods to the notice of the public, and to various other suggestions. I should like to point out that we have to meet very severe competition indeed, and to my mind the very best way in which shareholders can benefit the company and improve their property is by bringing their suggestions or criticisms privately to the notice of the Board. We always consider them, and we adopt them where we think any benefit will accrue. The new productions of your company are very highly appreciated, and I do not think I am going too far in saying that the high standard for which your company has always been well known has not only been maintained, but the quality of your goods has been greatly improved in many directions. Mr. Knobel resigned his seat on the Board after the last general meeting, as was arranged, and, according to the promise which I then gave on behalf of the Board, the vacancy thus caused has not been filled up. One of our colleagues, Mr. A. R. Smith, has died since I last came before you, and I regard his death

as a distinct loss to the company. To fill the vacancy thus caused, the Board have elected Major Evatt. This gentleman was known to me as having great powers of organisation. He is an enthusiastic photographer, is energetic, and has time at his disposal. He is also a large shareholder. In Major Evatt you have a most excellent director, who is immensely interested in everything to do with your work, and I think he will be a very valuable asset to the company. We have, as you know, no managing director at present. Mr. Zerffi, who was your commercial manager, we have appointed general manager; and Mr. Jenks, who is an old servant of the company, is now your secretary. I wish before sitting down to express my appreciation of the work done by your staff generally.

## THE SAFETY OF THE PUBLIC.—PREVENTION OF FIRES.

The following is the text of a report presented by the Kinematograph Manufacturers' Association of Great Britain in reference to the prevention of fires in cinematograph exhibitions:—

One of the earliest subjects considered by the Kinematograph Manufacturers' Association of Great Britain was the question of the safety of the public at exhibitions of animated pictures, which was considered of vital importance. It was felt that one of the most effective means was to ensure that the operator had a thorough knowledge of his work. For this reason a scheme was set on foot for the examination and certification of operators and exhibitors, and the association was fortunate in securing the co-operation of the Northampton Polytechnic Institute, of London. These examinations, of which two have already taken place, are held under the aegis of a Joint Committee of the association and the institute.

The association has also carefully considered various means of improving the apparatus with a view to minimising the risk of fire. When the London County Council last autumn proposed certain legislation in respect to cinematograph exhibitions, the secretary of the association wrote the Clerk of the Council as follows:—

November 18th.

## RE KINEMATOGRAPH EXHIBITIONS.

"Having regard to the proposed legislation on the above, I am requested to ask if your committee would be disposed to receive a deputation from this association to explain their views on the needs of the industry, and the scheme (detailed in the enclosed pamphlet) for certifying the proficiency of operators and their acquaintance with your regulations."

On December 2nd the Clerk of the Council replied to the secretary of the association as follows:—

"I submitted to the Theatres and Music Halls Committee of the Council your letter of the 18th ult. asking, in view of the possibility of the introduction of legislation with regard to cinematograph displays, that a deputation from the K.M.A. of G.B. may appear before the committee with regard to the needs of the industry, and I am directed to inform you that the committee will be prepared to receive the proposed deputation at 4 p.m. on Wednesday, the 11th inst., at this office.

"In accordance with the practice obtaining in such cases the deputation should not consist of more than ten members, and only one will be at liberty to address the committee.

"I have also to request that you will forward to me as soon as possible before the 11th inst., a full statement of the points which the association claim to place before the committee."

Accordingly, the deputation, consisting of seven members of the association, with Mr. R. W. Paul, the then chairman of the association, as spokesman, attended the meeting of the Theatres and Music Halls Committee at the offices of the London County Council, Spring Gardens. The following suggestions as to safety precautions were put forward:—

## SUGGESTIONS AS TO SAFETY PRECAUTIONS.

1.—That every operator, before being allowed to exhibit in a hall or shop under the control of the Council, should be required to possess a copy of the regulations for cinematograph exhibitions, with a statement signed by the operator to the effect that he has read and understood the regulations.

2.—That the lessee of every hall and shop regularly or periodically used for cinematograph exhibitions should provide a metal-lined compartment or a fire-proof room of construction approved by the Council's engineers, and shall be responsible for seeing that the

projecting apparatus is installed in such a compartment or room when in use.

3.—That no resistance shall be approved for use with a kinematograph projector if its temperature rises more than 80 C.\* above that of the surrounding atmosphere, and no such resistance shall be fixed inside a fire-proof compartment at a lower level than the base of the lantern.

4.—That no fuse shall be allowed inside a fire-proof compartment unless of the double-pole pattern and enclosed in a separate fire-proof box.

Furthermore, the committee respectfully suggest the following revision to the regulations at present in force:—

Clause 4.—That the body of the lantern shall be constructed of metal and not of wood or other non-conducting material.

Clause 9.—That under this clause the Council shall, after December, 1908, be empowered to require the operator to produce a certificate of competency, obtained by passing one of the examinations held under the management of the Joint Committee of the Kinematograph Manufacturers' Association and of the Northampton Polytechnic Institute, these examinations being independent of any trade influence and including a practical test of the proficiency of the candidate in working a kinematograph exhibition.

Details of the scheme, including syllabus of the examinations and regulations for registration of competent operators, were set forth in a booklet submitted.

The first examination under this scheme was held in October, 1907, and a satisfactory number of candidates attended, those who succeeded in passing the examination having been placed on the register of certified operators, a copy of which was presented to the committee.

Nothing further was heard officially from the London County Council until July 31st of the present year, but on making inquiries the association was given to understand that the Council had dropped the idea of introducing a Private Bill in Parliament in respect to this matter in favour of a short Bill, which it was thought would be introduced by Mr. Gladstone, the Home Secretary, and this decision was verified in a later letter from the L.C.C.

On the above date the Clerk of the Council wrote the secretary of the association as follows:—

31st July, 1908.

"The attention of the Theatres and Music Halls Committee of the Council has been drawn to an apparatus for immediately extinguishing fire in the event of the film in a cinematograph lantern becoming ignited. The apparatus is very simple in construction, and practically consists of a sprinkler, which is automatically set in action by the heat generated by the burning film. The committee have inspected the apparatus, and in view of its simplicity and effectiveness, they propose to recommend the Council to add to its regulations respecting the use of cinematograph lanterns in premises licensed by the Council a regulation requiring the use of some apparatus for immediately and automatically extinguishing the fire in the event of the film becoming ignited.

"Before submitting any recommendation to the Council, the committee will be glad to consider any observations which the Kinematograph Manufacturers' Association may wish to make upon the proposal, and I have to ask that you will be good enough to let me have any such observations by 1st October next.

"With regard to the amendments which the deputation from the association, which attended before the committee on 11th December, 1907, suggested should be made in the Council's cinematograph regulations, I have to state that the committee adjourned consideration of the suggestions pending the introduction of legislation dealing with cinematograph exhibitions. As, however, the Home Secretary has not, as was hoped by the Council, introduced a Bill upon the subject, the committee propose to consider the suggestions at their next meeting, and I will communicate to you any decision which may be arrived at."

This letter was discussed by the executive of the association, and the secretary was asked to write to the Clerk of the London County Council asking for further particulars of the extinguisher referred to,

\*This was a clerical error and a letter was forwarded to the L.C.C. pointing out the mistake, and stating that it would no doubt have been noticed by the Council's engineer.

and suggesting that it would be desirable for the members to have the apparatus demonstrated to them previously to the meeting on October 1st. This letter was sent under date September 4th, and was as follows:—

"In further reply to yours of July 31st, I am instructed by my committee to inform you that the K.M.A. are keenly alive to the importance of any safeguard against the danger to the public due to the inflammability of celluloid films. My committee feels, however, that it cannot endorse the recommendation of any device which has not been tested by the association, and I am instructed to request that you will give the committee an opportunity of investigating and testing the automatic sprinkler to which you allude.

"I am further directed to inform you that the committee will be glad to make all necessary arrangements for carrying out the test either on your premises, or elsewhere by arrangement."

In reply to the above, the Clerk of the Council wrote under date September 28th, as follows:—

"With reference to your letter of the 4th inst. with regard to the proposed amendment of the Council's cinematograph regulations, I understand that Mr. Thomas Barrasford, 11, Leicester Place, proposes to arrange for a demonstration to be given with an apparatus for extinguishing fires in cinematograph lanterns, and I have, therefore, to suggest that you should communicate with Mr. Barrasford with a view to representatives of the K.M.A. of G.B. attending the demonstration.

"The Theatres and Music Halls Committee of the Council will again consider the matter on the 14th October, and I shall be obliged if you will let me have a definite reply to my letter of 31st July before that date."

It appears from the above that the L.C.C. postponed their date for the demonstration until the 14th October, and it was reported that the apparatus in question. On September 26th the secretary of the association wrote to Mr. Barrasford as follows:—

"I am informed by the Clerk of the L.C.C. that you propose to arrange for a demonstration to be given with an apparatus for extinguishing fire in cinematograph lanterns. I should be pleased to hear when it will be convenient for a deputation of this association to see the apparatus, so as to enable a report to be made upon its working to the Theatres and Music Halls Committee of the Council, if requested."

No reply was received. Consequently, the secretary wrote again to Mr. Barrasford on October 3rd as follows:—

"With further reference to my communication of the 26th ult., and as we are asked by the L.C.C. to submit a report on your apparatus by October 14th, would it be convenient for my committee to see you working on Thursday next, October 8th, at 3.0 p.m.?"

No reply being received to this letter either, the secretary wrote the Clerk of the Council on October 8th, laying the facts before him as well as copies of the letters which had been sent to Mr. Barrasford. On October 15th the following letter sent by Mr. Barrasford by messenger to the Holborn Restaurant was handed to the secretary of the association. It was written on October 14th, which was the very day the L.C.C. had offered to receive a report upon the working of the apparatus:—

"Kindly call and see the kinematograph fire extinguisher any time to-day before the meeting."

The matter, therefore, dropped for the time being, but was revived by Mr. W. Reynolds, a member of the L.C.C., who pioneered the demonstration of the above-mentioned apparatus at the Hippodrome on November 26th. Notice of this demonstration was sent to some members of the trade, but many prominent members were omitted, notably some who were represented on the deputation to the London County Council. However, several members of the association were present at the demonstration, and it was proved that the extinguishing properties of the apparatus were good, but it was liable to be accidentally released. The inventor himself accidentally deluged his films and apparatus with water while preparing for the demonstration. Mr. W. Reynolds threatened the members of the trade with the passing of legislation at Christmas, enforcing the use of a device similar to the one he had exhibited, in all halls under the jurisdiction of the L.C.C. Various gentlemen present mentioned that there were on the market various apparatus for automatically extinguishing fire without the liability of accidental destruction inseparable from the apparatus exhibited by Mr. Reynolds, and at the instance of some members of the Kinematograph Manufacturers' Association



it was arranged to have a demonstration of these devices. Mr. Stoll volunteered to place the Hippodrome ring at the disposal of the trade for the purpose, at a date to be fixed later, and both Mr. Reynolds and Mr. Barrasford said they would give their hearty support to any contrivance which proved its efficiency. It was further stipulated by the members of the association that the competitive demonstration should be given under working conditions such as obtain in public exhibitions.

## Exhibitions.

### THE NORTH MIDDLESEX PHOTOGRAPHIC SOCIETY.

THE twentieth annual exhibition of this society was opened on Dec. 3 at Hanley Hall, Sparsholt Road, N. Unusual enterprises had been exercised by a few of the members, who had between them designed and carried out an enormous banner which hung across the end of Sparsholt Road, and must certainly have proved useful in attracting strangers. The catalogue this year is also a dignified-looking quarto, well produced, and boasting of a good interpagination of advertisements. On the whole the pictures, excellent as they were, did not strike us as passing in interest those of recent years; but, considering the high standard of those, such a thing is not surprising. The president, Mr. H. W. Fincham, exhibited thirteen pictures, besides prints, in the record section, and transparencies. His view in Ely Cathedral of "A Norman Arch" (50) has much dignity and style, and is perhaps the best of his works. Mr. Stewart remains true to the oil process, contributing five out of the total eleven in this method. The finest is "January" (19), a noble landscape, excellent in every way. Some of the others do not surpass the standard of his former successes. "A Lady of Quality" (1) is an eighteenth century costume piece of much charm, by C. A. Morgan. A. H. Piddington's "Corn Ricks" (15) and S. E. Wall's "Winter Showers" (20) are two extremely choice works, and A. H. Lisett's spirited "Folly" (46), the face of a laughing woman, should attract much attention. "Waterside—Chesham" (60), by J. C. S. Mummery, is a work of much quality and an object-lesson to others who so far have not passed into the higher stages of pictorial art. Space prevents more than mere mention of excellent works by Messrs. Beadle, Puddy, Mattocks, Turner, Black, and Harbert.

As usual, there was a large collection of good lantern slides, as well as thirty-nine Autochromes, which were well displayed by the optical lantern. The judges were Messrs. A. H. Blake and B. Gay Wilkinson, whose awards were as follows:—

(1), "A Lady of Quality," C. A. Morgan; (40), "The Evening Ebb," M. F. Black; (52), "Early Morning—Ely," H. W. Fincham; (54), "The Harbour," E. C. Ridge; (65), "Morning," A. H. Lisett; (77), "Smoke and Grime on a Flowing Tide," D. P. Fox; (88), "In the Woods," C. Beadle; (120), "The Edge of the Spinney," A. H. Piddington; (140), "An Al-Fresco Luncheon," W. Pringle.

Lantern Transparencies.—(266), "The Fountain," W. Pringle. Colour Transparencies.—(373), "Old Chingford Church," F. J. Nisbett.

Hon. Mention.—(11), "Dittisham Beach," W. Jackson; (23), "The Chapel Gates," H. W. Fincham; (26), "Sunset," C. A. Morgan; (55), "The Arrest," W. Pringle; (78), "A Mediæval Gateway," D. P. Fox; (135), "The Edge of the Forest," E. R. Mattocks. Lantern Transparencies.—(257), "A Sunshine Effect," E. Burton; (279), "Monte Cristillo," C. H. E. West; (315), "The Decorator," E. Barnard.

Colour Transparencies.—(370), "Gladioli" and (371) "Old China," F. J. Nisbett.

On Thursday evening, the 3rd inst., Mr. H. W. Fincham delivered a lecture upon "Ely Cathedral, the Queen of the Marshlands"; on Friday, the 4th inst. Mr. J. McIntosh lectured upon "The Thames," showing his Autochrome plates; and Mr. W. L. F. Wastell's popular "Afar in the Fatherland" delighted the Saturday audience.

AN APPRECIATION of the pioneer work and writings of the late F. H. Wenham in the field of aerial navigation is contained in the current issue of "Aeronautics" in the shape of a review of Mr. Wenham's papers of forty years ago by J. H. Ledebor. "Aeronautics," we may add, is the supplement to our contemporary, "Knowledge and Illustrated Scientific News," in which progress in aerial flight is recorded.

### FORTHCOMING EXHIBITIONS.

December 9 to 12.—Bolton Amateur Photographic Society. Secs., A. N. H. Wylde and J. Bailey, 25, Croston Street, Bolton.

December 30 to January 2.—Chelmsford Photographic Society. Entries close December 17. Sec., M. J. Morison, Savernake Lodge, Chelmsford.

December, 1908, to January, 1909.—Kiew International Photographic. Sec., S. I. Horovitz, Technical Society, Kreshchatik, 10, Kiew, Russia.

1909.

January 1 to 9.—Scottish National Photographic Salon. Sec., Robert Telfer, 138, Glasgow Road, Wishaw.

January 6 to 27.—Northern Photographic (Manchester). Entries close December 11, 1908. Sec., S. L. Coulthurst, Broad Oak Road, Worsley, Manchester.

January 19 to 30.—Glasgow Southern Photographic Association. Entries close December 30, 1908. Sec., Robert Lindsay, 189, Allison Street, Glasgow, S.S.

February 10 and 11.—Cowes Camera Club. Sec., E. E. Vincent, 4, High Street, Cowes.

February 20 to March 20.—South London Photographic Society. Sec., H. Creighton Beckett, 44, Edith Road, Peckham, S.E.

February 22 to March 6.—Birmingham Photographic Society. Entries close for abroad January 5, for England, February 12. Sec., Lewis Lloyd, Church Road, Moseley, Birmingham.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents have been received between November 23 and 28:—

PHOTOGRAPHIC PICTURES.—No. 25,126. Method of producing photographic pictures or designs having special properties. Alfred Brewerton Craven, 20, Edinburgh Road, Armley, Leeds.

DEVELOPMENT.—No. 25,370. Improved method of and means for determining the process of development of sensitised plates. Arthur Augustus Brooks, 57, Barton Arcade, Manchester.

SHUTTERS.—No. 25,513. Improvements in photographic shutters. Jules Richard, 53, Chancery Lane, London.

POSTCARDS, ETC.—No. 25,580. Improvements in and relating to photographic pictures or greeting cards and the like. Julian Athelstan Tayler and Ernest Percy White Tayler, 12, Cavendish Avenue, New Malden, Surrey.

CINEMATOPHGRAPHS.—No. 25,666. Improvements in safety devices to prevent the spread of fire when a cinematograph film is ignited. Leo Kamm, 27, Powell Street, Goswell Road, London.

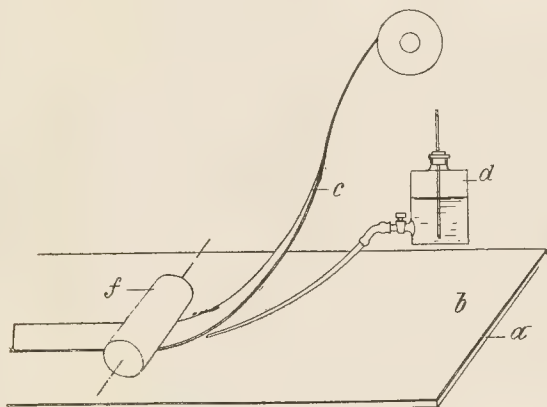
### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

NON-HALATION PLATES.—No. 11,341, 1908.—The invention consists in the coating of gelatine or other emulsion on plates of coloured glass, celluloid, etc., with the object of preventing halation in the negatives. The use of chromium-green glass is specially mentioned, and a modification of the method consists in the addition of chromic salts, such as the oxide, or hydroxide, or chrome green, to the emulsion. The inventors cite, as an advantage of the process, the fact of the green glass or film of the negative causing increase of brilliancy in prints from flat negatives and, further state that "even in the case of an ordinary negative these plates enable the printing to be done in a very bright light, which otherwise would injuriously affect the character of the picture to be produced, considerable time being thus saved." Bremer Trockenplattenfabrik B. Klatte, Bremen, Germany.

REPAIRING CINEMATOPHGRAPH FILMS.—No. 16,115, 1908. The process consists in treating cinematograph films which have become scratched, or have lost their polish in use by a method which restores to a great extent their transparency.

For effecting such enamelling of films made with gun-cotton, collodion, or celluloid, a very thin layer of collodion, *b*, is spread on a perfectly polished surface, *a*, of great length, such as plate glass, a table, a waxed cloth, glazed paper or cardboard, etc. The cinematograph film *c* to be regenerated is then unwound and placed on the collodion surface, so that the side not carrying the image is in contact with the collodion. As the unwound band *c* is being applied to the collodion surface *b*, some solvent for the substance



constituting the support or film (acetone, amyl acetate, alcohol, ether, methyl alcohol, etc.) is applied by means of a suitable device—for instance a bottle *d* and pipe, in such a manner that the solvent forms a connection, and acts by its interposition as a cement between the band *c* and the collodion layer *b* on the polished surface. A roller, *f*, operated mechanically or by hand, is arranged so as to press on the band *c*, thereby expelling the excess of solvent as well as air-bubbles, and pressing the band *c* firmly in contact with collodion layer *b*. When the band *c* has been properly applied and cemented, it is left to dry, and then, as in the usual enamelling process, the collodion layer *b* is cut through on both sides of the band *c*, which is then detached by stripping it off the polished surface *a*, which retains the remainder of the collodion layer *b* previously spread on it. The band *c* thus treated has thus a fresh polished surface, while the enamelling thus effected causes to disappear, or greatly reduces, all the existing defects. A similar operation can be effected on the emulsion side of the band in order to remove, repair, or fill up its scratched or scraped portions caused by its passage through the apparatus. It is obvious that the above-mentioned method of operating is given merely by way of example, and the glazing could be effected by means of some other regenerating substance than collodion, such as, for instance, gelatine, cellulose salts, varnish, casein, etc. La Société Anonyme des Plaques et Papiers Photographiques, A. Lumière et ses Fils, 287, Cours Gambetta, Lyons, France.

TELEGRAPHIC TRANSMISSION OF PHOTOGRAPHS.—No. 16,272. 1908. The invention is an improvement of that described in specification No. 1,615, 1908, according to which the differences in the relief of the image to be transmitted are translated into variations of electric intensity by an arrangement which has the great advantage

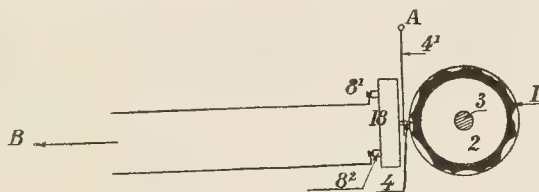


Fig. 1.

of being mathematically exact, but has, on the other hand, the drawback of requiring the use of a mechanical arrangement having a certain inertia, not to speak of the vibrations to which it is

subject, more particularly after a sudden change in the relief. It results from the foregoing that the speed of working of apparatus arranged on the lines set forth in the specification of Patent No. 1,615, 1908, is limited.

It is proposed to remedy this drawback by substituting for the arrangement of rheostat at the transmitting station a microphone, by the intermediary of which the variations of electric intensity are produced in the line circuit by the differences of relief of the various portions of the tracing or the image to be transmitted. In the accompanying drawings Fig. 1 shows the arrangement of the transmitting station A employing a microphone 18.

The relief proof 1 is still mounted on a cylinder 2, having a rotary motion around a fixed screw 3, which ensures at the same time its displacement parallel with its axis. Opposite the cylinder 2 a stylus 4, fixed to the end of a flexible strip 4', is provided. The stylus 4 is regulated in such a way as to be always in contact, on the one hand, with the proof 1, and, on the other hand, with the diaphragm of the microphone 18, which latter is rigidly mounted opposite the movable cylinder 2.

It is evident that the differences of relief of the different portions of the proof 1 will produce a more or less energetic pressure of the stylus 4 on the diaphragm of the microphone 18, and that this latter, pressing more or less strongly on the granules, will allow a quantity of current to pass from one of its terminals 8<sup>1</sup> to the

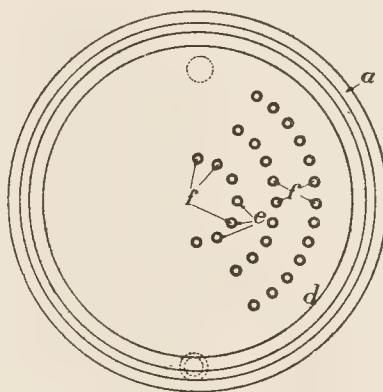


Fig. 3.

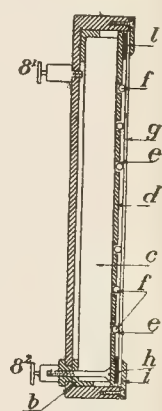


Fig. 2.

other 8<sup>2</sup>, which quantity consequently varies with the degree of the relief of the proof 1. The current of variable intensity passing through the microphone 18 acts on the transmitting station B at a distance in the manner indicated.

The following description of this microphone will further show how the other conditions, which are held to be indispensable for its application to the telestereograph, are realised.

This microphone with carbon granules is a so-called "separate granule" apparatus. It is formed of a cylindrical metal box *a*, in which a carbon bottom plate *c* is mounted with the interposition of an insulating ring *b*. On this bottom plate *c* there is fixed a thin insulating plate *d* of about 1.5 millimetres in thickness and perforated with circular holes *e*, which are themselves equidistant from each other and arranged in three concentric equidistant rings. In each of these holes, the diameter of which is about 2.5 millimetres, a spherical granule *f* of carbon is located, being itself, for instance, two millimetres in diameter.

The microphonic diaphragm *g*, mounted opposite the granules *f*, may be formed either of a disc of carbon of suitable thickness, or of a plate of steel or silver, or any other suitable metal. It is firmly gripped at the edge between a felt washer *h* and the ring *i*, which places it in direct connection with the body of the box *a*; 8<sup>1</sup> and 8<sup>2</sup> are terminals bringing the current. The apparatus is regulated, and the position of the origin of the galvanometer deflections and the required degree of sensitiveness obtained, by inserting one or more paper or thin cardboard washers *l* between the felt *h* and the diaphragm *g*. It is interesting to note that firm gripping of



the edge of the diaphragm *g* is necessary in order to exactly determine its position relative to the bottom plate *c*.

The working of the microphone constructed in the manner hereinbefore set forth, is evidently the same in all the positions which it is possible to give to this apparatus.

If the space between the diaphragm *g* and the bottom plate *c* is greater than two millimetres, the granules *f*, which, according to the preceding indications, are two millimetres in diameter, are normally in contact with only one of these elements, and the electric circuit is broken. This circuit only closes if there be exerted on the diaphragm *g* sufficient pressure to bring the granules *f* both in contact with the diaphragm *g* and with the plate *c* simultaneously. Under these conditions, when the apparatus is at rest, a galvanometer connected with the line, will indicate no deviation. There would be, however, a sudden deviation when a pressure is exerted on the diaphragm *g*, and as the strength of this pressure may be regulated, as hereinbefore set forth, by means of paper washers *l*, it is this first arrangement which is the best for the transmission of writing and line drawings.

If the space between the diaphragm *g* and the bottom plate *c* is not greater than two millimetres, the origin of the deviations is no longer the zero of the galvanometer, but a point which may be selected by regulation, seeing that current is always passing through the microphone. This arrangement is the most practical for the transmission of images with half-tones. Edouard Belin, 2, Rue Poncelet, Paris.

**TELEGRAPHIC TRANSMISSION OF PHOTOGRAPHS.**—No. 1,203, 1903. The invention relates to an improved means for transmitting photographs, etc., from one place to another by telegraphic means, the objects being to facilitate the conversion of the photograph to cypher, transmissible as an ordinary cypher telegram, and its reconversion at the receiving station to a facsimile of the original.

A transparent barrel revolves in a close spiral and contains within itself a suitably constructed electric lamp. The barrel is mounted at each end in such a manner that a transparent photographic film may be readily affixed to or removed from it, and is contained in a compartment, light-tight save for a small aperture equal in diameter to the pitch of the spiral. Light admitted through this aperture is concentrated upon a selenium cell contained in a second compartment, which cell forms part of an electric circuit, the rays of light varying in intensity according to the density of the portions of the film successively presented to the aperture. Sympathetic variations in the current are thus established which deflect the needle of a galvanometer, hereinafter called the shutter, constructed in such a manner as to cover and uncover one or two of three pin-holes communicating with a third compartment. These pin-holes are arranged in a line equidistant from one another, and admit to a third compartment light from a lamp arranged in the second. A small drum within the third compartment geared to a clockwork or other motor which imparts motion to the barrel, presents a sensitive photographic ribbon to the pin-holes, which ribbon, being acted on by re-agents, will exhibit single or double lines of varying lengths traced thereon accordingly as the movements of the shutter have regulated the admission of light, the ribbon being graduated in sections corresponding proportionately to the distance moved by a point on the periphery of the barrel in one revolution, and these sections are again sub-divided proportionately to the horizontal traverse of the point during the same period. The three distinct signatures registered on the ribbon may be denoted for the purposes of transmission by a convenient cypher consisting of numbers or letters of the alphabet, the length and position of the signature determining the particular number or letter to be used. The various parts of the apparatus are isolated in light-tight compartments. The cypher having been transmitted and received, may be reconverted to pictorial form by means of an instrument operated by three keys actuating levers armed at their extremities with suitable type, producing three distinct impressions, the type all acting at one point. Each of the keys when depressed imparts motion, by means of ratchet and pawl, to a cylinder which is constrained to move in a spiral, both rotary and translative motion being proportionate to the corresponding motions of the barrel. The type corresponding to the key depressed makes a distinctive impression upon a transparent film faced with a suitable opaque substance readily removable by the type. A

graduated indicator is fitted to the apparatus so that the exact position of the cylinder in the course of its rotation can always be seen. Frank Wyndham, 11, Grosvenor Road, Norwich.

## New Trade Names.

**CERTINAL.**—No. 307,396.—Chemical substances used in photography. Ilford, Ltd., Britannia Works, Roden Street, Ilford, London, E., manufacturers of photographic plates, papers, and films, October 28, 1908.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

FRIDAY, DECEMBER 11.

Colne Camera Club. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.  
Whitby Camera Club. Dutch Lantern Pictures. A. E. Staley & Co.

MONDAY, DECEMBER 14.

South London Photographic Society. "Bromide Printing and Toning." E. W. Taylor.  
Scarborough and District Photographic Society. "Pictorial Slides and Bromide Prints." Harry and C. E. Wanless.  
Cleveland Camera Club. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.  
Handsworth Photographic Society. Conversatione.  
Lancaster Photographic Society. "Making, Mounting, and Binding of Lantern Slides." R. T. Simpson.  
Bradford Photographic Society. "Lantern Slide Making." F. Nicholson.  
Southampton Camera Club. "The Humble Beauties of the Flower World." E. Seymour.  
Gravesend Photographic Society. "The Possibility of a Photograph being Artistic." Edgar F. Simons.

TUESDAY, DECEMBER 15.

Royal Photographic Society. Technical Meeting.  
Darlington Camera Club. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.  
Hackney Photographic Society. Members' Annual Sale.  
Epsom and District Literary and Scientific Society. "Architectural Photography, Pictorial and Technical." H. W. Bennett, F.R.P.S.  
Leeds Photographic Society. "The Elements of Architectural Photography." J. R. Wigfull.  
Birmingham Photographic Society. Lantern Evening.  
Blackburn and District Camera Club. "Photography in Natural Colours." F. Higginbottom.  
Worthing Camera Club. "Carbon" Demonstrated. Richard Long.  
Wimbleton and District Camera Club. Discussion on "Lantern Slide Making."  
Hanley Photographic Society. Y.M.C.A. Trimming and Mounting Competition.  
Chiswick Camera Club. Lantern Lecturettes. By members.

WEDNESDAY, DECEMBER 16.

South Suburban Photographic Society. Discussion. "The Best Way for Beginners?"  
Wimbledon Park Photographic Society. "Transparencies, How to Make and Colour Them." Howden Wilkie.  
Borough Polytechnic Photographic Society. Lantern Slide Competition.  
Croydon Camera Club. "X-Ray Work." C. E. Kenneth Mees, D.Sc. and W. H. Smith.  
Dudley and District Camera Club. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.  
North Middlessex Photographic Society. "Elementary Optics." H. Stuart.  
Leeds Camera Club. "Leeds in the Olden Days." Alf Mattison.  
Coves Camera Club. Lantern Slide Making Competition.

THURSDAY, DECEMBER 17.

Birmingham Photographic Society. "Flashlight Photography with Agfa Specialties." F. C. Hart.  
Bolton Amateur Photographic Society. Exhibition of Thornton-Pickard Prize Slides and Apparatus. R. Hesketh.  
Leek Photographic Society. "A Scamper in Holland." Zealand S. Coy.  
Handsworth Photographic Society. "Agfa" Chemicals and their Application." F. C. Hart.  
Liverpool Amateur Photographic Association. Smoking Social in Club Rooms.  
Midcheshire Photographic Association. "Printing Processes: Oil and Gum." T. A. Knoblauch and Robert Thomson.  
Richmond Camera Club. "Mounting and Framing." J. D. Gibson.  
Jarrow Mechanics Institute Camera Club. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.  
L.C.C. School of Photo-Engraving, Bolt Court. "The Mark-Smith Etching Machine." G. Venner Dear.

### ROYAL PHOTOGRAPHIC SOCIETY.

MEETING held November 8, the President, Mr. J. C. S. Mummery, in the chair. On the proposition of Mr. A. W. W. Bartlett, seconded by the Rev. F. C. Lambert, Messrs. Calder, Marshall, and Co., were re-elected auditors for the society.

The following were elected Fellows:—Lord Redesdale, C.B., C.V.O., J.P., D.L., Nicholas Smirnoff, H. Essenhigh Corke, H. G. Drake-Brockman, and Mrs. Miuna Keene.

The President, Mr J. C. S. Mummery, then delivered his presidential address on the "Place of Photography among the Graphic Arts." Photography, he said, had had a very great destroying effect. It had no doubt reflected the spirit of the age which gave it birth, an age of commercialism. Its triumphs had been those of commercialism rather than of improvement upon the arts which had preceded it. But in art, the mental aspirations were towards the best, in however small volume, rather than towards a great deal of only mediocre quality. Also when photography came into existence art in England was at a low ebb. The exponents of the art of painting aimed at telling a story or pointing a moral, not at following art for art's sake. There were some few great exceptions who have since been recognised as masters of art; but at the time they were not understood, and the general mass of work was weak in kind. It was for this reason that at first photography was spoken of as a possible displacer of painting; whereas painting, of all the arts, has been the least affected by it. Only the lowest forms of portrait painting could be said to have been affected by photography.

Apropos of the reference to the early days of photography, it was an interesting question—though the speaker could only put the question—whether the Pre-Raphaelite movement in art was in any way inspired by photography. If it was not, it was remarkable that, within a few years of Daguerre's discovery becoming known, a school of painters should have arisen whose tenets were opposed to the "breadth" then common in painting, and in favour of almost photographic detail.

Another destroying act of photography was committed upon miniature painting. The modern effort to revive the art of the miniature painter had been sustained, but the result, the speaker thought, could usually be described as not that of the miniature painter, but only painting on a small scale.

As regards copper-plate engraving, which about the middle of the last century was a highly developed art, but more in a reproductive than in a creative way, attempts to quicken and cheapen it had undoubtedly destroyed it. It was in its sphere an example of beautiful individual treatment; but its sister arts of mezzotint and etching, because they were practised as ends in themselves, possessed greater vitality, and were less readily spoiled by photography. Line engraving, too, fell into desuetude from want of patronage, and was thus dead in England; whilst wood engraving, though a superb art, was reproductive chiefly, and was thus killed by competition with photography, except in its commercial applications. At the present time there was no school for the training of the wood-engraver, and no artist in England who practised the art.

Turning to the estimation in which objects of art are held at the present day, Mr. Mummery said that the plethora of cheap productions had undoubtedly discouraged the collector, who in former days had sought to possess himself of objects for their beauty, not for their rarity or uniqueness. He could hardly believe that collectors could possibly take pleasure in the acquirement of process reproductions, yet an item in a recent sale catalogue suggested that even that might come. The item was a set of 1,623 postcard portraits of Phyllis and Zena Dare, unused, all different, and worth £14. He had inspected all the cards and had found that, in fact, many were identical in subject—the same smile in a different setting. It appeared that one of the beneficent duties which may save the work of the camera from being described, in Landseer's punning phrase, the "Foe to Graphic Art," was its service in transferring a knowledge of art from the classes to the masses. It might thus raise public taste and make the way for the artists in photography; but it had still to be admitted that the latter were uncertain in their aims, and ran after strange devices, which they mistook for or asked others to accept as art.

Mr. J. C. Warburg, in proposing a vote of thanks to Mr. Mummery, mentioned that, in reference to photography and the Pre-Raphaelites, Mrs. Cameron was the photographer of pictorial aims in that period, and he believed she was more influenced by the Pre-Raphaelites than they were by her.

The vote of thanks was seconded by Mr. W. Thomas, who said he did so with very great pleasure, since he had had occasion, with other friends in the past, to know, as perhaps others had done no less, the endless labours which Mr. Mummery had performed with the aim of advancing pictorial photography.

With the demonstration of the meeting's thanks to Mr. Mummery the proceedings terminated.

**SIDCUP CAMERA CLUB.**—The first meeting of the newly-formed camera club, the photographic section of the Sidcup Literary and Scientific Society, was held at the Public Hall, Sidcup, on December 4, when Mr. F. C. Starnes, of Dartford, lectured on "Development." The lecturer dealt fully with the theory and history of developing plates, papers, and lantern slides, illustrating various points by means of excellent lantern slides. Mr. Starnes spoke highly in favour of the Watkins' system of developing, and strongly recommended the following formula for developing P.O.P.:—

Metol .....	7 grains.
Tartaric acid.....	58 grains.
Soda citrate .....	35 grains.
Water .....	20 ounces.

The partially printed P.O.P. print is placed in the above dry as it comes from the frame, and is developed to its full strength; it is then toned in the usual manner and fixed. If a print of a reddish tone is required, the picture need not be toned, but simply fixed. The officers of this new and promising club are: President, F. H. Carr, F.I.C.; vice-presidents, B. Davidson and Harold Moore; hon. secretary, H. B. Hale, Gresham Lodge, Station Road, Sidcup. The meetings are held monthly, the next being on Tuesday, January 26, when Mr. P. R. Salmon will lecture on "Home Portraiture." The annual subscription is 5s., but members of the Literary and Scientific Society can join on the payment of half a crown.

**BOROUGH POLYTECHNIC PHOTOGRAPHIC SOCIETY.**—At the meeting held December 2, Mr. Essinghish Corke gave the lecture on "Various and Novel Lighting Effects," which he has delivered before a number of photographic societies during the present season. In this lecture he has explained and illustrated on the lantern screen a variety of effects in portrait lighting, produced in most cases by methods devised by himself, and giving the effects of various forms of artificial lighting by the use of daylight in an ordinary room. The lecture has thus been one of the most novel at present offered to photographic societies, and it may therefore be opportune to say that the lecturer, who follows the profession of a portrait photographer at Sevenoaks, Kent, has still one or two open dates among societies within a reasonable distance of London, whilst he hopes shortly to arrange visits to a series of the photographic associations in the North of England. Mr. Corke prefaced his lecture with some general elementary instruction on the taking of portraits in an ordinary room with no accessories beyond an extemporised background and a reflector. He then proceeded to show examples of modifications in outdoor and indoor portraiture, and to explain the method employed in producing them. One of the first of these was a portrait in the style of a pencil sketch. For this purpose the model was posed out of doors against a dead white background and in a full flood of light on all sides. The face was arranged in profile, and a dead black screen placed close up to the face, so as to cause the outline of the face to appear as a darker line than the rest of the face. A rather over-exposed negative was made and kept thin and flat in development. The effect thus obtained is heightened by covering the back of the negative with matt varnish, and putting light washes of colour on those parts which print too darkly, such as the hair and the shadows under the nose and chin. Very delicate and dainty effects were secured by this method.

A series of striking effects obtainable by using only a small area of light from a window in conjunction with a mirror in the room were shown, and the method of each explained.

The latter portion of the lecture dealt with the method of firelight and lamplight effects, which have already been described and illustrated in the Press, so that a detailed report of them is not necessary. The method, in brief, consists in photographing the sitter by a strong light coming through an aperture at the floor level, keeping the negative fairly strong, and making a print the whole ground of which is pale orange in colour. Mr. Corke made his prints in carbon on orange-coloured transfer paper, or prepared bromides, which he stained with the "Bertha Orange" dye of the Vanguard Manufacturing Company. The method in the case of photographs giving the effect of lamplight portraits was very similar.

The lecture, which was illustrated by a series of fifty slides, was listened to with great interest, and has evidently interested photographers in a novel and very fascinating sphere of work.



## New Materials, &c.

"Ensyna" Paper. Made by Houghtons Ltd, 88 and 89, High Holborn, London, W.C.

Under the name "Ensyna" simply, and without further qualification, Messrs. Houghtons Ltd. have introduced a new printing paper, which they are wise not to have named in any way which can suggest resemblance to any other sensitive paper. For "Ensyna" is a product totally different from any other on the market: different in the substances contained in its sensitive film; different in the means and method taken to produce the picture upon it, and different in the possibility of modifying the standard procedure to secure special effects. Though "gaslight" describes Ensyna in so far as the paper may be exposed and developed by gaslight, the new product is totally unlike the many papers now termed "gaslight," and the developer used for them would be quite useless for "Ensyna." To sum up, in a word, the distinctive quality of the new paper with a view to its intelligent use, "Ensyna" is a silver paper, an invisible image on which is built up by an acid or physical developer, that is to say, the difference between the present dry plate and the defunct wet collodion process is no greater than that between "Ensyna" and "gaslight" or P.O.P. papers.

And as regards the practical facilities which this new method provides, it may be said that "Ensyna" gives the effects of P.O.P. (in a more permanent form) by the "gaslight" method. But as it is much more rapidly finished off than a gaslight paper, and as it dispenses with gold or platinum toning, it is more to the point to say that it gives by gaslight prints which resemble (but have greater claims to permanence than) those on self-toning papers, by a method of production which is as expeditious as the "development" and clearing of platinotype prints. In other words, "Ensyna" paper allows a photographer to make by his fireside of an evening prints which have all the appearance of toned or self-toned P.O.P.'s, and are turned out with an interval of less than ten minutes between exposing behind the negative and hanging up to dry. These claims can be substantiated by the expenditure of a shilling on a packet of paper and the necessary developer; but before these materials are taken into use there are other points in the use of the paper which should be noted also for the confirmation which can easily be applied.

It should first be explained that the procedure in the case of "Ensyna" paper is as follows:—

Exposure .....	say 0 min. 30 sec.
Water bath .....	say 1 min. 0 sec.
Development .....	say 2 min. 0 sec.
Fixing .....	say 0 min. 30 sec.
Washing .....	say 2 min. 0 sec.
Total .....	6 min. 0 sec.

Unlike other printing processes, in which an alkaline developer is used, increase in the time of exposure of "Ensyna," even up to many times the amount required for a normal print, has only one result, that is to give a print of a warmer colour. In the other direction—of under-exposure—there is not the same range; a print which is much under-exposed is fogged by the developer before it gains proper strength, but if, despite this fact, the process be carried on and the fogged print be treated with Farmer's reducer a good print can nevertheless be obtained. In short, the novel fact to be borne in mind in connection with "Ensyna" paper is that the tone of the print is fixed by the exposure, and that within very wide limits errors of exposure do not mean the failure to obtain a print, but have as their effect the production of prints warmer or colder in tone than was intended.

Further, it will be understood that the above method gives a print consisting of a pure silver image, and therefore the permanence of "Ensyna" prints is at any rate equal to that of bromides, leaving out of consideration the fact that its sensitive film is of a much more soluble character, and allows of very rapid fixation in a much weaker solution of hypo than the one ordinarily employed. The above observations indicate the salient points of difference between "Ensyna" and other papers which are currently employed. It now remains to describe the results obtainable with the new paper and

the materials offered by Messrs. Houghtons Ltd. for development and fixing.

Though "Ensyna" is capable of giving a wide range of tones, it will be used—particularly by professional and trade workers—as a means of obtaining prints resembling sulphocyanide-toned P.O.P.'s and self-toning results. That it does give prints which are practically indistinguishable from these was evident to us by our first trials of the paper. The tone depends, as already stated, on the adjustment of the exposure, and the time that is necessary for the purplish-black characteristic of a P.O.P. print toned in a gold-sulphocyanide bath is somewhere about the minimum which the paper should have. Exposure much less than this leads, as we have said, to fogged prints which require cleaning in Farmer's reducer. In the direction, however, of over-exposure, the paper will stand a good deal more than can possibly be given to it unintentionally, and the only effect is to give prints of a warmer colour, and in regard to all these processes it should be understood that the image, necessarily from its method of formation, consists of pure silver deposited in various states division which give the different tones. The theory of the process thus supplies the strongest *a priori* reason for regarding the "Ensyna" results as permanent.

This question of permanence will at once arise in connection with the makers' directions to fix for half a minute only and wash for two minutes only. Those who would hastily condemn this recommendation as dangerously heterodox should not overlook the fact that the substance of the sensitive emulsion is not silver bromide, but a silver salt of much higher solubility, and therefore that such a short time of fixation as half a minute may conceivably be ample for the complete conversion of the silver salt into perfectly soluble compounds. And further, the other fact that must not be disregarded is that the image is not one readily affected by traces of hypo left in the film. The makers, we imagine, will not claim that two minutes completely discharges the last traces of hypo from a sheet of paper. But what they do claim, and have proved by repeated practical tests, is that the silver image produced by the "Ensyna" method possesses a degree of immunity to the action of hypo such that the minute traces left after two minutes' washing have no prejudicial effect upon the print. And as it is common knowledge that the first short period of the washing process removes over 90 per cent. of the hypo, and as it has further been proved repeatedly that a developed bromide (i.e., silver) print will last indefinitely, even when it has received the briefest rinse from the hypo bath, therefore, say we, it is reasonable to confirm the correctness of the view taken by the makers, pending the opportunity for practical trials. Simple dipping of part of a sheet of "Ensyna" paper into the hypo bath will show the great speed at which fixation takes place, a fact which should provide reassurances as to the like effectiveness of the rapid washing.

It has been necessary for us to touch upon these points at some length, since the instructions for the use of "Ensyna" differ so greatly from those for other papers. Indeed, they differ more than is apparent from the makers' directions, yet the provisions made by Messrs. Houghtons for all classes of users have reduced the manipulation of the paper to the acme of simplicity. The print, either at once after exposure or after the lapse of any reasonable time, is covered with clean water, in which it remains for a few seconds—until it becomes limp. The water is then poured off and sufficient developing solution for the single print applied—i.e.,  $\frac{1}{2}$  oz. for prints up to 5 x 4, and  $\frac{3}{4}$  oz. for prints up to half-plate. After development to a point a little short of full—which lasts about two minutes—the developer is thrown away, clean water poured on, and the print allowed to reach its full strength. It is then transferred to the hypo for half a minute, and then given its washing of two minutes, or longer if more convenient.

Thus the materials for the process other than the paper are the developer and the fixing-bath. The former, which has to be of composition specially suited to the process, is put up by Messrs. Houghtons as "Ensynoid," both as a single solution sufficient to make 24 ounces of developer for 6d., or as compressed tablets ("Ensynoids") packed in tubes, containing 1 doz. pairs (each of which makes 8 oz. of developer) at a price of 1s. 6d. These "Ensynoids" are likewise supplied in cachets containing one pair of tubes (8 oz. of developer) for 2d. per cachet; and the developer is also supplied in large quantities to professional and trade workers on special terms. The "Ensyna" acid fixing salt, which is specially recommended for

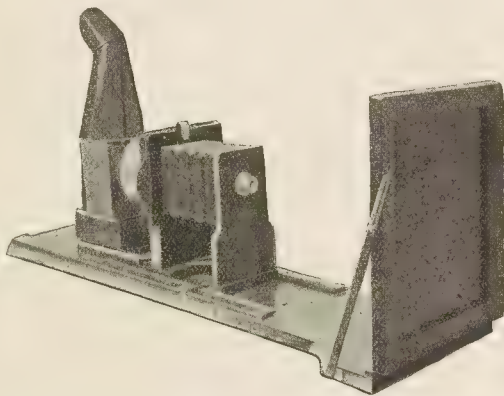
the process, and certainly dissolves most rapidly, is sold in tins sufficient to make 60 oz. of fixing solution for 3d. The tin is marked so that one-third only of the contents can be used at a time to make 20 oz. of the bath.

The paper is sold in sheets  $24\frac{1}{2} \times 17$  at 2s. 6d. per tube of two sheets, or 13s. 6d. for 12 sheets. The gross packet of quarter-plate pieces is sold at 6s.;  $6 \times 4$  at 9s. 4d.; and  $8 \times 6$  at 18s. 6d. "Ensyna" is, of course, put up in 6d. and 1s. packets—e.g., 22 quarter-plate pieces,  $16 \times 5 \times 4$ , or 10 half-plate pieces for 1s. Long as this notice has already proved, we have not yet exhausted what we have to say on this remarkable addition to photographic printing processes, and we shall have to return to the subject at an early opportunity. Nevertheless, we have said enough to show that the trade worker, no less than the amateur, has here the means of producing with great expedition prints of undoubted permanence, and that, under conditions which render him independent of daylight. We anticipate that the forthcoming Christmas season will see our amateur friends busy with trials of the new paper, and it is not too much to suppose that even now the busy professional may be glad to avail himself of the aid of "Ensyna" in dealing with a press of work, or will certainly lose no time in fully investigating its remarkable properties.

**DEVELOPER PRICES.**—Messrs. Fuerst Bros. advise us that from January 1 next the prices for the Pushaxe Universal Developer will be as follows:— $\frac{3}{4}$  oz. bottles, 1s. 2d. each; 7 oz. bottles, 1s. 10d.; 18 oz. bottles, 3s. 3d. Also from January 1 the following reductions in the price of Hauff's well-known cartridge developers, amidol, metol, glycin and ortol, will be in force: 1s. 10d. per box of six cartridges, and 3s. per box of ten cartridges.

## New Apparatus, &c.

THE "AUTOKON" ENLARGER. Messrs. Griffin, of Kingsway, London, W.C., have issued an improved form of the automatic enlarging outfit, which, as our readers know, obviates the separate focussing of each enlargement, the only adjustment necessary being that for the size of the picture, which is done by means of the rack and pinion. In the improved form, a double swing is given to the easel with a view to correcting distorted lines in the negative. Further,



the baseboard is provided with such length of rack work as is sufficient for making a lantern slide from a quarter-plate negative, for which purpose the lantern is employed as a camera, an additional carrier replacing that for the negative and carrying a sensitive lantern plate, whilst the easel has a detachable board, in which the negative is placed. Also, the enlarger is now made throughout in mahogany, although its price has not been raised. Complete with  $5\frac{1}{4}$ -inch condenser, oil or incandescent gas lamp, lens, easel, carriers, and baseboard, the price is £5 in quarter-plate size, or £3 5s. without condenser and lamp. The whole apparatus folds up and packs into a case measuring  $17 \times 18 \times 16$  inches.

## Analecta.

*Extracts from our weekly and monthly contemporaries.*

### Tank Development of Lantern Slides.

Mr. S. E. Dowdy, writing on the subject of "tank development for glass positives and lantern plates" in "The Amateur Photographer and Photographic News" for December 8, says: "The tank method is peculiarly well adapted for this purpose if a systematic way of working be adopted. Briefly, its advantages over the usual way of doing slides singly in a dish may be enumerated as follows: In the first place, it reduces the process of obtaining a set of slides of similar density and tone to almost a mechanical certainty. Secondly, it admits of the prolonged use of very dilute developers, such as occasionally have to be used to obtain very warm tones, without fear of oxidation of the solution and staining of the slides. Again, the dilute developers generally used in the tank yield softer effects, and bring out fine detail better than the stronger solutions more often employed in dish development. It is also at times a great advantage to be able to develop a batch of exposed slides and at the same time attend to something else."

## New Books.

"The Wellcome Photographic Exposure Record and Diary." London: Burroughs, Wellcome, and Co. 1s.

Of improvement in outward form and internal arrangement of this pocket-book we can expect to see little sign—Messrs. Burroughs Wellcome have surely touched finality in these respects. But the "Diary," nevertheless, has been further "improved," first by the inclusion of a table of speeds of bromide papers and lantern plates, and, secondly, in an article on time, tank, or stand development, in connection with which a wall chart is presented, giving the times for development of the "average" plate or film, at a series of different temperatures, which table is used in conjunction with a series of factors for plates which are more or less abnormal in reference to Messrs. Burroughs Wellcome's standard of time of development. For the convenience of users in different parts of the world three editions are issued:—1. The Northern Hemisphere Edition (bound in light green), for all countries north of the Tropic of Cancer. 2. The Southern Hemisphere and Tropical Edition (bound in dark green), for all countries south of the Tropic of Cancer. 3. The United States Edition (bound in red), for use in the United States of America. When purchasing care should be taken to specify which edition is required.

"General and Practical Optics." By Lionel Lawrence, London: The Orthos Press.

This book is evidently intended for the use of the sight-testing optician, and therefore it contains very little that is of any interest to the photographer, unless we assume that those interested in photographic optics are of necessity interested in the more general aspects of the science of optics. There are certain references to the "Unifocal" lens, which we may assume to mean the unifocal lens of Steinheil, and the telephoto lens and the stereoscope are described in brief paragraphs. One unfortunate paragraph is devoted to an absolutely wrong description of the Adon lens, which is not an ordinary telephoto construction reversed end for end as the author seems to imagine. Evidently the writer is more at home in the domain of spectacles than of photographic optics, and it is quite possible that sight-testing opticians may find his book to be of very considerable value.

THE "NEW ZEALAND ILLUSTRATED."—This Christmas number of the "Weekly Press," Christchurch, New Zealand, reaches us filled from cover to cover with fine half-tone illustrations, many printed in several colours. The whole production, from the photographic exposures to the printed supplement, is the product of the office's own staff, and is one more of the yearly demonstrations which the "Weekly Press" has given of its efficiency in all departments of the reproduction crafts.



## CATALOGUES AND TRADE NOTICES.

**ENLARGING NOTES.**—Messrs. Wellington and Ward have just issued a 52-page booklet in the attractive style of their general handbook to the use of the Wellington products. It deals, however, only with the making of enlargements on the "Wellington" papers by day and artificial light. The writer shows how advantage may be taken of the excellent Wellington S.C.P., or gaslight paper, for enlarging work under suitable conditions, and proceeds to describe the chief forms of apparatus for the making of enlarged prints. Development, toning, and mounting enlargements are the subject of instruction, and there are also useful notes on the printing of clouds into enlargements and the use of locking silk. In short, the matter is nicely adapted to the wants of the amateur worker, who does not require to be confused by an overplus of advice. We advise application for a copy to Elstree, Herts, or to the local dealer, who can adopt no better method of drawing the attention of his customers to the fine products of the Wellington factory.

**CHRISTMAS PRESENTS.**—Private individuals, equally with photographic dealers, may be advised to choose from the catalogues of the photographic houses when making Christmas presents or causing them to be made, and in carrying out this excellent policy, so far as it concerns young folk, one list which should not be overlooked is that of Messrs. W. Butcher and Sons, Limited, entitled "Hobbies for the Boys." This catalogue includes not only magic lantern slides, cinematographs, and enlargers, but model steam engines, locomotives, and electrical and mechanical novelties, suitable for presents. In connection with this and another list specially appropriate to the Christmas-present season, Messrs. Butcher issue a set of window slips, calling attention to the suitability of cameras, etc., as Christmas gifts.

**THE "COMPOUND" SHUTTER.**—Users of this almost ubiquitous shutter, who obtain it without full details as to its use, will be interested to learn that Messrs. A. E. Staley and Co., 19, Thavies Inn, E.C., have just issued a booklet descriptive of the latest model of this excellent piece of mechanism. The booklet can be had by sending Messrs. Staley one penny stamp.

**BARGAINS AT N. AND G.'S.**—A list of sundry apparatus, among which figure a few cameras, has been prepared by Messrs. Newman and Guardia, 90-92, Shaftesbury Avenue, London, W., and is found to offer a variety of goods at very considerable reductions. Printing-frames, changing-bags, trays and dishes, and other articles, for the quality of which the name of Messrs. Newman and Guardia, as vendors, is sufficient guarantee, are listed. The cameras include various special patterns and sizes of the N. and G. instruments, and both amateur and press photographers may be advised to take the opportunity of securing one of these deservedly renowned instruments at a substantial reduction of price—in some cases for less than half the list price.

A FULL descriptive circular of the Ewon Arc Lamp recently noticed in these pages is now obtainable from Messrs. A. E. Staley and Co., 19, Thavies Inn, Holborn Circus, London, E.C.

## News and Notes.

**AN ADON TELE-PHOTOGRAPH.**—Messrs. J. H. Dallmeyer, Ltd., send us an excellent enlargement from a negative taken with a Dallmeyer Adon telephoto lens in 1-50th second on the occasion of Mr. Jabez Woolfe's seventh attempt to swim the Channel. The Adon was used on a 5 x 4 "Videx" camera, the negative being made on a rapid "Imperial" plate. The camera extension was about 41 in., which gave an equivalent focal length of 32½ in. At the time of the exposure the photographer, Mr. Dudley Stone, of St. Bartholomew's Hospital, was about 60 ft. from the swimmer, and the crispness of the definition (the word "Oxo" being readable on the cup, which is being offered to the swimmer) speaks well for the optical quality of the work.

**FIRELIGHT EFFECTS BY DAYLIGHT.**—Those who have read the reports of Mr. Essenhigh Corke's lecture on the methods of firelight-effect photography will be interested to know that a booklet embodying Mr. Corke's instructions, and illustrated by two excellent

examples of his results, is offered free by the Vanguard Manufacturing Company, Maidenhead, who, if specially asked to do so, will at the same time send their full list of chemical specialties for photographers. Both are certainly worth applying for.

**ROYAL INSTITUTION.**—The following are some of the lecture arrangements at the Royal Institution, before Easter:—Professor W. Stirling, a Christmas course of six experimentally illustrated lectures on "The Wheel of Life," adapted to a juvenile auditory; Professor A. A. Macdonell, three lectures on "The Architectural and Sculptural Antiquities of India"; Professor J. O. Arnold, two lectures on "Mysteries of Metals"; Mr. William Archer, two lectures on "The Revival of Modern Drama"; Dr. Hans Gadow, three lectures on "Problems of Geographical Distribution in Mexico"; Mr. A. D. Hall, two lectures on "Recent Advances in Agricultural Science"; Professor G. H. Bryan, two lectures on "Aerial Flight in Theory and Practice"; Professor Sir Hubert von Herkomer, two lectures on (1) "The Critical Faculty," (2) "Sight and Seeing"; and Professor Sir J. J. Thomson, six lectures on "Properties of Matter." The Friday evening meetings will commence on January 22, when Dr. Alfred Russel Wallace will deliver a discourse on "The World of Life: as Visualised and Interpreted by Darwinism." Succeeding discourses will probably be given by Lieut.-Colonel Sir Frederic Nathan, Professor J. G. Frazer, Professor H. A. Wilson, Sir Henry Cunynghame the Right Hon. the Earl of Berkeley, the Right Hon. Viscount Esher, Mr. S. G. Brown, Mr. R. Threlfall, Mr. A. S. Eddington, Professor Sir J. J. Thomson, and other gentlemen.

**FIRE AT ST. BLAZEY.**—A fire occurred last week in the premises of Mr. S. Dalby-Smith, photographer, Station Road, St. Blaze. The large window had been dressed the previous day for the Christmas show, and as Mr. Smith was lighting the gas some material ignited, the flames spreading with alarming rapidity. Help was quickly rendered, and with great promptitude a large quantity of water was poured on the blaze, with the result that the fire was got under in about ten minutes. Damage amounting to about £50 was caused.

**HOUGHTONS' SMOKING CONCERT.**—The Ensign Smoking Concert is a strong annual feature. This year it will be held at the Holborn Restaurant, in the Throne Room, on the evening of Friday, December 18. A particularly strong programme has been arranged—all professional and music-hall performers—and from the programme there is every prospect of the audience thoroughly enjoying themselves. It is not generally known that Messrs. Houghtons are prepared to sell a few tickets to amateur photographers and others who usually attend functions of this sort, but immediate application—and 2s.—should be made to 88, High Holborn, if a ticket is wanted for this year's concert.

**COWES CAMERA CLUB.**—The meetings of this society will in future be held on the second and fourth Wednesdays in each month, October to March, inclusive, and on the first Wednesdays during the months September to April, in each case at 8 p.m. At a recent meeting Mr. E. E. Vincent was re-elected secretary, and all communications should still be addressed to him at 4, High Street, Cowes, I.W. The society proposes holding an open exhibition in February next, particulars of which will be announced later.

**THE LUMIERE NON-INFLAMMABLE CINEMATOGRAF FILM.**—A demonstration which was largely attended by the cinematograph and photographic trade, was given at the Holborn Restaurant on Tuesday last, when Mr. Thos. K. Grant, of the Lumière N.A. Co., introduced the new non-flammable cinematograph film which is now being manufactured by the Lumière firm. Mr. Grant pointed out that instrumental devices only touched half the problem in cinematograph conflagrations; they might prevent ignition of the film in the lantern, but there was the equal danger due to firing of film standing in the projection box. A non-inflammable film was the only preventive of both these possibilities, and he hoped that the demonstration would show that the new Lumière product responded to the requirements of a safe film. Mr. Grant then attempted to set fire to a film with a match, but the material merely crackled without catching fire. Some lengths of film were then projected in an instrument of the Warwick Trading Co. (Mr. Will G. Barker), and the technical excellence of the results were seen. On stopping the machine the only effect upon the film left exposed in the focus of the light was a breaking down of its structure,

causing a kind of efflorescent appearance upon the screen. Mr. Grant stated that the film had neither celluloid nor any kindred substance in its composition, and that the only difference in its handling was the somewhat longer time which was required for drying. In reply to a question, he said that broken film was repaired in the same way as at present, but in place of amyl acetate used for celluloid film a different cementing medium was used.

THE LEVANTINE RIVIERA is the title of a dainty little guide book issued by Messrs. Reynold-Ball's Guides, 27, Chancery Lane, London, W.C. It deals with that portion of the Italian coast from Genoa to Pisa, which has, within the last few years, become increasingly popular, and photographers intending to winter abroad would not easily find a more suitable locality in which to pursue the search for either health or pleasure, combined with photographic picture making. The book contains numerous illustrations from original photographs, together with a quantity of information, both practical and historical in character. The price is 2s. 6d.

## Correspondence.

- \*• We do not undertake responsibility for the opinions expressed by our correspondents.
- \*• Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.

### STEREOSCOPIC PROJECTION

To the Editors.

Gentlemen,—With reference to an article in this week's "B.J." re stereoscopic lantern projection, I might say that on November 4 I gave a demonstration before the Ipswich Scientific Society on this subject. The method I employed was as follows:—

I made two ordinary lantern slides, one for the right-hand and one for the left-hand picture. These were then placed in a solution of iodine in potass iodide to convert the silver image into silver iodide. After rinsing in soda sulphite solution they were washed and placed in a solution of dye until the iodide image was stained right through. One slide was dyed in a water solution of rosaniline acetate and the other in a water solution of aniline green. The slides were then washed in soda sulphite solution, which cleared the high-lights, and then fixed in hypo. After washing and drying they were bound together with a cover glass.

Although the dyes are not optically complementary, they gave most excellent results, and the fact that there was a thickness of glass between the two films did not appear to affect the result. For viewing glasses I fixed out some old plates and stained the films red and green with the same dyes employed for the slides. These plates were then cut up into convenient pieces.—Yours faithfully,

HARRY DE BEER,

Hon. Sec. Ipswich Scientific Society.

93, London Road, Ipswich.

### CARBON PRINTING ON IVORY BY SINGLE TRANSFER.

To the Editors.

Gentlemen,—Will you allow me to reassure those photographers who may be inclined to try the single-transfer ivory process described in the "B.J." of November 20, but who might be deterred from doing so by the editorial remarks introducing my article.

In my experience I cannot recall an instance of the image splitting as you suggest, and the adhesion of the carbon image to the surface on which it is developed, even when so "toothless" as polished glass (unless it has been previously waxed or talced), is so well known that any fear of spontaneous separation from the ivory seems to be quite groundless.

On the other hand, I have within the last few weeks known a photographer obliged to reject an ivory double transfer, made by a trade printer, on account of glistening patches, showing want of adhesion. Such patches might, of course, occur in any process if air spaces are negligently left when transferring, or with double transfer if the substratum is too hard or not thick enough.

I forward for your inspection a miniature of Mr. (now Sir) Henry Harben, which was painted over twenty years ago, and in which there is no sign of splitting away, although the surface is here and there a little chafed from having been kept in a drawer with other photographs.

I cannot help thinking that the Editor has been misinformed as to the likelihood of the image splitting off, and perhaps also as to the process being so much known as is suggested.—Yours obediently,

November 30, 1908.

W. E. DEBENHAM

[The print sent by our correspondent shows that in this case the picture, though coloured, has not peeled off. But by gently applying the point of a penknife to a corner of a deep shadow we find the film leaves the ivory readily, showing that there is little adhesion, as was suggested might be the case. With the double-transfer method, as described in the article, October 16, there is no such risk to be anticipated, as the carbon film is firmly cemented to the ivory by warm solution of gelatine. As we said, the single-transfer system was duly tried commercially in the early days of the process and abandoned, for the reason indicated by us. The fact that our correspondent has known of a print produced by the double-transfer method by a trade printer being returned by reason of faulty manipulation simply is merely an instance of the improper working of the process.—Eds. "B.J."]

## Answers to Correspondents.

- \*• All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.
- \*• Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.
- \*• Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & CO., 24, Wellington Street, Strand, London, W.C.
- \*• For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.

### PHOTOGRAPHS REGISTERED:—

- C. P. Cameron, 1, Eyre Place, Edinburgh. Photograph of View of New Buildings for the Edinburgh Life Assurance Company, George Street, Edinburgh.
- G. Barnard, 24, St. George's Road, Brighton. Three Photographs of the Rev. E. A. French.
- Ward's Studio, 46, Staines Road, Hounslow, Middlesex. Photograph of Building "Sentinel," and Photograph of Building, "Brigadier-General."
- H. Shaw, Marine Parade, Scarborough. Two Photographs of Miss Adelaide Pankhurst.
- E. Sweetland, 21, High Street, High Wycombe. Two Photographs of Mr. George Wright Arison, M.A. Photograph of the Rev. Wm. Adair Newman Hall. Photograph of the Rev. Ed. Donmett Shaw, M.A.
- W. F. Wilson, 28, Church Street, Saffron Walden. Photograph of the Very Rev. Chas. R. Chase.

Will Mr. D. Burlin kindly send us his present address?

ENLARGING LENS.—I am making some enlargements (23 x 17) from  $\frac{1}{2}$ -plate negatives, and shall be much obliged if you can answer me the following questions:—(1) Is an 8in. condenser large enough for  $\frac{1}{2}$ -plate negatives, as I find the corners considerably cut off? (2) How is it that I cannot get the image sharp all over? If I focus the centre the edges are not sharp, or vice-versâ. (3) Why does a small stop, f/22, cut off and not sharpen up the image? If I use a larger stop I find no difference to not using any stop. I might just mention that I am using a Ross lens (No. 1,284), of short focus, and an 8in. condenser, for which I have had to reduce the negatives to get the full picture, and the light is acetylene gas, four burners, 100 c.p. each, which give good, even illumination. The lens has no stops, so I have made them, and placed first in the hood and then between the lenses, but with no improvement.—H. W.

(1) Eight inches is barely large enough. You should have 8 $\frac{1}{2}$



Try placing the negative closer to the condenser if possible. (2) If negative lens and screen are in alignment, it is evident the lens does not cover the plate completely. It would appear necessary to use one of longer focus. (3) The trouble is due to the use of a lens of too short focus; it would be less marked with a small light, such as the arc. Use a 9in. or 10in. lens, working at  $f/8$ , and your difficulty will disappear.

**COPYRIGHT.**—(1) A very near relative of mine has recently died. I have a photograph taken by a local photographer three or four years ago. Can I legally copy it and supply my relations and friends, some of whom would like to pay for them? I may mention the photographs were paid for in the ordinary way. (2) Can the next-of-kin prevent the photographer from selling them, as no permission has been given?—P.O.P.

(1) Strictly speaking, the right to copy the photograph belonged to the deceased person, and therefore devolves upon his heirs, like other personal estate. Yet in the absence (probable) of registration we doubt if you or anyone else can be prevented from making copies. (2) The deceased, had he been alive, could have prevented the photographer selling copies without his consent, but whether his executors have the same right may be doubtful. Unless the deceased ordered or paid for the portraits being taken, the copyright is vested in the one who did. It would perhaps be better for the executors to register the copyright.

**REFLECTING POWERS.**—(1) What are the proportions of light transmitted and reflected by a 1-16th in. plate-glass reflector, placed at an angle of 45 degrees, behind a lens? (2) Does the thickness of the glass reflector and its distance from the lens affect the amount of light so passed and reflected? (3) Is there any risk of double reflection?—D. Y.

(1) Percentage of light transmitted, 85.5 per cent.; percentage of light reflected at 45 degrees, 14.5 per cent. (2) Neither the thickness of the glass nor its distance from the lens affects the amount of light passed or reflected. (3) Unless the glass is specially chosen not to give double reflection, it will give it. It can be avoided for average work by having a very thin sheet of glass of perfectly plane surface, but slightly wedge shaped, so as to make the two reflections from front and back surfaces coincide.

**OPALINES.**—Would you please let me know the kind of paper (opalines on glass) to use, P.O.P. glossy or bromides, how to prepare the print for putting on glass, and how to prepare the glass? I think it is with a kind of warm gelatine, and should be greatly obliged. After the print is dry on the glass, can it be fixed to strut back with glue —OPALINE.

The method is given in the "Almanac" just issued, page 821. A quite thin solution of gelatine is made, and print and glass immersed in it, removed together, and squeezed into contact with a flat rubber squeegee. Glossy P.O.P. is generally used for opalines, and in the case of some papers (those of not too hard a film) the gelatine solution is not necessary. But in this case the prints must not be allowed to dry before squeegeeing. In the case of bromide papers, either matt or glossy, the gelatine solution should preferably be used. The strutted back is applied, when the print is nearly or almost dry, with a strong mountant such as hot glue.

**FOCAL-PLANE SHUTTER, ETC.**—(1) With a  $\frac{1}{4}$ -plate focal-plane shutter, with spring at lowest tension, what width of slit would give approximately equal exposure to 1-15 and 1-45 of a second on a behind lens roller blind shutter? (2) In the three-colour carbon process, is there any reason why the colours follow yellow, blue, red?—TANCOLOUR.

(1) Impossible to say precisely, since the slit-aperture is necessarily adjusted to the tension, but the fifteenth of a second is obtained by an aperture the full width of the plate; that for one-fiftieth would thus be about one-third this width. These focal-plane exposures may be said, from the point of efficiency, to be equal to, say, 1-10 and 1-30 with a lens-shutter. (2) The yellow is put down first, as it is the least transparent colour; the red is applied last, as it is the colour which most usually calls for adjustment, and the effect can thus be provisionally tried on the two-colour (greenish) print before finally fixing the last tissue.

**AMIDOL STAINS ON CASHMERE.**—Could you inform me of anything that would remove amidol stains from cream cashmere blouse. It has been washed in the usual way without success.—AMIDOL. Amidol stains are very difficult to remove, and we fear we can-

not suggest any remedy. Your best course would be to send the stained material to the cleaners stating the nature of the stain.

**BROMIDE ENLARGEMENTS.**—(1) For adapting an ordinary projection lantern to bromide enlargement, long streaks appear on the paper as though the light, or rather the fibre of the mantle, is shown, but out of focus. The inverted gas-burner is an improvement, but only slightly. Would bolting silk be a cure, and where should I place it? (2) Also what medium to filter the light to develop by would you advise?—BROMIDE.

(1) It is often difficult to avoid these streaks, but a little adjustment of the light will generally do it with a new mantle. Probably your mantle is an old one in which the threads have become very thin by frequent use. We should try a new mantle in preference to bolting silk. The silk should be in front of the bromide paper, and from half-an-inch to four inches away from it. (2) Two thicknesses of new orange or canary medium will be safe with an ordinary flat-flame gas-burner or oil lamp. With incandescent gas or electric add a sheet of typewriting paper and one or more extra sheets of medium as appears to be necessary. Bromide paper is safe in quite a bright yellow light.

**PORTRAIT LENS.**—I have a portrait lens of the Petzval type, which, when focussed in the camera for distance, measures from plate to stops 7 in. and from plate to back lens 5 in. The diameter of back lens is  $1\frac{1}{8}$  in. The stop marked  $f/4$  is 1 5-16 in. diameter, and  $f/6$  is 1 31-32 in., and so on. (1) Which focus in this type of lens do you take into consideration? (2) Are the stops marked rightly? (3) Do the stops alter in relation to exposure, using it in enlarging as the light passes in the reverse way?—RAMSON.

(1 and 2) We cannot answer either of these questions definitely, because the measurements you give of the stop diameters are obviously wrong. The  $f/6$  stop must be smaller, not larger, than the  $f/4$  stop. You should measure focal length to a point near the stops, and also allow for the fact that the aperture is not the size of the stop, but that of the stop as seen magnified through the front lens. (3) The stops should actually vary when enlarging, practically in the same way as when making a photograph in the camera, but if using a small source of light, exposure need not vary in the same way. You may find that no stop above a certain size affects exposure at all. This is a matter that you must test for yourself. As a rule, the question does not arise, as the same stop can be used for all scales of enlargement.

**DIAMIDOPHENOL FOR BROMIDES.**—Having decided to adopt the diamidophenol developer for bromide work, should esteem it a favour if you would kindly favour me with the following information concerning the working of the same:—(1) Is it really amidol? (2) Is it necessary to rinse in water between developing and fixing? (3) Is it necessary to use an acid fixing-bath? If so, (4) What is the cheapest efficient acid fixing-bath to use? Please give formula. As this developer seems so little known, could you not write up an article dealing with it, or inform me where I can get detailed information concerning it?—H. T. W.

(1) For all practical purposes you can consider it to be the same thing as amidol. (2) With bromide paper you may as well rinse, as there is no necessity to load up the fixing-bath with developer carried over by the prints. Further, if fixing a number of prints in same dish a fresh print filled with developer may cause a stain on the others that it touches. With gaslight paper there is no time for rinsing, and an acid fixing-bath becomes almost necessary. (3) An acid fixing-bath is very desirable, though perhaps not absolutely necessary. It is a great preventative of stains. If, however, you intend to subsequently apply the bromol process to a bromide print it is safer to avoid acid baths and to use plain hypo. In all other cases we should recommend it. (4) The best acid fixer, in our opinion, is, hypo, 4 oz.; potash metabisulphite,  $\frac{1}{2}$  oz.; water, 20 oz. This is, however, not a cheap formula. Perhaps the following will suit you better; Hypo solution (1:5), 5 oz.; soda sulphite solution (1:4),  $\frac{3}{4}$  oz.; tartaric acid solution (1:2), 14 oz. See the "Almanac" for other acid fixers. If you use diamidophenol just as you would use amidol you will find no trouble. The information already published with regard to amidol applies just as fully to diamidophenol.

**STUDIO QUERY.**—Enclosed please find plans of a studio which I have taken. You will see from it that, while I have a good side light,

there is only a small fanlight in the top. There was a top light, the same length as the side light (1ft. 2in.), and right up to the ridge, but it has been taken out, and is on the premises, the roof being now slated with the exception of the fanlight mentioned. The landlord is agreeable to let me put it in again at my own expense. (1) Would it be necessary or advisable to have it put in? The glass is all coated thinly for diffusion, except the three clear panes shown, which I have covered with a linen blind. As the side light faces due south and there is no obstruction to the light, there being no buildings facing (2), would it be advisable to have, say, two large linen blinds (each to cover half), so that we could drop them at will, or please advise us for the best? I am using the "Gladiator" plate, and a lens working at  $f/6$  (Lancaster's £5 10s. Rectograph). (3) Will this give the best work? (4) What colour would you advise me to have the studio papered and painted? I have a large white linen reflector hanging in position 7. It is movable. (5) Will you advise me as to reflectors, and (6) would the angular reflector in Fig. 1 be better than the straight one mentioned and shown in Fig. 2?—W. D.

(1) You do not say the height of the side light, but we think it will be advisable to have some top light, say, half way up to the ridge. (2) Yes. (3) It will certainly produce good pictures, and though not as fast as an ordinary portrait lens, is quite fast enough. A light French grey will be suitable for that aspect. (4) and (5) As the reflector is movable, it can be placed in any position to suit the subject and the light.

**RIGHT TO BUILD.**—May I trespass upon your kindness to advise me on a rather important matter? I have recently taken a twenty-one years' lease of a house, with the intention of building a studio in the rear and carrying on the calling of a photographer, with the full permission of the freeholder, but now find that he is himself under certain restrictions with regard to his conveyance, which contains the following:—"No building shall be erected as a shop, workshop, warehouse, or factory; no trade or manufacture shall be carried on, and no operative machinery be fixed or placed on any lot." We have adjoining us two doctors, a dentist, a veterinary surgeon, and a school of music, all showing boards or brass plates, and we were advised that ours was also a profession, and that the clause in question did not apply. Still, we are very anxious, as the studio is just being completed, and the neighbours seem to be none too friendly disposed. There must have been many similar cases, and if you know of any precedent and what the ruling has been I should esteem it a great favour if you could furnish me with the information.—R. V. HARMAN.

This is a question that we should not like to pass a definite opinion on. It seems that no "building, workshop, etc.," is to be erected on the premises, and the question is, whether a photographic studio is to be considered as a workshop, and whether photography is a trade or not. So far as we can call to mind, it has not been decided in a court of law whether photography is a business or a profession. We think there is little doubt that it would be regarded as a trade.

**FREE PORTRAITS AGAIN.**—A firm solicited orders for free enlargements in this district, and on obtaining them said, of course, they, the receivers, would buy a frame for the wonderful pictures given. To this they agreed. Mouldings were brought for their inspection for the 20 by 16, prices varying from 12s. 6d. to a guinea. They selected the mouldings, but when the frames arrived they were not the ones ordered, the agent stating that they had not quite the same moulding in stock. I may say the frame shown to me could be bought anywhere for 3s. 6d. They had paid deposits varying from 7s. to 17s. 6d., and refused to pay any more. The firm sued them in the County Court, and unfortunately the defendants arrived at court late. The court awarded (on the non-appearance of the defendants) the plaintiffs 2s. per month until the various balances were paid. These people now wish to know what is the best to do in the matter, as they do not wish to lose any more money over the matter, and yet do not feel justified in paying any more to this generous firm.—MAGISTER.

As the people neglected to attend and defend the action, judgment, of course, was given against them, and we expect they will have to pay the sums ordered. They may, however, apply for a fresh hearing of the case, but it is a little doubtful if it will be granted. That seems the only course open to them now.

**BROMIDE.**—Honestly, we do not think it will pay you to manufacture. The only suggestion we can make is that you turn your attention towards the so-called "solar" process, the paper for which is sensitised, by brushing or floating. Formulae recommended for this process have appeared in our columns on several occasions—e.g., January 11, 1907, p. 27, and on March 30, 1906. These latter will be found in the "B.J. Almanac" for 1907, p. 816, and on page 821 of the same "Almanac" are some further formulae for the same process. If, however, you ask us to advise you the best source of information as to the home manufacture of an emulsion paper, we may refer you to "Photographic Papers," by Stiefel, obtainable, we believe, from Messrs. Iliffe, but you must not expect to get a paper equal to the commercial article.

**HYPHO-ELIMINATOR.**—Please give a formula for a cheap chemical which I can use for removing hypo from negatives required to be finished off in a hurry.—SHEPPERTON-ON-THAMES.

Wash the negative for one minute under the tap and transfer to a shallow dish containing water, with enough potash, permanganate in it to turn it pink. Remove the negative as soon as the colour goes, and keep on treating it in the very weak permanganate bath until the colour is not discharged. The negative can thus be made ready for drying within three minutes of coming out of the hypo.

**AEROGRAPH WORK.**—Can you please inform me of any book or article which will serve as an instructor in the use of the air-brush. I have had some experience in working up in black and white, but have not yet had any practice with the aerograph, which I see so often mentioned as essential to those seeking situations.—L. C. F.

A series of articles appeared in the "B.J." during January and February, 1907. They are reprinted by the Aerograph Co., 43, Holborn Viaduct, London, E.C., at a price of 6d.

**TITLES ON NEGATIVES.**—Please can you recommend me an easy method of putting titles on negatives, one that does not require the use of printed type as directed in the "Almanac," section "Negative Varnishes."—W. ESTERHAM.

Reversed rubber stamps for the purpose are sold by Richeford and Co., 8 and 9, Snow Hill, London, E.C.; also, a set of letters, to be attached to the negatives is supplied by O. Sichel and Co., 52, Bunhill Row, E.C., or the titles may be written on transparent tracing paper, retouching medium applied to the part of the negative where the title is to go and the latter laid on, pressed into contact, and a further application of medium given.

**BIRMINGHAM PHOTOGRAPHIC SOCIETY ANNUAL EXHIBITION.**—The Birmingham Exhibition will be held from February 22 to March 6, 1909. Entries close for abroad on January 25, which is also the last day for receiving pictures. For England, entries close February 12, and last day for receiving pictures is February 16. Foreign entries can be forwarded to the Leicester Exhibition (February 11 to 20) previous to showing in Birmingham, and at the close of the B.P.S. show all entries can be sent to the Shropshire Camera Club (March 3 and April 1), if desired. No charge for conveyance between these places will be made.

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## The British Journal of Photography.

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The Christmas Holidays.—Christmas Day falling on Friday in next week, our readers and advertisers are asked kindly to note that copy intended for insertion in our next issue should reach us not later than Monday or Tuesday morning, as announced in our advertisement pages. The Journal will be published in time for distribution before Christmas Day.

### SUMMARY.

A semi-imaginative account of what takes place when a sitter visits the photographer is given in the shape of a contribution on page 962, entitled "Studio Scenes."

A correspondent on page 975 raises the question, which we have reason to know is one of very frequent and considerable importance—namely, agreements between proprietor and manager as to the restriction of the latter from commencing business for himself within a certain area. The matter will arouse some discussion, and we shall be prepared to give a hearing to both sides.

The result of the recent sitting of the Berlin Conference on International Copyright has been semi-officially published in Germany, and, as predicted in our columns some weeks ago, special protection is to be granted to cinematographic works, whilst a better understanding with regard to photographic copyright should result in the case of the countries subscribing to the Berne Convention. (P. 959.)

The demonstration of methods and devices for the prevention of cinematograph fires was held on Thursday in last week at the Hippodrome, Leicester Square. (P. 967.)

Mr. Albert Smith's demonstration last week, at the Royal Society of Arts, of cinematography in natural colours showed the remarkable progress which has been made. It is anticipated that before very long animated photographs in natural colours will be available for public entertainment. (P. 960.)

Enlarging apparatus, a self-portrait lens cap, and an arrangement for obtaining negatives with stereoscopic relief figure among "Patent News." (P. 968.) We refer to the latter on page 958.

The second portion of the paper by Mr. Herbert E. Ives, describing his recent researches in the Lippmann process of colour photography, is given on page 955.

A point of interest to photo-micrographers is a recommendation made by Mr. J. I. Pigg as to the use of aniline dyes in preserving animal tissues. (P. 962.)

### EX CATHEDRA.

#### The Annual Index to the "B.J."

We shall present with the last issue of the present year, namely, December 25, the index to "The British Journal of Photography" for 1908. As in the case of indexes to recent volumes, it will be our endeavour to give a subject index which forms an easily comprehensible guide to the contents of the volume, yet does not run to an excessive length. We would ask our readers to note that we do not issue the index separately. It is presented with every copy of the "Journal" for December 25, and therefore those desirous of securing it are advised to make sure of obtaining this issue, which will be published immediately before the Christmas holidays.

\* \* \*

#### Photographic Copyright in France.

As we have on several occasions pointed out, the French copyright law relating to photographs appears to be based on decisions in the Courts to the effect that only photographs of artistic merit are entitled to protection. The judges decide whether a photograph is a work of art or not, and their decision can be taken to the highest Court of Appeal. Hence it is interesting to read in the current number of "Le Procédé" an extract from the "Gazette des Tribunaux" of a judgment of the Court of Appeal which once more confirms this species of legislation in regard to photographic copyright. It is affirmed that "the photograph which is differentiated from an ordinary portrait by the pose of the subject, the arrangement of the accessories, and the whole manner in which the photographer has sought to reproduce the features of his model constitutes an original work, and may be classed with works of art entitled to protection under the ante-photographic French copyright Act of 1793." It is also affirmed that "the photographer who creates such a work (or his representatives) has the sole right to prepare copies for sale (excepting as the model may protest against the reproductions), and this, irrespective of the conditions as to payment—that is, whether the prints made for the subject were supplied gratis, at the ordinary price, or at a reduced price. In reference to the case of a photo-engraver, F, who may have reproduced such a photographic portrait without the consent of the proprietor of the negative, assuming that F establishes the fact that the photographic print from which the plate has been made was supplied to him by Madame B, who at the same time ordered 600 copies for frontispieces in her biography, a charge of infringement against F would be none the less valid, but F does not bring any vestige of proof, and he cannot justify the authorisation which he claims to hold from Madame B." It would almost seem from the above judgment, which appears to be

quoted verbatim from the report of the judge's summing-up, that under no circumstances is copyright the property of the person paying for the portrait, but it would surprise us to learn that this referred to the circumstances in which a portrait is taken in the ordinary way of business. We imagine it to refer only to the case in which a seller or model is specially invited by the photographer to sit.

\* \* \*

### "Snap-shooting" and "Snap-shooting."

In a letter appearing in several daily papers Mr. Snowden Ward appears in the—to him—congenial rôle of champion of philological forlorn hopes. On this occasion it is "snap-shot" as an active verb which comes under his ban, on account of the ugliness of its derivatives—"snap-shooter," "snap-shooting," and "snap-shotted." Yet there are surely few who, on grounds of euphony, will resign these current words in favour of the suggested "snap-shoot" and "snap-shooting." While languages continue to be moulded by the people, and not by the purists and the pedants, we fear it is as futile to attempt the stifling of such words as it is to amend a word like "inflammable," or others philologically indefensible. And, after all, whether "snapshoot" or "snapshot," the crux of the matter is touched by another correspondent, who would have the "snap-shot" defined as "a hurried exposure made at short notice without time to adjust either speed of shutter or diaphragm of lens to speed of plate, light, or subject," and thus to be distinguished from, say, "hand-camera exposure," which term should be reserved for the properly conducted operation. Lexicographers, like Sir J. A. H. Murray, will perhaps make a note of this alleged distinction, in regard to which our contemporary, the "Globe," wittily remarks: "It is not so much the word that most people object to as the thing itself."

\* \* \*

### "Bromoil Demonstrations."

In the "Morning Post" Mr. Hector Maclean describes a recent demonstration of the Bromoil process before the members of the Cripplegate Society as the first demonstration of its manipulation, "at all events before any of the London photographic societies." We do not know how often the process has been dealt with under the title of "oil printing," but under its own name it has certainly been demonstrated at least four times in London—before the R.P.S., the South Suburban, the South London, and the North Middlesex Societies. In the provinces our pages only record three demonstrations, exclusive of the second Birmingham demonstration of December 8, but we have no doubt that numerous others have been given. It would, indeed, be strange, as Mr. Maclean suggests, if a process became so firmly established in one year without the aid of society demonstrations, but it seems to us even stranger that the R.P.S. and three of the most important London societies should have been able to put the subject in their programmes without Mr. Maclean's cognisance.

\* \* \*

### The Scottish Salon.

Details are not yet complete, but we understand the entries received exceed a thousand, and all the leading workers are represented; while not a few Scottish workers south of the Tweed, and in Ireland, have promised to send work to meet the scrutiny of the Board of Selection. The Salon Committee have left no stone unturned to interest local people in the approaching function, and last week one of the local papers appeared with a portrait of and interview with the Salon secretary, while the other paper in the burgh, not to be behind, came out with a portrait and interview with the

Federation secretary. The result of this judicious booming is that the Salon is already the one subject of conversation in Wishaw, and the representatives of the Press vie with one another in emphasising the importance of the visit of this national exhibition. Much is heard now of the oppressive results of the railway combine, but the Salon secretary has evidently got behind that, and a special train will be run from Wishaw to Glasgow, leaving at 10 p.m. and stopping at every station; this should result in a big attendance of Glasgow folks. The programme of entertainments is very complete and varied, and everything points to a successful Salon week. The work of the late Horsley Hinton will represent England—a graceful compliment, and what might be called an "In Memoriam" of his visit to this exhibition at Aberdeen last season. Dr. E. G. Boon, Alassio, Italy, is the other "foreigner," and he is sending a special one-man show, much of it being new work which is coming direct from Italy. An unusual compliment is paid to Reid o' Wishaw, the doyen of photographers of animals and birds, in the exhibition of a one-man show of his work, but in this case a prophet hath honour in his own country.

\* \* \*

### Some "Stereoscopic" Patents.

Some time ago we referred in these notes to Dr. Alfred Smees's system of binocular perspective, and to the way in which he applied it in photography by using a camera kept in continual lateral motion throughout exposure. Another method of producing very similar results now forms the subject of two different patents. In each patent two separate lens systems are used, and the final result is the superposition on the plate of two stereoscopically dissimilar images. So far as we can see from the descriptions, exactly similar results could be produced by superimposing the images forming the two halves of an ordinary stereoscopic negative. In other words, an "anaglyph" print, in monochrome instead of colour, should give all the effects of relief and solidity that the patentees claim are produced as the result of using their wonderful inventions. Each inventor very definitely claims that the results show relief when examined by ordinary binocular vision, but neither seems to have any idea of the absolute futility of the invention. In a picture made by Smees's method the relief is only apparent when both eyes are fixed on a particular point, the point of sight, and if a similar effect is to be obtained by superimposing a stereoscopic pair the most accurate registration of the two points of sight will be necessary. At the best the result obtainable is not worth anything, the so-called "relief" effect being very feeble and of such an elusive and momentary character that the great majority of observers will never be able to see it at all. In fact it cannot be seen unless one knows the scientific principles that govern the effect, and also understands the proper way of looking at the picture.

\* \* \*

### The Deterioration of Negatives.

A week or two ago we published a letter by "Observer" challenging our remarks in favour of varnishing negatives, and suggesting that unvarnished negatives fare best when splashes or condensation drops exist on the films. He sent us a specimen of a varnished negative that presented a very curious and interesting crystalline appearance, something like that produced by acids on polished tin. The pattern was impressed in the gelatine as well as in the varnish, and its cause was somewhat obscure. It may have been due to the crackling, in a damp atmosphere, of an imperfectly waterproof shellac varnish, while, on the other hand, it may have been caused by the crystallising of some saline solution. It is, however, not the only effect.



Our correspondent is, perhaps, unaware that the negative film contains large and healthy moulds that have found their way into the gelatine at some time or other. If these got in after varnishing then the varnish must have been very ineffective. If before varnishing them, the destruction of the varnish may have been due, at least in part, to the growth of moulds underneath. Evidently this negative never had a fair chance of proving its ability to resist damp.

### THE INTERNATIONAL CONFERENCE ON COPYRIGHT.

THE results of the Berlin Conference on the Articles of the Berne Convention have been semi-officially published in Germany. These confirm the forecast which was published in "The British Journal of Photography" immediately the Convention had finished its sittings, enabling those interested in them to examine more closely the various changes in the Articles. As was remarked at the time, these changes are not numerous, and none of them of sufficient importance to cause any sensation; yet what changes there are, are for the better, showing a decided advance, and, what is more comforting to the photographer, the determination to accord him more than ever his just rights in the control and profits accruing from his works. Let us give briefly the contents of the various Articles, in so far as they affect photographers and photographers.

Article 2 states clearly that protection is given to all "works of science, literature, and art." The word "art" embraces all productions or creations, no matter what mechanical process or means may be employed in the manufacturing and multiplying of the same. Under this head are mentioned drawings, paintings, engravings, lithographs, illustrations, sketches, and photographs. All copies produced from the original work enjoy the same right of protection as the original work itself, and it is distinctly forbidden to copy these, to adapt them in any way that may be calculated to interfere with the original copyright, or by arrangement or altering, such as composing, to tamper with any copyrighted work. All countries within the Union are bound over to respect these rights as far as the laws in force in the different countries permit of such protection.

The new reading of Article 4 is: The enjoyment and exercise of these rights is not associated with or bound by the necessity of complying with any forms whatever.

By this it would appear that a decided advance has been made upon the generosity of the new copyright law which came into force in Germany at the beginning of the present year, and was fully reported in the "B.J." at the time (see issue for April 10, 1908). In the German conditions it will be remembered that the only thing necessary to make a photograph copyright was to print on the photograph the name and address of the producer and the date of its production. Even this precaution will be no longer necessary when the new law comes into force in 1910. This is indeed good news for photographers, who from the above-mentioned date will have the absolute right and control of their own productions. It must, however, be distinctly understood that by their own productions is not meant or inferred such photographs as are taken by them on commission, or for which they are paid by any other party for taking. In such cases the copyright belongs to the party or parties giving such order or commission, or who pay the photographer for taking the original photograph, and they may forbid the photographer from duplicating it, exhibiting it, or in any other way using it or causing it to be used contrary to

their desires and wishes. Consequently, the numerous businesses which trade mostly in the copying of ordinary portraits—that is, portraits or other photographs taken to the order of the parties having them copied—will in no way be affected by the new law. Yet in their own interests it would be strongly advisable for them to have a guarantee in writing, and signed by the person ordering the copies to be made, to the effect that he had ordered and paid for the original photograph, and that therefore the copyright is his own property. This precaution would at least exonerate the photographer of all blame should complications afterwards arise and the right to make the copies be disputed.

As was recorded in our previous article on this subject, the branch of photography that received special attention at the Berlin Conference was in its application to the cinematograph. This is easily accounted for, since cinematography was practically unknown at the time of the Berne Convention, and was in such a primitive state of its development at the time of the last Paris Conference that the time was not then considered ripe to deal with it specially. Since there is no condition in any of the earlier articles regarding it, there has always been until now some doubt regarding its actual legal position in the reading of the copyright law. For instance, the cinematographer has had no scruples to take for his subjects scenes from popular novels, fashionable plays, and such-like; most likely without ever so much as suspecting that he was infringing the copyright of such novels or dramas. With these difficulties the Berlin Conference has dealt very fully. It has shown its appreciation of the enormous advance that the cinematograph has made during the last few years, and has devoted a whole Article to the subject. According to this Article, No. 14, it will in future be illegal to reproduce by the cinematograph scenes or actions from copyright works without the express permission of the holder of the copyright. The wording of the Article is: The holder of the copyright of any literary, scientific, or artistic work has the sole right of permitting the reproduction of such work or works by means of the cinematograph and its production in public. The same protection which is accorded to works of literature, science, and art applies also to original and independent cinematograph productions of all kinds, provided that the author of such productions has given to them, by the arrangement of his subject, or in some other way, the characteristics of an original personal work. This is perhaps a little vague, and is open to considerable doubt as to what is really meant. Therefore it is to be hoped that before the official text finally appears in English the wording of it will be at least more intelligible. Cinematograph productions from subjects in literature, science, or art, which subjects may be already copyrighted, but which productions are made by the permission of the original copyright holder, enjoy the same protection as original works. All the above conditions apply equally to all works produced by any other means similar to cinematography.

The inclusion of cinematography under the "Artistic Copyright Law" is assuredly the most natural and reasonable way out of the numerous difficulties and court cases to which we have frequently drawn attention in our columns, and settles finally those legal points out of which these difficulties have arisen. (See "B.J.," May 8, 1908, p. 355; also December 15, 1905, p. 998.) As hinted above, the reading of the phrase, "characteristics of an original personal work," is not as clear as it might have been, and is suggestive of loopholes and legal quibblings. This seems to leave it entirely for the judge in any case which may arise to define what constitutes "an original personal work."

## CINEMATOGRAPHY IN NATURAL COLOURS AT THE ROYAL SOCIETY OF ARTS.

THE large lecture theatre of the Royal Society of Arts in the Adelphi was crowded to the walls on Wednesday in last week, December 9, when Mr. G. Albert Smith lectured upon and demonstrated the process of two-colour cinematograph projection, which has been worked out by him, and has been alluded to in past issues of this journal. Since last December, when we wrote ("B.J." "Colour Photography" Supplement, December 6, 1907) as the result of a visit to Mr. Smith's laboratory, the process has passed from the experimental to the commercial stage, and those who, like ourselves, have seen the first results obtained by the inventor will agree that we were warranted in predicting, a year ago, the perfection of the process to a degree at which it becomes of every-day service for instruction and entertainment.

We have just described Mr. Smith's process as "two-colour," but it must be borne in mind that the phrase applies only to the method adopted—namely, the use of two taking and two projection filters; in other words, to the making of the colour record positives in pairs instead of in sets of three, as in the customary three-colour process. As the audience at the Royal Society of Arts saw for themselves, the two-colour method proved itself capable of giving a range of colours equal to that of a three-colour process, as was seen from a comparison of Autochrome records of posed subjects and the cinematograph version of the same figures in motion. And the best of the pictures shown on the screen, particularly some of a harvesting scene, of a yacht race, and of a girl playing with pet rabbits, showed the fine rendering of colours, and especially of neutral greys, etc., which the two filters of Mr. Smith gave. Not only this. A series of three-filter is found by Mr. Smith to make too great demands on human persistence of vision, when, as in the Smith system, the separate positive colour-records are projected in rapid succession on the screen and combined in the eye of the observer. This system, the lecturer pointed out, was the one which had been found practicable after a trial of methods involving registration of three pictures. The conclusion to be drawn from the part of Mr. Smith's paper, which we reprint below, dealing with the alternative methods in natural-colour cinematography, is that a two-record process appears to be the only practicable solution of the problem, and such certainly appears to be the case, excepting that a "screen-plate" colour film, if obtainable of sufficient rapidity, would equally well respond to the commercial conditions under which natural-colour cinematography has to be done. With these comments upon the most convincing and beautiful demonstration of the success obtained by Mr. Albert Smith, we will quote, with some abridgement, the more technical portion of the paper, the full text of which is published in the "Journal of the Royal Society of Arts" for December 11, 1903:—

The three-colour principle having been proved by numerous lines of demonstration to be a sound working theory, it would naturally suggest itself as being applicable to animated pictures; and, judging by the records of the Patent Office, there are plenty of people who have thought so. But it is to be feared that in the rush to the Patent Office the details of experiment and trial have generally been overlooked.

Some years back (1902), I was invited by Mr. Charles Urban to assist in a thorough trial which he was making, regardless of reasonable expense, of a three-colour process applied to the cinematograph. At that date very little was known about the possibilities of sensitising film to red and green, and, to that extent, we were handicapped, although we had very expert assistance. Nevertheless, in good sunlight we did succeed in taking a few negatives in which the three colours were duly recorded.

It was when we came to superimpose the pictures on the sheet through three coloured glasses that we found the process unworkable. As soon as the handle of the projecting machine was worked the three pictures refused to remain in register, and no knowledge that any of us could bring to bear upon the matter could even begin to cure the trouble. I do not know whether any other workers, if there are any, succeeded where we failed; but, if they did succeed, the public have never, so far as I am aware, been permitted to see the results. The difficulty is mainly due to the fact that cinematograph pictures are small to begin with (about the size of a postage stamp), and they have to be enormously magnified in exhibiting, as you all know. The slightest defect in registration is pitilessly magnified, and when the minute defects of registration in the first three pictures are followed by minute defects of another sort in the next three, and by yet another sort in the succeeding three, and so on throughout the length of a film, the effect on the observer is almost unbearable.

### Three-lens Systems.

A plan much recommended, and much patented, I believe, is to use three lenses in taking the negatives, with a colour filter behind each, and to use a similar contrivance with three lenses and colour filters when projecting, adopting one of the usual contrivances to superimpose the images issuing from the three lenses. Whether the persons who advocate and patent this plan ever descend to the trivial detail of trying it is unknown, but when Mr. Urban and I tried it with carefully made machinery, the results were astonishing and painful to behold. It becomes evident on trial that the three pictures taken through the three lenses, however close the proximity of the latter may be, are slightly different from each other, and the attempt to superimpose these slightly different pictures when they are highly magnified, results in unbearable confusion.

### Three-colour Pictures.

The next idea we worked upon was to abandon the attempt at mechanical registration of the three pictures, and to run the films through the projecting machine at such a speed that the colours on the revolving shutter would combine, and so give the desired effect by persistence of vision. This was successful, but the colours were washy and ineffective. In fact, the colours were so pale that, considering the amount of film used up (three times the usual number of feet per subject), and considering that the problem of exposure was made three times as difficult, the experiment assumed a less hopeful aspect. The death of the original patentee put a further damper on the inquiry, and the experiment finally dropped.

### The Commercial Condition.

During the last four years, with the support of Mr. Charles Urban, I have renewed the inquiry, to the exclusion of almost all other work. I have concentrated attention specially upon four points:—1. Sensitising the film to all colour waves, specially pressing the sensitiveness as far into the red end of the spectrum as possible. 2. Superimposing the colour records by persistence of vision. 3. Compressing the colour records into a less number than three, so as to give the least possible interval of time between successive presentations. 4. To conform to the condition that any scheme must be easily applicable to the existing cinematograph machinery, and that the standard film with standard perforations must be used, so that any successful results might be readily adopted by every cinematograph user without much trouble or expense.

The first of these lines of inquiry (sensitising) has been already referred to; it simply consisted of repeated trials and experi-



ments day by day for a year or more until the required conditions for sensitising emulsions for cinematograph work were better understood. The third line of inquiry, that of reducing the number of pictures in which the colour waves could be recorded in a monochromatic scale from three records to two, also resolved itself into a matter of repeated trial. For, in addition to deciding upon the particular shades of grey deposit which should be adopted as the equivalent of particular colours, the variations of different emulsions in yielding these greys had to be taken into account. The final deduction from the experiments under the third heading was that, proceeding from the red end of the spectrum, all rays from dark red to blue could be recorded in proportions which our eyes accept as sufficiently truthful through two filters only.

If we ask individuals to set down the principal colours of nature, placing them in order of luminosity or brightness to the eye, the average of the lists will be as follows:—White, yellow, orange, red, green, blue, violet, indigo, black.

Now, reference has previously been made to the unfortunate fact, that photographic plates or emulsions do not see as we do; thus, to the plate, blue and violet come at the top of the scale next to white, and not at the bottom end, as they do in the luminosity scale. I find that it is possible with two carefully adjusted filters to pass to the sensitised plate or film colours in proportions parallel to the above order. Through one filter I pass white and yellow, then on through orange and scarlet to the darkest red I can sensitise for. Through the other filter I pass white and yellow again, as these two are at the head in luminosity and require fullest representation; then on through green, blue-green, blue and violet in the proportions suggested by the above luminosity list. The aim is to secure, by a careful adaptation of filters to emulsion, a record of colour luminosity stated in gradations of tone from white to black through a scale of greys, this scale being fully represented in two successive pictures.

I take the pictures with an Urban bioscope camera fitted with the required filters to come into action alternately. One film only is used, of the usual standard size, and I take the pictures at the rate of not less than 16 per second through each filter, or 32 pictures per second in all.

When the negative record has been duly developed, and a positive transparency made from it, this positive transparency represents, by its gradations of tone from white to black in each successive pair of pictures, not only a record in form and shape, but it also acts as a filter or sifter of light; for when it is passed in the path of rays of coloured light it will screen or filter them so as to reconstruct for our eyes the various proportions of colour luminosity which were present in the scene when the record was made.

#### Taking and Projecting Filters.

I have said that the photographic record now obtained is to be placed in the path of colour rays, which rays are to be sifted by the travelling record so that the required amounts of colour reach the projection sheet in due proportion. The question now is, What rays of colour are we to use? Apparently, we must use the same colours that we used as filters in the camera, and, in fact, we may do so with pleasing results. But theoretical critics will point out that, owing to the unfortunate over-sensitiveness of the film to violet and blue, we must, of necessity, have cut these colours down to such an extent in our camera that if we use the same filters for reconstructing colour for the human eye, their absence will be sorely missed—our whites will be so deficient in blue and violet, that they will not be white at all, but orange or yellow.

One reply to this contention is, that white is very largely a comparative sensation. What we agree to call white in a painting, for instance, is often quite different from what we agree to call white in another painting if we take steps to compare the two "whites" with one another. One may be yellowish or

greyish compared with the other, yet both are white enough in their proper place in the picture, when surrounded with colours in proper "key," as it were, to them. Again, the whitest of paper will look yellow when compared with the purer white of fresh fallen snow. Therefore, our whites produced by the mixture of coloured lights may possibly be somewhat yellow as a matter of spectroscopic reality, but if the human eye accepts them as white by comparison with other colours in the same picture, we need scarcely bother our heads further.

But another way of meeting the critical objection that the analytical filters of our camera are necessarily too deficient in violet and blue to give a proper rendering of colour when used as synthetical or reproduction filters in projection is to introduce the missing beams of violet and blue into our projection instrument, and so make ourselves practically secure of the white, or "all-colour light," required on theoretical grounds. This I find it an advantage to do; and if you examine the light emanating from the projecting machine when lighted up and at work, you will see that beams of red and green are alternately issuing from the lens, and that these beams have added to them by means of a supplementary shutter just those proportions of violet and blue required to make a pure white when all are mixed. Thus we have light on the sheet for our whitest objects which contains, as it should contain to conform to theory, every colour of the spectrum from dark red to violet.

There are some persons so obsessed with the idea that three is the magic number for filters, that they imagine a system in which two only are employed must necessarily restrict the colours recorded and produced to two. There is, in fact, a good deal of confusion on the subject of colour mixture, and there are not a few who argue as though mixing coloured lights and mixing coloured pigments were the same thing. No mixing together of two or more pigments will ever make white; but the white light can be produced by the mixture of two correctly chosen coloured lights. The printer who has to make colour prints on paper certainly has to divide the spectrum into three, or even four, but he is dealing with printer's ink or paint, not with light at all. Every writer on the phenomena of light, including Tyndall and Sir Henry Trueman Wood, teaches that white light can be made by the proper mixing of two well-chosen coloured lights; and it is further taught by every authority that white light contains all colours. I hope, however, to demonstrate that by dividing the spectrum into two it is possible to exhibit satisfactorily every colour to the eye, including the purest white.

The practical method sketched above is possibly open to assault on strictly theoretical grounds—although it must not be forgotten that theories have sometimes to be re-examined in the light of facts. The first consideration, to my mind, is the production of results. I am not striving to defend a theory; nor do I deem it necessary to keep within the limits of a theory.

I have no doubt whatever that many improvements are in store. Lens makers, emulsion makers, mechanics, will each contribute to the advance. I expect to make important improvements myself when spring comes and I renew my experiments. The present results are presented as early experiments in the photography of moving things in colour, and as the first serious exposition of work done in that direction. It is to be hoped that the numerous others who, we are led to believe, are working in the same direction will be encouraged to put their theories to the test and come forward with their results.

G. ALBERT SMITH.

ROYAL PHOTOGRAPHIC SOCIETY.—As we go to press some information reaches us in the shape of a document relating to the internal affairs of the Royal Photographic Society. We would like to have found space for its insertion in the present issue, but are compelled to hold it over until next week, when it will come before Fellows and members of the society in time for them to give it their consideration during the Christmas holidays.

## ANILINE DYES AS A PRESERVATIVE FOR ANIMAL TISSUE.

WHEN a series of photographs of a dissection of fresh animal tissue has to be made, great difficulty is often experienced in securing the necessary photographs before decomposition has commenced.

In many cases the specimens can be placed in a preservative solution, such as formalin or bichromate of potash, but these preservatives have a hardening effect on the tissues, which renders subsequent dissection much more difficult. Practically, all the preservative agents in general use have a tendency to harden animal or vegetable tissues.

When the specimens are intended for section cutting in microscopic examination, this hardening effect is a great advantage; but, in dissecting, the hardened tissues are often extremely difficult to separate.

On account of the trouble involved in disintegrating preserved tissues, the advice is frequently given in text books that fresh specimens should be used for dissecting delicate structures.

This advice is easily followed when the operations can all be completed within the course of a day or so, but when the work is prolonged for several days, some method of preserving the material must be adopted.

When a series of photographs are required of the dissection, considerable time has to be spent in obtaining satisfactory negatives, especially when a magnification of eight or ten diameters is required, as the negatives have to be taken by reflected light.

When fresh specimens are easily obtainable, there is, as a rule, no great difficulty experienced, as a fresh dissection can be made when necessary; but when rare objects are being studied,

it is practically impossible to finish a prolonged course of scalpel and camera work before the specimen is spoilt by the combined effort of bacteria and paramacia.

By accident, the writer found that animal and vegetable tissues stained in aniline dyes will undergo little alteration for a week or more. A partially dissected Rana Larva had been stained for photographic purposes, and was left in tap water for several days.

These animals, owing to the nature of their habitat and diet, rapidly decompose after death, but this stained specimen had remained unaltered, and no animalculæ were visible. The tissues were apparently in the same condition as when they were first placed in the water, and dissection was carried on as easily as with a fresh specimen.

The presence of the dye does not render the subsequent dissection more difficult; if anything, it is easier, as the staining generally brings out the various organs more clearly. A further experiment was made with a goat moth caterpillar, which, being a somewhat rare grub, would, in the ordinary way, have been preserved in Müller's fluid. This remained in perfect condition for two weeks, by which time the necessary photograph had been taken.

Experiments have shown that a fairly strong solution of analine dye is immediately fatal to the flagellata and paramacia, which are the most energetic agents of decomposition; the dye preserves the tissues by obviating the existence of these protozoa, and does not affect the substance itself.

J. I. PIGG.

## STUDIO SCENES.

### UPPER GRADE.

*The interior of a reception room in a West-end photographic establishment. A young lady discovered occupied in her duties. The swing doors are opened by a man in livery. Enter a lady, corpulent and past her prime. The young lady "receptionist" steps forward and "receives" her after the manner of her kind. This done to the satisfaction of both, she opens the door of a cabinet and turns over a few mounted photographs of ladies somewhat of the condition and estate of the visitor.*

LADY VISITOR: "Oh! these are quite charming; but they are all elderly ladies, aren't they? May I see?" (She rolls her chair towards the cabinet and begins to turn over the specimens.) "Now, this is better" (holding up a likeness of a young slim and very beautiful girl). "Now, that's how I should like to be taken. I think that's perfectly lovely. Don't you think so?"

RECEPTIONIST: "Yes, she's very lovely. She's the Hon. Miss (mentioning the name of a debutante famous for her youth and beauty). "Of course, we could take you like that, in that position, and with the same background; but don't you think this would be perhaps a better guide?" (Takes up a photograph of a lady of about 35, handsome and of fine proportions.)

LADY VISITOR (drawing in polite consideration): "Y-es; but isn't it just a little old?" (Reverts to the first example). "This, you know, takes my fancy. Please make me like that. I'm sure my husband will be so charmed if I come out like that."

RECEPTIONIST: "We'll do our best, madam, of course. When would you like to come?" (They arrange an appointment. The Lady Visitor then turns to examine the photographs that decorate the reception room.)

LADY VISITOR: "I can't think why you do these with the black faces" (pointing to a head in a broad deep tone with a light background).

RECEPTIONIST (much astonished): "Black? Oh, that isn't black, it's simply taken in a slight shade with a light background. It's very much admired by some people."

LADY VISITOR: "That may be; but it's black, now, isn't it? And people's faces are not black, they're bright. I think the background ought to be dark and the face ought to stand out nice and bright. That's how one would expect a photograph to come out, isn't it?" (She singles out other errors in art with her lorgnette as she makes a tour of the room, delivering enlightening dissertations upon each. The Receptionist humours her in monosyllables. Upon reaching the folding doors the man in livery opens them. Exit the Lady Visitor with a smiling motherly nod to Receptionist.)

RECEPTIONIST: "Vain old pig!"

In a few moments a gentleman is shown in. He is tall and rather awkwardly big. The Receptionist, who expects him, conducts him into an inner chamber, where he finds all the paraphernalia of photography. Greetings pass between him and the operator.

GENTLEMAN VISITOR: "Now, you know, my idea is that all this posing and arranging is a gigantic mistake. What? People don't look like that in real life. Now, I want to look natural. I don't care to have it done at all if I'm to be stuck up with a book and all that sort of thing. You know what I mean. What?"

OPERATOR: "I think we shall be able to manage without anything undesirably conventional. Suppose we try this chair" (Wheels an easy chair in front of the camera.)



GENTLEMAN VISITOR: "Now, this is my idea." (*He drops into the chair, crosses his legs and remains full face to the camera.*) Now, that's characteristic! That's natural! Won't that do?"

OPERATOR: "Well, I'm rather afraid that if I took you like that you would be justified in demanding another sitting."

GENTLEMAN VISITOR: "Why?"

OPERATOR: "Because your face would not seem to get the importance due to it in the pictorial scheme, whereas your boot-sole would have the lion's share of interest."

GENTLEMAN VISITOR: "Ah! I suppose that is so. I confess I never thought of that. Well, I'll put my feet on the floor. There!" (*He now adopts the pose of an Egyptian statue in the British Museum.*)

OPERATOR: "If you don't mind I think we might dispense with the chair altogether. Except for little people, chairs are rather a nuisance. May I try a standing pose?"

GENTLEMAN VISITOR: "Well, if you like; only, how long is it going to take?"

OPERATOR: "Oh! about a quarter of a second." (*The Gentleman Visitor squares up to the camera, his legs rather straddled and his hands in his trousers pockets.*) "I think a three-quarter view would be really fine. Would you mind just going as though you were walking away and then just look back a little?"

GENTLEMAN VISITOR: "Hang it, man, I never look back, and I don't look at people in three-quarters, as you call it! I like to look people straight in the face. What's the objection to taking me as I am?"

OPERATOR: "None whatever, only I fancy you will think it a little stiff when you see the proof."

GENTLEMAN VISITOR: "Well, what if it is? What?"

OPERATOR: "Very well, I'll make an exposure as you are, if you'll allow me to take one as I should like it."

GENTLEMAN VISITOR: "That's fair enough. Go ahead, then." (*Operator goes ahead.*)

GENTLEMAN VISITOR: "Is it done? Good! My word, how quickly you fellows earn your money!"

(*He patiently submits while the operator makes three or four exposures more upon his client's most becoming phases*)

GENTLEMAN VISITOR: "I suppose you know you've got four to my one. However, I know the one of the lot that will please me"

OPERATOR (*smilingly*): "Don't let us discuss that until we see the proofs."

Gentleman Visitor shortly takes his departure, saying, as he goes out: "Well, you mustn't be surprised if I throw all yours back on your hands and select my own. Good day."

CURTAIN.

#### LOWER GRADE.

*Scene the First: A shop window in the neighbourhood of Bermondsey. Upon the fascia is emblazoned the legend "Electric Studios." The usual easels bearing oil-painted enlargements, and a spotty display of prints, adorn the window. A large ticket announces that three cabinet photographs may be had for the sum of two shillings. A young man attired in the height of lower middle-class fashion gazes at the placard deep in thought. He wears a double collar and a striped necktie fastened with a gilt safety-pin. His brown boots are of a tint leaning towards a chrome yellow.*

YOUNG MAN: "By Jove, that's not dear. She'd be better pleased with three of them than with the midgets. Bless if I don't go in and have 'em done." (*He looks into a narrow advertisement mirror upon the jamb of the adjoining shop to assure himself that his appearance is all that could be wished; adjusts his handkerchief so that a small white triangle peeps out of his breast pocket, and then, with a little cough, enters.*)

*Scene the Second: Interior of the same. A curtain obscures the back portion of the premises. The young man enters to the*

*clanging of a bell attached to the top of the door. At this signal the curtains are divided, and the Proprietor appears.*

PROPRIETOR: "Good afternoon, sir."

YOUNG MAN: "Good afternoon. Er—I see you do three cabinets for two shillings."

PROPRIETOR: "Quite right, sir. Can I have the pleasure of doing three for you? Or we can do you a dozen for six shillings."

YOUNG MAN: "I think three'll be enough, thanks."

PROPRIETOR: "Very good, sir. Will you kindly step this way, sir?" (*He holds back the curtain so that the young man may pass through to the studio, a back shop with a skylight. The walls are distempered a grey colour. A property stile stands in one corner, a balustrade of the same description in another, and a canvas representing a cottage window, with a shelf attached in lieu of a window-sill, leans against a wall*)

YOUNG MAN (*with a little cough*): "I don't go in for these luxuries myself. Don't consider myself good-looking enough; but I'm just doing it now to oblige a friend."

PROPRIETOR: "Quite so, sir. Will you take your hat off? Perhaps you'd like a comb and brush. You'll find one behind that screen." (*The young man removes his hat and surveys his hair in a glass; finds it quite satisfactorily plastered down, readjusts his peeping pocket handkerchief and announces himself "fit." The Proprietor places him in a chair and directs his gaze to a point upon an adjacent wall, then ducks beneath the camera cloth. Having next retired into a cupboard and duly reappeared with a dark-slide, which is placed in position, he stands with the bulb in his hand, and gives the warning.*)

YOUNG MAN: "Hold on a minute. How'd it be if I had that button-hole? (*Pointing to a wired rose in a specimen glass that adorns a little three-legged table in faded black and gold.*)

PROPRIETOR (*always anxious to oblige*): "Certainly, sir."

*Hands the flower to the sitter, provides a pin, and assists at the decoration. The Young Man now expands his chest, elevates his chin, and tells himself that he will look "O. K. in the photos." The ceremony is then completed.*

YOUNG MAN (*in a louder voice to the Proprietor, who has again retired to the cupboard*): "Let's see, you send a proof or something, don't you?"

PROPRIETOR (*from the hidden depths of the cupboard*): "No, sir, I'm sorry we can't send a proof for three. If you care to take a dozen we'll send you one by post."

YOUNG MAN: "Dozen be blowed."

PROPRIETOR (*emerging*): "They'll be ready on Saturday, if you'll look in then."

YOUNG MAN: "Righto!" (*He proffers a "Woodbine," adieux are exchanged, and the Young Man exits very pleased with things generally.*)

*Scene the Third: The same, a week later. Enter the Young Man through the bell-clanging door, as before. Enter also the Proprietor from between the curtains, as before.*

PROPRIETOR: "Good afternoon, sir; I'm just finishing off your prints." (*Disappears.*)

YOUNG MAN: "Glad to hear it."

*Proprietor emerges with a mounted print, which he submits with a satisfied air, and watches his customer's face. The Young Man remains calm, but is evidently under the impression that he is more of an Adonis than the photograph represents him to be.*

YOUNG MAN: "H'mm. Well, I can't exactly say I'm pleased with it."

PROPRIETOR: "Indeed, sir! What's the matter with it?"

YOUNG MAN: "Well, I don't believe I look like that. Did I stick my face up like that? If I did you ought to have told me of it. I look a silly fool. Besides, look at my moustache! It don't stick out away from my face like that, does it?"

PROPRIETOR: "O yes, that's all right, sir. You see you aren't used to seeing yourself at that angle. You only know yourself full-face, like you see yourself in the glass."

YOUNG MAN (*after an awkward pause*): "Well! You'll excuse me, but I think it's rotten."

PROPRIETOR: "I'm sorry you think that, sir. Myself, I think it's very good. Just wait till you've shown it to your friends before you make up your mind that it's not good, and then if you're not satisfied I'll do you three more at half-price."

YOUNG MAN (*mollified*): "All right! Let's have 'em. I've got to catch a train."

PROPRIETOR: "I shan't be a moment just touching up the others." (*He disappears.*)

YOUNG MAN (*raising his voice*): "They don't want any touching up. You can't do 'em any good if you touch 'em up for a week."

PROPRIETOR (*within*): "I can't let any prints go out untouched."

YOUNG MAN: "What's it matter? Nobody 'll see 'em. I'm going to tear 'em up."

PROPRIETOR: "You can do what you like. It's against our rules to let anything go out that's not been retouched."

YOUNG MAN: "What rot! What's the good of keeping me waiting here while you're tinkering with 'em? Don't I tell you

I've got to be off to catch a train? You can't do 'em any good. They're wasters."

PROPRIETOR (*returning with the three prints, which he places in a neat envelope, and hands to the Young Man*): "You'll find they'll give satisfaction sir, you take my word for it."

Young Man throws down a florin and exits without adieu and without offering a "Woodbine," but muttering: "Fool and his money soon parted."

Scene the Fourth: Front parlour of Miss Lovelite at Balham. Miss Lovelite and the Young Man discovered sitting on a hard and shiny sofa bedecked with crochet antimacassars.

MISS LOVELITE: "Well, let's have a look at 'em, anyhow. P'raps I shall like 'em."

YOUNG MAN (*producing the envelope*): "I don't think!"

MISS LOVELITE (*gazing, a smile rapidly overspreading her features*): "My boy, you never looked half as nice as that in all your natural. They flatter you. That's all the matter with them. I must go and show 'em to Ma." (*Exit, leaving Young Man a prey to mixed emotions.*) [CURTAIN.] F. C. T.

## THE KAISER AND PHOTOGRAPHY.

JUST now, while there is so much talk about the Kaiser's political opinions, it may be interesting to photographers to know his opinions regarding their profession. It is a well-known fact that he is one of the most frequently photographed crowned heads in Europe. It is estimated that he is photographed at least two or three times every week, and if one may judge by the popularity of the numerous postcards of him which are on sale throughout the whole Empire, this statement would seem to be more than verified. One sees him in an endless variety of poses and guises. In one he is seen quietly walking, accompanied by the Kaiserin, or other member of the Royal family, in the Tier Garten, Berlin; in another, we see him mounted on his war horse directing a miniature battle; in another, he is on the bridge of a battleship giving orders to the crew; or it may be that we see him careering after the hounds at a fox-hunt. His public and private, naval and military life is all fully recorded in all its details by the camera, and the pictures are so familiar to us that one cannot pick up a newspaper or magazine without seeing the representation of some new phase. Unlike King Edward, the Kaiser has no objection to the snapshotter. On the contrary, the latter is encouraged so much that he is usually in attendance wherever the Kaiser is. King Edward's dislike to the camera has become proverbial. On one occasion the present writer had some experience of this. He was present at a Royal function, and, after going through the customary formalities in order to obtain permission to use his camera, was rewarded by a reproving glance from Majesty, who was evidently startled by the click of the shutter. With this tell-tale click the Kaiser has become so accustomed that he pays little heed to it. He is even accustomed to the less familiar whirr of the cinematograph, and his great interest in this is shown by the fact that he often whiles away evenings in his family circle or entertains his guests with a presentation of moving pictures of his various travels. Recognising its educational value, he has presented various sets of cinematograph apparatus to scientific institutes, and recently a public school was the recipient of this distinction.

Coming to more legitimate photography—that is to say, those occasions on which the Kaiser poses intentionally in front of the camera, he is noted as an ideal sitter who, while he has his own ideas, gives the operator little or no difficulty.

Naturally, a command to photograph his Majesty is considered the highest honour that can fall to the lot of a photographer, and is the cause of no little bustle and excitement; yet the Royal sitter is so accustomed to posing to painters and photographers that he knows instinctively what is expected of him. The only thing is that he is somewhat impatient; the operation must be performed as quickly as possible, therefore the room must be arranged beforehand, the camera focussed, and everything in readiness when his Majesty comes. Few words are exchanged during the interview, for the Kaiser has usually studied the subject before coming to face the camera, and assumes such pose as he considers in keeping with the costume he wears, or character he represents. He is not, however, above taking a hint, or even soliciting the operator's opinion, and readily falls in with any suggestions offered by the latter. When he has time and is in the humour, he will even stop to ask a few questions regarding the recent progress of photography, and on such occasions the informant must be in a position to give precise and ready answers, for the Kaiser is no novice in the art, having on various occasions given proof of a knowledge of the subject. These calls on the various Court photographers to photograph his Majesty are not nearly so frequent as are the activities of the ubiquitous snapshotter. Yet when we say that the Kaiser has in his wardrobe something like over two hundred different uniforms of the various home and foreign regiments and navies of which he is the chief or honorary chief, to which he is every now and then adding a new one, in all of which he is photographed from time to time, the reader may be able to form some idea of the frequency of the visits of the photographer to the Palace. Added to these are the various sporting and private portraits which are taken at frequent intervals. On very rare occasions has the Kaiser visited the studio of the photographer. Usually the Royal commands are executed in one or other of the various palaces, in which a room is set apart for the occasion, and the operator has to make shift as best he can with the lighting and other necessary arrangements.

There are in albums in the palace libraries photographs which the Kaiser has himself taken with the camera during his younger days. But of late he has seldom or never done any practical work in photography. This is not so much through lack of interest as through lack of time to prosecute



it thoroughly. For the most part he prefers to leave photography to the Kaiserin, who, like Queen Alexandra, is an adept with the hand-camera, and some years ago permitted to be published a series of photographs of the Royal children engaged in their various games and pastimes: a collection which did

her much credit. The Princes and the young Princess are all of them enthusiastic photographers, and when they accompany their Royal father at home or abroad are nearly always to be seen with a hand-camera slung over their shoulders.

## AN EXPERIMENTAL STUDY OF THE LIPPMANN COLOUR PHOTOGRAPH.

### II.

It appears, therefore, that the standing waves are actually formed to a greater depth than has been supposed. To verify this several experiments were performed. A thick film was exposed as usual, then, before development, wetted and a piece stripped from the glass and so developed from both sides. A section showed the laminae to be formed equally well at both developed surfaces. This is shown in Fig. 8, where 150 distinct laminae may be counted. Another experiment consisted in flowing a plate with a thick solution of celluloid varnish, through which, after drying, the exposure was made as usual. On stripping the varnish coating from the gelatine, developing and sectioning, laminae were found all through the film. They are, therefore, formed, with monochromatic light, under the conditions of this work, to a much greater depth than the thickest film used.

It follows from these observations that the small effective number of laminae (about 20 or 30 at the most) is due, not to few being

of film developed with hydroquinone, and should be compared with Fig. 6. Unfortunately, as it seemed at first, the deposit with these developers is black and opaque, making the reflected colour dull in the extreme, and the absorption so great that only few of the laminae are effective. To obviate this difficulty the expedient was adopted of bleaching the film with mercuric chloride. This has been done previously by Neuhauss, and results in a white, very transparent film. The reflecting power of the bleached deposit is not great, so that the luminosity is lost with pyro-developed plates. With plates developed by the three above-mentioned developers this loss of reflecting power is more than compensated for by the greater number of effective laminae. So transparent is the deposit that the absorption is negligible, and all the laminae act with practically equal strength. Consequently, instead of the reflected light being a somewhat diffuse band in the spectroscope it is a narrow

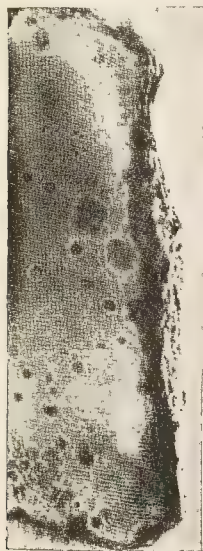


Fig. 8.

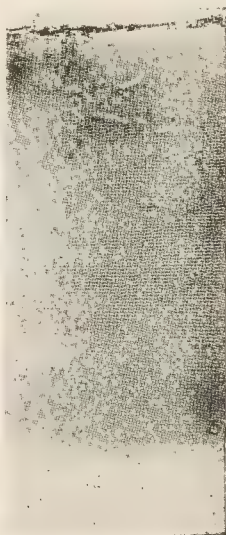


Fig. 9.



Fig. 6.

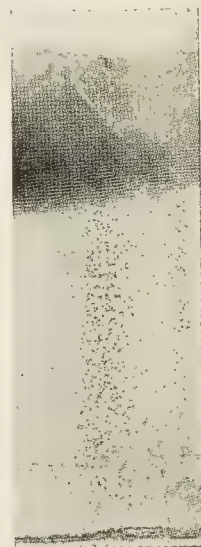


Fig. 10.

formed, as has been assumed, but to the mode of action of the developer. This invited investigation of different modes of development and different developers, from which has resulted a substantial advance in the rendering of pure colours.

Experiments with different modes of development, using the same developer (pyrogallio acid), led to no results. Development with strong developer, with weak slow developer, and with a large proportion of bromide, showed no material difference in the character of the deposit. Long development followed by application of weak Farmer's reducer was unsuccessful, as the reducing solution simply destroyed everything as it slowly worked through the film.

Attention was then turned to other developers, with immediately gratifying results. Ferrous oxalate, glycin, and hydroquinone were tried. All of these developed with great uniformity throughout the depth of the film, without causing fog. Fig. 9 shows a section-

bright line. Moreover, increased thickness with consequent greater number of laminae gives increased purity. Practically, it was found possible to run the films up to about 1-10th mm. (as determined by the number of laminae in sections) with continued increase of purity. A line source is reproduced by such a film as a brilliant line of about 20 A.U. width. By transmission a narrow absorption line appears in the spectrum indistinguishable in a small spectroscope from a Fraunhofer line. In Fig. 14, IV., V., VI., are shown spectra of the mercury green line as reproduced by films containing approximately 50, 150 and 250 laminae. It will be observed that films of this character might serve for sources of comparatively monochromatic light.

The thickness to which the film may be carried is limited by the thickness of gelatine it is practicable to flow and dry satisfactorily. Greatly increased exposures due to the opacity and slow speed of

the thick films made work with them difficult, but the conclusion may be drawn from this work that the purity of reflected colour is, with this procedure, directly dependent on film thickness. It is only a matter of emulsion making and flowing technique to secure films of as high resolving power as one desires.

### Mixed Colours.

Mixed colours, such as two or more spectral lines, or the broad ill-defined bands of the spectrum given by pigment colours, give standing waves which may be compared to the interference fringes

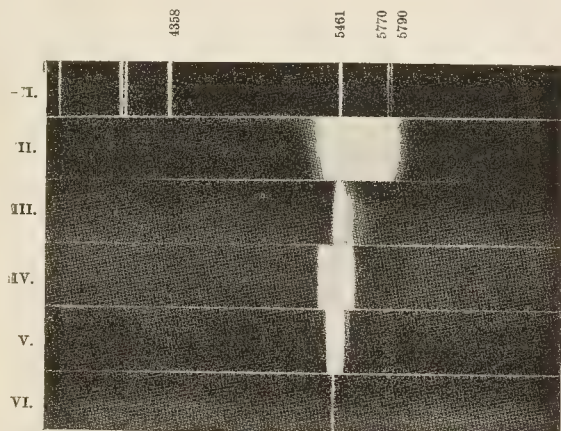


Fig. 14.

they would give in a Michelson interferometer. That is, we have regions in the films where the different wave lengths acting reinforce regions where they oppose each other. The visibility curves,<sup>12</sup> therefore, are applicable to the structure of the Lippmann film. Fig. 1 gives the resultant of two wave-lengths, while the visibility curves figured show the manner in which we may expect the laminae to be distributed for various types of incident light. Photographs have been published by Lehmann showing that the

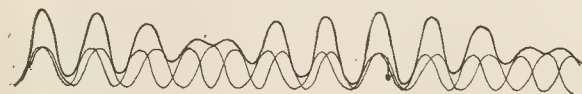


Fig. 1.

Standing wave system due to two wave-lengths.

resultant structure for two radiations agrees with the calculated. Fig. 12 shows a section of a film exposed to four radiations. The periodic variation in the clearness of the fringes corresponds to the variations of visibility of interferometer fringes.

Two points in connection with the reproduction of mixed colours were studied as of special interest. The first was the question of the degree of complexity of incident light the film is capable of recording. The second was the question of the luminosity values of mixed colours as compared with the component pure ones.

As to the amount of complexity in the incident light which may be reproduced, it is at once apparent that this is dependent on the effective thickness of film. A film developed with pyrogallie acid is, from the previous work, unsuitable where depth is called for, hence the best results in the way of resolving power were obtained from hydroquinone-developed bleached films.

Parallel series were carried out on films of the two types. These consisted in exposures to two, three, and four different wave-lengths, and to a broad spectrum band with sharply defined edges.

With pyrogallie-acid-developed thick films the greatest number of separate wave-lengths reproduced was three, and the result was merely a continuous spectrum with three maxima; four radiations produced ill-defined irregularities. The mercury yellow and green

lines were well separated with such a film and probably somewhat closer lines would be. A sharp spectrum band of 600 A.U. width in the green was rendered as a maximum in the green, but all trace of sharp limits was missing, the reproduction being identical with that of the transmission band of a naphthol green dye solution. This is to be expected, as examination of Fig. 2 shows. The first part of the standing wave system of the two types of colour is identical, and in a thin film, or one whose effective portion is thin, will reproduce as such. The effect of development with pyrogallie acid is, in short, to reduce all colours to one general type.

With hydroquinone developer and bleaching, two, three, and

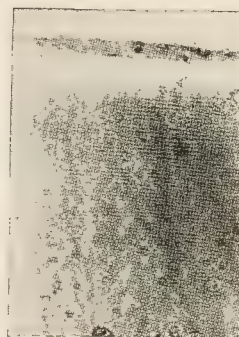


Fig. 12.

four radiations were reproduced satisfactorily, except for loss in luminosity, the cause of which will be taken up presently. The spectrum band was reproduced with well defined edges. From these tests it was concluded, as with monochromatic light, that the capacity of the film to reproduce any form of complex radiation is only limited by the gelatine thickness possible to be obtained practically.

The second point studied, that of luminosity rendering, will be made clearer by some consideration of the theories advanced as to the nature of the reflecting elements in the film. Lippmann developed the theory on the basis of minute reflecting particles dis-

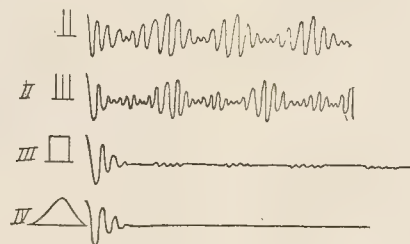


Fig. 2.

Visibility curves for various sources.

- I. Two monochromatic sources.
- II. Three monochromatic sources.
- III. Spectrum band with sharp limits.
- IV. Type of spectrum of light from most natural objects.

tributed through the film. White, for instance, is due to a continuous irregular distribution of such particles. According to this view all the incident light produces reflecting deposit. Schütt<sup>13</sup> advanced the theory that the action of the light is merely to produce a periodic change in the refractive index. Wiener showed that the reflection in the case of bromide of silver plates was from metallic particles. It is possible, for instance, by exposing films of bichromated gelatine, to secure pictures in which the only change produced is in the refractive index.

The luminosities of all but monochromatic pictures will be ren-

<sup>12</sup> Michelson, "Phil. Mag.," 31, p. 338; 34, p. 280.

<sup>13</sup> "Ann. der Physik," p. 533, 1896.



dered radically differently according to which mode of reflection takes place. For illustration take white. In the one case we have a large number of reflecting particles, in the other a single reflecting surface, practically the surface of the gelatine. A monochromatic source would give many such surfaces through the film with the structureless deposit and would be far more brilliantly rendered than a white visually as brilliant. Where two or three colours act together there are regions of the film in which while the total amount of light action is, say, half the maximum amount, yet sharp changes of intensity are missing. If reflection is due to abrupt change of refractive index these portions would contribute little. A loss of luminosity of the combined with respect to the component colours would result. If this were marked colours with two or more maxima, such as purple or a subjective yellow, would be weakly reproduced. Lehmann, working with superposed spectra, notes such a loss. The experiments which follow were made with the two kinds of development, and because of the large surfaces exposed, and the manner of exposing, critical examination was easy.

The first experiment was to mix two and three colours (red, yellow, green and blue, in various combinations) under such conditions that their resultant intensity when acting together could be compared with their intensity separately. The apparatus used consisted of an opaque line screen, opaque spaces twice the width of the transparent, 100 lines to the inch, which was cut in two and one half turned at right angles to the other. This was placed directly in front of the plate, and by means of a screw could be moved any desired distance in the direction of the lines on one half. This motion caused one set of lines to uncover one third of the surface at a time, the other to continually expose the same strips. In one half would therefore be obtained the three colours superposed, in the other half juxtaposed, in which case the mixing would be visual.

In carrying out this experiment the greatest care had to be taken to avoid the effects of over-exposure. As we have seen, exposure

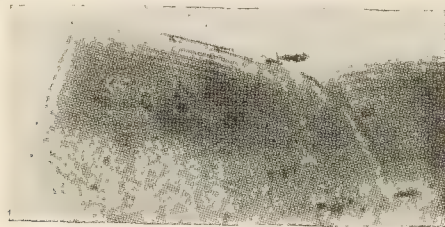


Fig. 13.

beyond a certain point causes no increase of brilliancy. Hence, if each exposure was a full one we would have the entirely covered surface three times as brilliant (with three colours) as the partially covered, indicating a large luminosity loss in the superposed as compared with the juxtaposed. This was avoided by limiting the exposures so that the total exposure with all colours would not reach the saturation point.

The result of the tests was that with pyrogallic acid the loss of luminosity with two colours, as long as exposure was carefully kept below the saturation point, was hardly noticeable, the only effect being a slight tendency of the superposed colours to shift toward shorter wave-lengths. With three radiations a quite perceptible loss of luminosity was observable. In either case exposure beyond the saturation point caused loss of luminosity. With hydroquinone the luminosity loss was much more marked.

The most instructive test was to expose a plate to light of the green mercury line and to a visual match in colour and intensity consisting of a spectrum band of 600 A.U. width. These gave equal densities in the negative. With hydroquinone development and bleaching the monochromatic side was many times the brilliancy of the other. With pyrogallic acid, the two sides were nearly the same luminosity, the complex radiation only slightly less luminous.

Experiments on photographing natural objects whose colours are for the most part continuous spectra with diffuse maxima, besides showing the necessity for a reflecting deposit, emphasised the necessity of this being of high reflecting power. Very fine grain emulsions proved unsuitable for the production of such colours in

their luminosity values, and satisfactory results were obtained only when the silver content of the film was made as large as would still give colour. The reason is at once apparent when we observe that the colours under consideration give at most only a few laminae near the surface, as shown in Fig. 2, and in the photographed section, Fig. 13. It is necessary not only that the reflecting power of these be large, but that the diffuse deposits behind contribute a share of light in proportion to the light acting to produce it. If the grain is too fine these experiments and work with white light indicate that the separate particles do not act as reflecting surfaces.

The outcome of the experiments is to indicate that with a fairly coarse grain, over-exposure being carefully avoided, developed with pyrogallic acid, there is probably a close approach to the condition of separate reflecting particles. With complex radiation, or with over-exposure, there cannot fail to be a certain amount of fusing together and consequent luminosity loss, and in the underexposed parts there is probably also a loss through the formation of deposit not starting till the light attains a certain intensity. With hydroquinone development and bleaching the reflection is evidently more nearly of the type caused by changing refractive index.

This at once makes evident that for all photography where luminosity values must be preserved, a developer like pyrogallic acid, giving a highly reflecting yet fairly transparent deposit is essential. On the other hand, where complexity of spectral structure is to be reproduced, a deep-acting developer which by proper treatment will give a transparent deposit is desirable.

HERBERT E. IVES.

(To be continued.)

#### CINEMATOGRAPH FIRES.

THE demonstration of the many devices for preventing and extinguishing cinematograph fires (referred to on page 947 of our last week's issue) took place at the London Hippodrome on the 10th inst., before a very large number of manufacturers, dealers, operators, and representatives of insurance companies and the Press. Mr. Walter Reynolds, L.C.C., occupied the chair, and was assisted by a strong and influential committee comprising cinematograph and music-hall proprietors, manufacturers, operators, and officers of insurance companies, whose report may be expected during the next few days. In the arena were fourteen cinematograph machines, and other appliances for extinguishing fires. Mr. Reynolds, in his opening speech, said that the desire of the L.C.C. was not to hamper the industry, but to do all in its power to assist cinematograph work, and safeguard the public. Of the fourteen devices demonstrated, the majority were designed for the prevention of fires, while two of the exhibits were sprinklers of the shower-bath type. Among the exhibitors were most of the well-known firms, such as Butcher and Sons, the Ganmont Co., Charles Urban and Co., Wrench, others. One of the favourite devices appeared to be that exhibited by Messrs. Butcher, with which the operator said, it was impossible for fires to occur. Another popular instrument was that demonstrated by Mr. Bromhead, of the Ganmont Co., and while this was being demonstrated one of the audience asked that the film—100ft. or more—in the fireproof box should be set alight, in order to see what would really happen. Mr. Bromhead at once consented, and set a light to the film. The effect was interesting, as the box was not damaged, and no flame whatever could be seen, but a dense, acrid smoke filled the building. The last "turn" in the arena was a demonstration of the new Lumière non-inflammable film by Mr. T. K. Grant. In conclusion, Mr. Reynolds, who spoke highly of the Lumière film, said that were the new film put into universal use at once, the methods of extinguishing films which had been shown were none the less valuable, as it was impossible to do away with the older celluloid films, which, owing to their immense educational value, would continue to be shown for many years to come. The demonstration was intensely interesting, and should benefit the trade considerably; it also proved that other people besides the L.C.C. are doing their very best to overcome the danger of fires.

MESSRS. RAINES AND Co., St. Mary's Road, Ealing, announce that they will be closing their works from Thursday, December 24, till the following Tuesday, December 29, and will be glad if those of their clients who may have orders for enlargements, etc., to place with them will kindly make a note of this.

## Photo-Mechanical Notes.

### PHOTO-MECHANICAL PATENTS.

The following patents have been applied for:—

**PRINTING PLATES.**—No. 25,934. Improved process for producing printing plates and the like. Eugen Albert, 28, New Bridge Street, London.

**PROCESS ENGRAVING.**—No. 25,968. Improvements in the production of process engraving, process prints, and the like, and in the tools to be employed therein. Joseph Bell, 115, Cannon Street, London:

## Exhibitions.

### KINNING PARK CO-OPERATIVE CAMERA CLUB.

THIS exhibition—the third annual—of the Kinning Park Co-operative Camera Club was held in the large hall, Langlands Road, Govan, placed at the disposal of the club by the Educational Committee. The judges—W. C. S. Ferguson, A. H. Duncan, and John Hepburn—are members of, and were appointed by, the Glasgow Photographic Art Circle, which body had on exhibition their loan panel of members' work. The exhibition is confined to members' work, and, led by that enthusiast, the secretary, the members have made much progress in pictorial photography. The Kinning Park take the credit for displaying the work at their exhibition in a manner second to none of the local societies—canvases coloured screens along each side of the commodious hall being the method employed.

The club is a sworn foe of "pot-hunters," a standing enactment being that, if a picture has gained a prize previous to the exhibition, it is ineligible for competition. The result of this was evident in the number of pictures "not for competition" displayed.

About 120 frames were entered by the members, and a very high standard of work was evident; the intention was always there, if the result aimed at had not always been attained.

The results are as follows:—Landscape and Seascape: Bronze plaques, "Royal Bank Place," William Howat; "As the Shades of Evening Close," James B. Ferguson; "Sunlit Ripples," William Urquhart; hon. mention, George Peebles, Neil C. McLeod. Portrait and figure studies: Bronze plaques, "Marguerite," William Simpson; "Good-night," John Currie. Flowers and Still Life: Bronze plaque, "Star of Bethlehem," Alexander Swan. Outings: Award, "The Village—Evening." Confined to those who have never won a prize:—Outings: Award, "An Evening View of the Clyde," Robert Hutcheson; hon. mention, John Bain. Flowers and Still Life: Hon. mention, Hugh Topping. Any subject: Bronze plaques, "Herring Gutting," Thomas Robertson; "Portrait Study," William C. Stark; hon. mention, James W. Simpson.

### FORTHCOMING EXHIBITIONS.

December 30 to January 2.—Chelmsford Photographic Society. Sec., M. J. Morison, Savernake Lodge, Chelmsford.

December, 1908, to January, 1909.—Kiew International Photographic. Sec., S. T. Horowitz, Technical Society, Kreshtchatik, 10, Kiew, Russia.

1909.

January 1 to 9.—Scottish National Photographic Salon. Sec., Robert Telfer, 138, Glasgow Road, Wishaw.

January 6 to 27.—Northern Photographic (Manchester). Sec., S. L. Coulthurst, Broad Oak Road, Worsley, Manchester.

January 19 to 30.—Glasgow Southern Photographic Association. Entries close December 30, 1908. Sec., Robert Lindsay, 189, Allison Street, Glasgow, S.S.

February 1 to 13.—Glasgow and West of Scotland Amateur Photographic Association. Entries close January 20. Sec., James M'Kissack, 68, West Regent Street, Glasgow.

February 8 to 13.—St. Helen's Camera Club. Entries close January 27. Sec., A. G. Elise, Duke Street, St. Helen's, Lancs.

February 10 and 11.—Cowes Camera Club. Entries close February 1. Sec., E. E. Vincent, 4, High Street, Cowes.

February 20 to March 20.—South London Photographic Society. Sec., H. Creighton Beckett, 44, Edith Road, Peckham, S.E.

February 22 to March 6.—Birmingham Photographic Society. Entries close for abroad January 5, for England, February 12. Sec., Lewis Lloyd, Church Road, Moseley, Birmingham.

March 17 to 20.—Nottingham Camera Club. Sec., E. L. Kent, 5, Radcliffe Mount, West Bridgford, Notts.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents have been received between November 30 and December 5:—

**TELEMETERS.**—No. 25,799. Improvements in photographic telemeters or distance gauges. William Wallace Beasley, professionally known as Wallace Bellassie, 63, Onslow Road, Richmond, Surrey.

**PRINTING DESIGNS.**—No. 25,810. Improvements relating to a method of and means for composing photographic printing designs. Adolf Brandweiner, 20, High Holborn, London.

**DISTORTED PHOTOGRAPHS.**—No. 25,828. Improved process and apparatus for producing distorted photographs. George Wutke, 18, Southampton Buildings, London.

**REFLEX CAMERAS.**—No. 25,949. Improvements in or relating to photographic cameras of the type known as reflecting or reflex cameras. Arthur Lewis Adams and Walter George Roberts, Birkbeck Bank Chambers, Southampton Buildings, London.

**CAMERAS.**—No. 25,889. Improvements in photographic cameras. George Sylvester Grimston, 4, Glenluce Road, Blackheath, London.

**VIGNETTING APPARATUS.**—No. 26,115. Improvements in the construction of photographic vignetting apparatus. Alfred Hope Sale, 37, Chancery Lane, London.

**FRAMES.**—No. 26,291. Improvements in and relating to means for applying pressure to photographic frames and for like purposes. Robert Davis Workman, 322, High Holborn, London.

**GLAZING PRINTS.**—No. 26,298. Method and frame for drying gelatine-coated photographic proofs or other papers with the object of obtaining a glazed effect by sticking them on polished surfaces. Nicolaus Ziegler, Chancery Lane Station Chambers, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

*These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.*

**CHANGING BOXES.**—No. 4,153, 1908. The invention relates to an improved storing and exposing device for photographic plates or films, the device being adapted to be attached to the camera to expose the plates successively as required. The plates are contained in a package or casing of a depth sufficient to accommodate only the whole set, and are each transferred after exposure from the front position to the rear of the last unexposed plate. Hence the package is of as small a depth or thickness as is possible to accommodate the required number of plates or films. The movement of the plates is effected by attached strips or "propellant bands" which pass out through the end of the sheath or package, whilst a sliding cover which when drawn out exposes the front plate also serves as the changing space through which the plate passes in its transfer from the front to the rear of the package. There is a spring on the back of the adapter which will press against the rearmost plate in the package when the cover of the package is drawn out to expose the front plate and to permit of changing plates. This particular arrangement is known in other plate holders in which mechanical devices have been used for moving the plates from the front to the back, but it has not been previously applied to packages of plates worked by propellant bands or tabs. Marian Romanowicz, Rechte Bahngasse, Vienna, III.

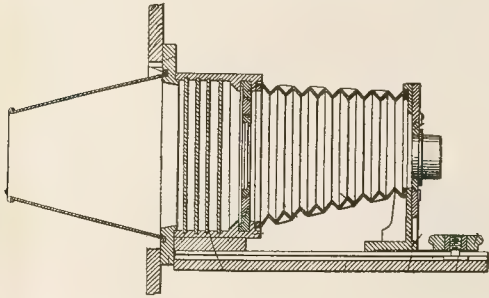
**SELF-PORTRAIT LENS CAP.**—No. 19,339, 1908. The cap or shutter consists of a circular spring clip, to which is attached a flap. The flap is brought into contact with the clip by a spring hinge. On



the inner side of the flap is a covering of black velvet or other suitable material to prevent light from entering the lens when the flap is closed. A thread attached to the flap allows of the latter being pulled downwards, upwards, or sideways from the lens. By simply pulling the thread, cord, or wire, the lens is uncovered, and the exposure made. On releasing the thread the flap flies back, and completes the exposure. Frank Dean, 1, Langham Street, London, W.

**APPARATUS FOR ENLARGING, ETC.**—No. 1,328, 1908. The invention consists of an enlarging apparatus in which the negative is illuminated by light reflected from the walls of a chamber (or reflecting hood) in the rear of the negative. The walls of the hood diverge toward the opening and converge toward its opposite or rear end, where they terminate at an opening at which the illuminant consisting of an electric arc, mercury vapour lamp, or other suitable source of light is arranged. The hood may be conveniently constructed of sheet metal and provided upon its interior surface with a coat of white paint, or said surfaces may be otherwise rendered reflective.

The source of the light is, therefore, through the opening in the small end of the hood, the large end thereof, the diffusion plates, and negative, beyond which it is collected by the lens and projected upon the sensitised or other recording screen placed at a proper



focal distance from the lens. Now as both the diffusion plates and the negative are plane surfaces, and since the light emanates from substantially one point, the direct rays alone on the plane surface cannot be relied upon for the purpose in hand, as they would be of unequal strength at different points upon either, and produce corresponding diversity in the image.

The direct marginal rays travel a greater distance than the axial ray, as they travel beyond the arc of which the axial ray is the radius, and are of course therefore proportionately weaker than the latter, as the squares of the distances. But the angles and general arrangement of the walls of the hood are such that the reflected rays are also reflected to points remote from the point at which the axial rays strike the diffusion plate and reinforce the direct marginal rays to a degree of intensity of the axial rays, with the result that the light force at all points on the negative is uniform, and the rays collected by the lens vary only as they are individually resisted by actual passage through the negative. The well-known office of the diffusion plates being simply to disperse the rays in all directions, their interposition is consistent with the foregoing results. Were the provisions for marginal reinforcement not provided, the clouded or darkened effects upon these plates would be communicated to the negative. Kodak, Ltd., 57-61, Clerkenwell Road, London, E.C.

**CINEMATOGRAPHS.**—No. 7,414. 1908. The invention consists of a regulator for the winding device of a cinematograph apparatus, comprising two oppositely arranged conical pulleys, one of which drives the other, variations of the speed of the driven pulley, which is employed to drive the film through the agency of rollers, being produced by displacement of a belt or friction roller connecting the two pulleys, whereby the apparatus can conveniently drive films which are not perforated. This appliance is combined with a film winding or driving arrangement, comprising a driving and a driven shaft, connected through an elastic or yielding coupling, the driven shaft being alternately stopped and released by a suitable retaining device, which is unlatched at the desired times. Claude Marie Gulliet, 26, Rue de la Concorde, Asnières (Seine), France.

**PAPER FOR FERROPRUSSATE SENSITISING.**—No. 26,445. 1907. The invention has for its object the production of a raw paper for photographic purposes, that shall be inexpensive to reproduce, and shall be smooth and tenacious, whilst easily penetrable by the different liquids used in photography without the fibres of the paper being loosened or the sizing injuriously affected.

For sizing the paper, the ordinary commercial size used, as distinguished from the casein size, or the expensive gelatine size, is treated with tanning liquid or a weak acid, which acts on the fibres of the paper, and finally neutralises the paper.

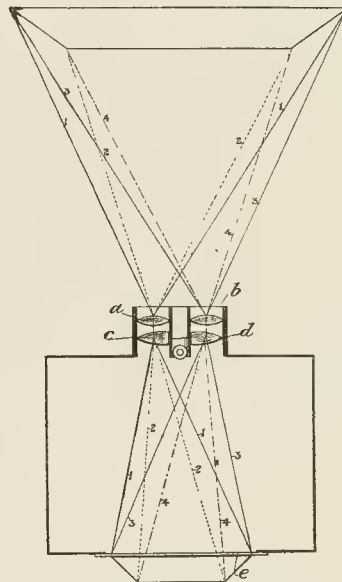
The invention may be carried out in two ways, the paper being sized in the "subsequent" manner and treated with diluted acid or with tanning liquid while still perfectly moist, or the paper thus sized being treated with the diluted acid or tanning liquid after drying.

The paper is then dried in the air, whereby it is rendered very tough by the size, without becoming like parchment, and, which is of special importance, without losing its capacity of absorbing water and the like. This is of considerable advantage, because, in consequence thereof, in the different photographic developing, toning, and fixing baths, the liquid can act likewise from the back of the paper, whereby a quick and uniform toning and fixing of the pictures is effected, and the paper lies perfectly flat in the baths.

Whilst this kind of paper can be permeated by aqueous liquid, different alcoholic liquids have but little effect on it. This is an advantage in papers intended for photographic purposes, as such papers can be sensitised with collodion emulsion without any intermediate layer.

Both kinds of paper can be used for blue prints and photographs, but it is, however, advisable that the raw paper for blue prints should be dried by heated cylinders, the wet process being used. The two processes differ in the choice of the raw material. For paper for blue prints a very cheap material can be employed, whilst for photographic purposes a pure white material must be used. Max Roth, 6, Bogenstrasse, Elberfeld, Germany.

**STEREOSCOPIC CAMERA.**—No. 22,799. 1907. The inventor employs the camera described for making so-called stereoscopic negatives—that is, he obtains "on the negative a picture in relief such as is seen through a stereoscope." A camera is provided with two separate lenses, *a* and *b*—some inches apart from one another—



each of the lenses having at its back the stereoscopic lenses or prisms *c* and *d*—that is to say, lenses similar to those employed in a stereoscope, the arrangement of the lenses being such that separate pictures are taken by the receiving lenses as indicated by

the rays numbered 1 to 4, and are thrown on one another on the sensitive plate *e* and blended into one picture.

The inventor further states that, "with my improved camera, the operator is unable to see the picture distinctly on the ordinary ground glass plate, because it is impossible to have a distant picture on the plate if the picture is meant to be stereoscopic. If, however, the ground glass plate is slightly moistened with oil it gives a good idea of the picture the photographic plate receives. If desired, the ordinary lenses may be dispensed with, and only the stereoscopic lenses used." Franz George Reinke, 55, West Regent Street, Glasgow.

The following complete specification, etc., is open to public inspection, before acceptance, under the Patents Act, 1901.

PRINTING DESIGNS.—No. 25,810. Method of and means for composing photographic printing designs. Brandweiner.

### New Trade Names.

SUNPHAS.—No. 307,712. Chemical substances used in manufactures, photography, or philosophical research, and anti-corrosives. Sissons Brothers and Co., Ltd., Bankside, Sculcoates, Hull, varnish, paint, colour, and oil manufacturers. November 6, 1908.

ARCOGRAPH.—No. 307,337. Prints produced by photographic processes. J. Halden and Co., Ltd., registered offices, 17, Altrincham street, Manchester, Lancs., drawing instrument and material dealers. October 26, 1908.

## Analecta.

*Extracts from our weekly and monthly contemporaries.*

### Remedying Under-Exposed Negatives.

A writer in "Photography and Focus" for December 15, in prescribing partial bleaching with the usual mercury solution as a means of improving under-exposed and over-developed negatives, recommends the following procedure:—

"The negative is bleached exactly as just described, except that the bleaching is stopped as soon as the shadow parts are bleached through. The high-lights, when the glass side of the negative is examined, will still look quite black in colour, showing that the action of the mercury has not extended throughout the deposit there. The negative is then washed as above. As the bleaching action of the mercury goes on to some extent during the washing, it is well to stop the bleaching a little before it seems to have reached the correct stage. After washing, the image is blackened by being immersed in a mixture made by pouring one part of a saturated solution of ferrous sulphate into five parts of a saturated solution of potassium oxalate. The oxalate must not be added to the ferrous sulphate, but vice versa. In this liquid the picture blackens much more slowly than it does in ammonia, usually taking five to ten minutes to complete. The plate is then given three changes in very dilute citric acid (ten grains of acid in five ounces of water is strong enough), and is finally washed under the tap for ten minutes."

The method just described will be found to increase the contrasts of the shadow details much more than it increases those of the high lights, which is exactly what we want. It also has this great advantage over intensification with mercury and ammonia, that if the first application of the intensifier does not prove to be enough, the negative, after being washed and dried, may be submitted to a repetition of the process, and, indeed, to as many repetitions as may appear to be required, only it is essential to dry the plate between each, and to put the dry negative direct into the bleaching bath without any preliminary soaking in water. It is also well to take a trial print before repeating the operation to ascertain whether the intensification has gone far enough. Over-intensification is as great a mistake as over-development.

### Autochrome Lantern Slides.

Mr. Ernest Marriage, writing on the suitable projection of Autochrome lantern slides, in the "Amateur Photographer and Photographic News" for December 15, says:—"Limelight is

deficient in blue rays, and this must be corrected if Autochromes are to be shown with the best effect. This may be done by using a very pale blue screen in the lantern, or by projecting the Autochrome transparencies on to a blue screen. I have found distempers with the trade names "sky blue" or "light blue" answer admirably. Without some correction the blues in an Autochrome do not get due justice done them by limelight. I have a slide of a host of harebells in a wood; on the screen the flowers are hardly visible. Greens, too, in some cases noticeably lose their value.

"Limelight is so much more generally used than the electric arc in lanterns that it would seem worth while to cater specifically for the former. Why should not the makers supply a compensating screen which would pass more blue rays than one which gives correct results for viewing by daylight? This would cut down exposures to some extent, and would enable the lanternist to get the maximum power of the limelight, which, of course, is not obtained if the illuminant is robbed of some of its rays other than blue."

## New Books.

"Fonts and Font Covers." By Francis Bond. London: Henry Frowde. 12s. net.

In this volume, which is a companion to "Screens and Galleries in English Churches," published some six months ago, Mr. Bond traces the history and evolution of the font from the early days of the baptistery and piscina, through the various developments necessitated by change of ritual, to the present time. Whilst the text portion of the book deals entirely with ecclesiastical history, and is in no sense photographic, yet it will doubtless appeal strongly to those photographers who make a special study of church architecture and ornaments, archæology, or record work, for a satisfactory rendering of which an intelligent understanding of the subject is almost essential. The latter portion of the book, dealing with the subject of font covers, is of especial interest, as this subject is practically virgin soil, and the whole volume is, we believe, the most exhaustive treatise on the subject of fonts which has yet been published. The illustrations, 426 in number, are from original photographs secured by the co-operation of photographers and archæologists in all parts of the country, and thus photography plays a not unimportant part in the compilation of this work, on the production of which author, publisher, illustrators, and printers are to be congratulated.

"Who's Who Year-Book," 1909. London: A. and C. Black. 1s. net.

The "Who's Who Year-Book" is made up of the tables which were formerly such a popular feature in "Who's Who" itself. These tables were, in fact, the original nucleus of the book, which developed on different lines into a biographical annual. Thus, though the two books are now entirely distinct, there is an underlying connection, and additional details concerning all persons of eminence who are entered in the tables of the Year-Book will be found in "Who's Who."

The Year-Book was issued in response to numerous suggestions and requests; and the editions already issued have amply proved that, in spite of the large number of reference books, there is still need for one where the information can be seen literally at a glance, and which includes not only the gist of information contained in many expensive publications, but some original tables to be found nowhere else.

Some of the tabs are:—Ambassadors, Ministers, etc., academies (English, Scottish, and French), churches (with temporal heads of each), clubs, House of Commons, Government officials, law officers, London County Council, hospitals, motor-car signs, peculiarly pronounced proper names, heirs of peers, Press, privy councillors, pseudonyms and pen-names, race meetings, railways, schools, societies, university chairs and professors, university degrees and hoods.

"The Englishwoman's Year-Book," 1909. London: A. and C. Black. 2s. 6d. net.

The sphere of women's work obtains the definition of facts in this statistical volume, the sections in which are Education, Employments and Professions, Industrial, Medicine, Science, Literature,



Art, Music, Sports, Public Work, Legal, Clubs, Philanthropy, Temperance, Homes, and Religious Work—truly a formidable list of occupations and livelihoods in which women with greater or lesser prospects of success may engage. We are glad to find that in this paragraph on photography as an occupation for women, a word of warning is uttered as to the over-stocked state of the labour market.

"The Writers' and Artists' Year-Book," 1909. London: A. and C. Black 1s. net.

The staple of the space in this year-book is the directory of periodicals to which literary contributions, photographs, etc., may be offered. In most cases the name of the editor is given, with particulars of the class of matter preferred, and of the terms of payment. The present volume contains, for the first time, a list of the American papers, which are treated in like manner:—The material chiefly required for this market includes short stories, serials, travel articles, gossip about literary persons, essays, etc., but all should be very bright and full of incident or fact; if accompanied by illustrative photographs the matter stands a better chance of acceptance; it should in any case appeal to America and not be viewed from an exclusively English standpoint. Many of the papers will send a specimen copy on approval, so that the style of matter required can be studied. MSS. and photographs should be sent by book post (registered if possible), and letters should go separately.

There are also lists of literary agents and of about a score of photographers who supply pictures and photographs for the illustration of books and articles, but no list is given of agents who undertake the supply of photographs to the Press. The whole production of the volume is clear, and it should be of very great service to those in any way working for the Press.

"Hazell's Annual," 1909. London: Hazell, Watson, and Viney, Ltd. 3s. od. net.

As in previous issues, the contents of "Hazell" are arranged alphabetically, but are very fully itemised in an index, which occupies eleven pages, but is very erratically and irritatingly broken up with advertisements. A regular sequence of pages occupied by advertisements would have been preferable to the irregular placing of these latter, first on the right and then on the left, which has been thus allowed greatly to reduce the value of the indexer's painstaking work. Among the new articles contained in the volume are those on the following:—Aeroplanes, Airships, and Balloons, Agriculture—Small Holdings, "All Red" Route, Baltic and North Sea Agreements, Cables of the World, Census of Production, Coal Smoke Abatement, Co-partnership and Sir C. Furness's Scheme, Cost of Living and Rates of Wages (United Kingdom and Germany compared), Housing and Town Planning, Licensing Question and Statistics, Lotteries and Indecent Advertisements, Naval Forces of England and Germany compared, Old-Age Pensions Act and Regulations, Proportional Representation, Religious Congresses, 1908, Taxation of Land Values, Trade Depression in 1908, Unemployed Question.

But in all the other branches of human activity the volume supplies a most useful précis of progress or of the present position.

"Photographische Chemie" (Liesegang). Third Edition. Re-written by Dr. Karl Kieser. Leipsic: Ed. Liesegang (M. Eger). M.2.50.

This is a book (in German) for the reader who desires an elementary acquaintance with the inner principles of the chief photographic processes, positive and negative. It is not an exhaustive treatise; it is not loaded with historical references; but it is commendably clear and brief in its statement of the chemical bases of operations such as dry-plate manufacture, development, orthochromatising, etc.

"Penrose's Process Year-Book," 1908-9. Edited by William Gamble. London: A. W. Penrose and Co., Ltd. 5s.

The fourteenth volume of this notable production is published earlier than usual this year, and once more Mr. Gamble is to be congratulated on his collection of illustrations and articles. He is, however, not yet to be entirely congratulated upon the get-up of the book. The quiet and tasteful wrapper is in marked contrast to the cover itself, which makes the book look more or less like a Sunday school prize; still the colour and design are perhaps pleasanter than last year.

There are the same great variety of inks, and although there are none so disagreeable as some were last year, it seems to our mind to be more or less a mistake to vary these inks so much. If it is de-

sired to show different kinds of inks, then surely the best way to do that would be to print one block with the various inks, putting it at the end of the book; or, if some blockmakers prefer their blocks printed in a certain shade, then they ought to go at the end of the book. It surely would be more artistic to run one colour throughout, and it is probable that a good black or dark brown would suit most of the blocks very much better than many of the fancy shades shown. Another unpleasant feature of the book is the placing plate illustrations in the middle of an article. There are several articles in which illustrations are interleaved that have nothing whatever to do with the text.

Apart from these few cavillings, we are glad to note that Mr. Gamble continues to use non-surfaced papers, and the paper used this year is very pleasant indeed, though we doubt whether there is not a considerable amount of loading, and whether on this account it would be much more durable than many art papers. Nevertheless it is a good deal pleasanter to handle and look at.

The mass of illustration does not call for any special remark, as the work of photo-engravers appears not to have advanced much further during the past year. There are several examples of work with grain processes, some of the work done with the Metzograph screen being quite excellent. There is also a reproduction in three-colour both by the ordinary crossline screen and by the Metzograph. Certainly, the Metzograph screen shows more texture, but the colours of the two pictures are entirely different, and without knowing what the original is like, the crossline appears to be the more pleasant. There is a Metzograph-screen produced lithograph in five printings, and a photogravure frontispiece, which itself does nothing to deserve the eulogy on the process given by Mr. Gamble in his introductory article, as it looks in the copy we have as though it were printed from a rather worn plate. Altogether there are over sixty illustrations in two, three, and four printings, several from abroad; but, of course, the majority are from England, and again the comparison leaves nothing for the English engraver to feel ashamed of.

In this volume there is perhaps more than usual about lithography and photolithography, the new offset printing presses coming in for attention in two articles, and also electrotyping has a large share of attention. Our friend, Major-General Waterhouse, as well as Mr. Dunton, of New York, and Mr. A. E. Bawtree contribute. Much is said in favour of lead moulding, but something against it also. Autochromes come in for considerable attention also this year.

Among the other contributions, there are two articles from Professor Namias, one on Autochromes, and one on photo-lithography. There is also an article by Dr. Clay on lenses, and one by Mr. Amstutz on acrotones, also one by Mr. Howard Farmer embodying his investigations on the action of the crossline screen, which he gave as a paper to the Royal Photographic Society, and there is a careful argument as to the advantages and disadvantages of grain processes in an article by Mr. A. J. Newton. The editor himself contributes not only the introduction and a summary of the year's progress, but another article on Mr. Payne's new process for photographing direct on metal, which was first noticed in the "British Journal of Photography," and also another article, "Animated Photography in Natural Colours."

On the whole, the volume is marvellous value, and certainly no one who is interested in any of the crafts concerned can afford to be without it.

"Who's Who," 1909. London: A. and C. Black. 10s. net.

It is difficult to say more of the new issue of this indispensable annual than that it now runs to over 2,000 pages, containing over 20,000 biographies, or more correctly autobiographies, since the particulars are supplied and revised by the subjects. Notwithstanding its immense number of pages, the volume is kept within decent limits, and is clearly legible. We number it among our most valuable books of reference.

THE ARTISTIC IMPULSE.—The girl had been three weeks in the family of the amateur photographer with the artistic temperament, but her time had been by no means wasted. Her mistress was giving her instructions as to the dinner.

"Don't forget the potatoes," enjoined the lady.

"No, ma'am," was the reply; "will you 'ave 'em in their jackets or in the hood?"

## Dew Apparatus, &c.

Rodenstock's Universal "Imagonal" Set. Sold by Charles Zimmermann and Co., Ltd., 9-10, Mary-at-Hill, London.

Two sets of these convertible lenses are made, No. 1 being designed for half-plate work and No. 2 for whole-plate. No. 1 is the set we have tried, and its cost, £7 10s., cannot be considered excessive, seeing the wide scope covered by the various combinations. All the changes are made at the back of the objective, and to facilitate matters a so-called "rapid mount" is employed; instead of a screw, a very ingenious kind of spring bayonet joint is fitted. This applies both to the flange and to the back combination, and as a result any required change can be effected in a few seconds. Four back lenses are provided, and with these the following doublets can be formed, each of which fully covers a half-plate:—A wide angle of 5 $\frac{1}{2}$ in. focus and aperture  $f/15$ , a 6in. of  $f/10$ , a 7in. of  $f/6.8$ , and a 10 $\frac{1}{2}$ in. lens of  $f/12$  aperture. All these doublets are anastigmats, and tests show that they are anastigmats of good quality, though not absolutely free from astigmatism like the "Heligonal" doublet. The front combination, used alone, gives what the makers describe as a portrait lens of 8 $\frac{1}{2}$ in. focal length, while if this front combination is unscrewed and the back lenses alone used, then "landscape" lenses of 9 $\frac{1}{2}$ in., 12 $\frac{1}{2}$ in., and 18 $\frac{1}{2}$ in. focal length are obtained. All these single lenses are supposed to be used at  $f/31$ , but larger apertures are available, and may be useful in many cases. The set is put up in a very neat case, carrying also two filter screens, fitting into the back lenses, together with a table of stop values and exposures. It will be noted that the most rapid combination is one of 7in. focus and  $f/6.8$  aperture. This is a very useful type of lens for a half-plate camera, and this particular "Imagonal" is a good anastigmat suited to all kinds of work.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

#### FRIDAY, DECEMBER 18.

Redcar Photographic Society. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.  
St. George's Co-operative Camera Club, Glasgow. Dutch Lantern Pictures. A. E. Staley & Co.  
Sutton Photographic Club. "The Movements of the Camera, and their Uses." C. Thwaites.  
Mill Camera Club. Debate.  
Aberdeen Photographic Art Club. Scottish Federation Portfolio.  
L.C.C. School of Photo-Engraving, Bolt Court. "Mark-Smith Etching Machine." G. Venner Dear.

#### MONDAY, DECEMBER 21.

Catford and Forest Hill Photographic Society. Monthly Competitions. Criticism by M. Arbuthnot.  
Dewsbury Photographic Society. Exhibition of Thornton-Pickard Prize Slides and Apparatus. R. Hesketh.  
Kidderminster and District Photographic Society. Pictures with the Goerz Lens.  
Southampton Camera Club. "The Bromoil Process." Demonstrated. C. H. Hewitt.  
Leek Photographic Society. Amateur Photographer and Photographic News Prize Slides.  
Scarborough and District Photographic Society. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.  
Bradford Photographic Society. Open Night.  
Stafford Photographic Society. "Midland Photographic Federation Portfolio."  
South London Photographic Society. Excursion and Lantern Slide Competitions.

#### TUESDAY, DECEMBER 22.

Royal Photographic Society. Lantern Meeting. "In the Land of the Black Mountain; Montenegro as I saw it." Rev. T. T. Norgate, F.R.G.S.  
Birmingham Photographic Society. The R.P.S. Affiliation Competition Slides (1908).  
Workington Photographic Society. Dutch Lantern Pictures. A. E. Staley & Co.  
Keighley and District Photographic Association. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.  
Hanley Photographic Society, Y.M.C.A. "A.P." Prize Slides.  
Hackney Photographic Society. "The After Treatment of Bromide Prints." S. Woodhouse.

#### WEDNESDAY, DECEMBER 23.

Croydon Camera Club. Conversational Evening.  
Edinburgh Photographic Society. "Gaslight Printing Processes." James Oliver.  
High Cross Institute Photographic Society. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.

#### THURSDAY, DECEMBER 24.

Leek Photographic Society. Nomination of Officers, etc.

### ROYAL PHOTOGRAPHIC SOCIETY.

MEETING held Tuesday, December 15, Dr. C. E. K. Mees in the chair. A paper was read by Mr. Duncan J. Reid, M.B., C.M., F.Z.S., on methods of photo-micrography. The lecturer dealt in considerable detail with the installation of a photo-micrographic outfit and with the procedure for finding the numerical aperture employed. On this latter he based a standard of exposure for normal subjects, explaining that in the case of stained objects and others of a special character there is no other means except the worker's personal judgment.

### THE PROFESSIONAL PHOTOGRAPHERS' ASSOCIATION.

A MEETING of the General Committee was held at the Royal Photographic Society, 66, Russell Square, W.C., on Friday, December 11. Present: Messrs. Alfred Ellis, Lang Sims (Hon. Treasurer), H. C. Spink (Brighton), and A. Mackie (Hon. Secretary). Mr. A. Ellis in the chair. The Hon. Secretary read correspondence between the Hon. Secretary of the Newspaper Society and himself in reference to the arrangement of a conference for the purpose of settling a recognised form of procedure with regard to the use of photographs by the Press, for which permission to reproduce had not been previously obtained.

Letter read from Mr. A. A. Bridge in reference to an interview the writer had had with the manager of the Platinotype Co. at the request of the committee on the subject of discount terms on platinotype paper.

Letter read from the manager of the Fine Art and General Insurance Co. in reference to the insurance of extra hazardous structures.

Correspondence read between the Hon. Secretary and Messrs. Welchman Bros., of Retford and Gainsborough, members, relative to the prosecution of a free portrait canvasser, who had obtained orders on the representation that Messrs. Welchman were giving the enlargements away for the purposes of advertisement. The action taken in the matter by the Hon. Secretary was confirmed.

The Hon. Secretary was instructed to write to Mr. W. Downey a letter expressing their sympathy in the loss of his son, Mr. W. E. Downey.

Several other matters relating to the business of members were also dealt with.

MELBOURNE CAMERA CLUB (DULWICH).—Thursday, December 10, was the date appointed for a committee to consider the formation of a concert to be given in January. Some four to five hundred persons are expected, and the programme will have some leaning towards photography in the form of a lecture during the interval demanded by the artists, to be delivered by Mr. Visick, the Secretary, entitled the "Lusitania" and "Mauretania." A somewhat novel item will present itself in the manner of engaging three children to distribute souvenir postcards of the club. The children will be attired in artistic dresses made up of the covers of the "B.J." and those of two of its contemporaries, constituting red, white, and blue, to represent the Press and our national colours. Following this committee was the general meeting, when the President gave the second of his elementary evenings on "Exposure and Development." M.Q., Amidol, and Rodinal were discussed at length.

LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.—At the meeting held Thursday, December 10, Mr. T. E. Freshwater in the chair, Mr. W. R. Stretton read a paper upon "Art and Photography."

GLASGOW AND WEST OF SCOTLAND AMATEUR PHOTOGRAPHIC ASSOCIATION.—This society will hold its annual exhibition at 180, West Regent Street, Glasgow, from February 1 to 13, 1909, when Messrs. J. Craig Annan and R. M. G. Coventry will perform the work of judging the exhibits. In the open classes, three in number, one will be entirely devoted to autochromes, and the specially designed association plaque will be placed at the judges' disposal for award. Entries close January 20, on or before which date entry forms, together with the necessary fees, must reach the Hon. Sec., Mr. J. M'Kissack, 68, West Regent Street, Glasgow, from whom entry forms and further particulars may be obtained.



## Commercial & Legal Intelligence.

**THE LUXIA COMPANY.**—(George Frederic Turtle, lately trading as manufacturer of sensitised paper, late of 14A, South Hill Park, Hampstead, N.W.) The statutory first meeting of creditors under this failure was held on December 14, at the London Bankruptcy Court, Mr. Egerton S. Grey, Official Receiver, presiding. The receiving order was made on November 30 upon the petition of Otto Scholzig, the act of bankruptcy alleged being the debtor's non-compliance with the requirements of a statutory bankruptcy notice. The chairman reported that, according to the debtor's statements, he for ten years prior to 1901 financed his son-in-law, Mr. M. S. Berger, who was carrying on business as a sensitised paper manufacturer. In that year he purchased the business at the price of £600, and had since carried it on at 14A, South Hill Park, Hampstead, under the style of the Luxia Company. For the last twenty years he had also been engaged as an insurance agent, and as an inspector had been in receipt of a salary of £200 per annum. He had not taken any active part in the business of the Luxia Co., the management of which he left to his son-in-law. Later, however, the business had been managed by another person. The debtor further stated that on October 16 last he sold the business for £750 in debentures of a company to be formed for the purpose of acquiring it, but the company was never formed, and the business was then sold to another person for £750 in bills. No valuation was made, but he considered that the sale was a fair one at a forced sale. His son-in-law had instituted proceedings against him, claiming to be a partner in the business, but those proceedings were dismissed; another action had, however, since been commenced. The debtor had not filed any statement of affairs, but he estimated his liabilities at £750. He denied that he was insolvent, saying that, if the bills for £750 were duly met, he should have enough assets to pay the creditors 20s. in the £. In addition, he disclosed assets in the shape of nine freehold houses, mortgaged for £2,400, the surplus value of which was doubtful, and £25 in cash.

On behalf of the debtor it was pointed out that he did not receive a shilling profit on the sale of his business, which was simply disposed of for a sum exactly sufficient to pay the liabilities. Mr. Berger's claim for £792 was disputed. It was believed that the bills for £750 would be met in due course. The debtor was quite willing to consent to an order of adjudication.

The chairman having admitted the proof of Mr. Berger for voting purposes to the extent of £35 odd, a resolution for bankruptcy was passed, and Mr. Henry Fraser, chartered accountant, appointed trustee to wind up the estate. The following committee of inspection were nominated:—Messrs. Otto Scholzig, M. S. Berger, and Otto Rosenstheim.

The debtor's public examination is appointed for January 12.

Appendix is a list of the principal proofs of debt lodged by creditors:—

	£	s.	d.
Berger, M. S. ....	792	9	5
Golding, E. H. ....	420	9	7
Golding, J. ....	39	5	7
General Paper Co. ....	22	15	0
Howell, J. F., and Co. ....	10	0	0
Johnson, Matthews, and Co. (Ltd.) ....	22	18	2
Pennellier, D., and Co. ....	10	0	0
Potter Bros. ....	16	15	4
Scholzig, O. ....	202	10	1
Wright Bros. ....	10	0	0
Nelson, Dale, and Co. (Ltd.) ....	16	8	0

**THE POST OFFICE AND ART PHOTOGRAPHS.**—At the South-Western Police Court, on Saturday, Mr. de Grey finally dealt with the two summonses against Hermann Karl Wilhelm Erdmann, trading as Erdmann and Schanz, photographic publishers, Bedford Hill, Balham, alleging that he had sent postal packets containing improper portraits through the post. The case has already attracted a good deal of attention in the daily press, but the summing up of Mr. de Grey, as reported in the "Times" on Monday last, contains the arguments for and against the classification of the photographs as "indecent."

Mr. de Grey, in giving judgment, said the proceedings were taken under Section 4, sub-section (b), of the Post Office Protection Act,

1884. It was admitted that the defendant sent two packets, the one addressed to a Mr. Fitzpatrick, the other to a Mr. Hawkins, in Tasmania, containing photographs and other documents, which were seized in Tasmania and returned to the General Post Office in this country, where they were examined, and thereupon the prosecution was instituted. The question, therefore, that he had to determine was whether the photos were or were not indecent. It would hardly be contended by the defence that if these photographs were exhibited in a shop window or sold openly in the streets or across the counter of a shop they would not be indecent photos. The Post Office authorities, indeed, laid down the proposition that certain photographs were necessarily indecent. It was not necessary for him to assent or dissent from that proposition absolutely, for reasons which he would give. He would go so far as this, that if photographs of this character were sent by post it must lie on the defendant to justify the sending of them and to show, if he could, that, under the peculiar circumstances of the case, they were not to be classed as indecent, that was, calculated to corrupt the morals of those into whose hands they might fall. The defendant's contention was that he supplied these and similar photographs for artistic purposes only, and only to artists and artistic students, and he contended that, if intended to be sent to such persons and for such purposes only, they were not to be classed as indecent, and in support of this proposition he called several artists, sculptors, and others, who gave it as their opinion that the photographs were not indecent, and that they had used or known to be used similar photographs for artistic purposes. But when he came to look at the photographs themselves he found that, though some of the larger ones which were in Mr. Fitzpatrick's packet might be said to be artistic poses, two at least were in distinctly suggestive and inartistic attitudes. With regard to those in Hawkins's packet, there were a great variety of attitudes, some of which might be classed as artistic poses, but many of which were inartistic and suggestive. He thought, therefore, that even if the defence made out that the photographs were intended for artists only they would still be unable to resist the accusation of having sent by post photographs which were, in fact, indecent. And the defendant must be taken to have intended the natural consequence of his acts, and he must, therefore, be taken to have sent the photographs with a wicked intention. But had the defendant in his evidence made out even that he intended the photographs for artists or art students only? He said that he made inquiries with regard to his customers, but it seemed that these inquiries were only as to their solvency, or what he termed their bona-fides, through Stubbs's Agency. As regards Hawkins and Fitzpatrick, the only evidence of their being artists was a passage in the letter of one of them, in which cloud studies were mentioned, and the defendant says that only an artist would talk of such things as cloud studies. This was rather a flimsy pretext for considering a man to be an artist or art student. In fact, he knew him to be a tea merchant, and that was all. And when one looked at Fitzpatrick's letter it was quite evident that he, at any rate, did not require these photographs for artistic purposes, but for something totally different. With regard to the objection taken at the close of the prosecution that each of the two summonses should have been heard separately, and that the prosecution should have elected on which they intended to proceed, he entirely disagreed. Two summonses, he said, were applied for, and, as was frequently the case when the summonses related to one offence, they were tried together. The defendant could not be prejudiced, because it would be no defence to a prosecution in the case of Hawkins's packet to plead that he had already been convicted in the case of Fitzpatrick's packet, or vice-versa. He therefore convicted the defendant, and fined him £10 and five guineas costs in each case, £30 10s. in all.

**WALTURDAW COMPANY, LTD.** (Cinematograph Manufacturers, London).—A memorandum of satisfaction in full of debentures, dated August 23, 1906, securing £2,000, has been filed.

**LEGAL NOTICES.**—A first and final dividend of 5s. in the £ is to be paid in the case of Mrs. Mary Ann Osguthorpe, photographer, Falconer's Road, Scarborough.

Notice of an intended dividend is given in the case of George Robinson Harris, carrying on business under the name of G. R. Harris, and also under the name of Harris and Co., photographers etc., 222, Broadway, Bexley Heath, Kent. The last day for receiv-

ing proofs by Mr. Tatham, Official Receiver, Maidstone, is December 22.

An adjudication order, dated December 8, has been made against Samuel Thomas, photographer's assistant, of The Mount, Pearson's Road, Birkenhead, lately residing at 113, Camden Street, Birkenhead. Debtor filed his petition the same day as the order.

Notice is given in Saturday's "Government Gazette" of the voluntary winding up of the Animated Photograph Company, Ltd. Mr. H. C. Bound, 57, Moorgate Street, E.C., is the liquidator.

## News and Notes.

**PHOTOGRAPHS OF PRISON SCENES.**—An excellent instance of specialisation in photography is afforded by last week's "Sphere," which contains an article and nearly a score of photographs of scenes and incidents in the female prison at Aylesbury, which is the only convict prison for females in this country, and has never previously been photographed for any publication purpose. The photographs are the work of Mr. H. Andrews, of the firm of Bulbeck and Co., by whom also a large series of negatives has been made in the Wormwood Scrubs Prison. Photography in a prison calls for technical skill of a peculiar kind, but the photographer in these instances has been able to take advantage of the unique facilities which have evidently been granted him.

**NOTTINGHAM CAMERA CLUB.**—The eighth annual exhibition of this society will be held from March 17 to 20, 1909, in connection with which the authorities announce that they are prepared to collect pictures from Birmingham and forward them to Sheffield free of charge to exhibitors, if desired. Entry forms are not yet to hand, but further particulars may be obtained from the Exhibition Secretary, Mr. E. L. Kent, 5, Radcliffe Mount, West Bridgford, Notts.

**COWES CAMERA CLUB.**—This club will hold its second annual exhibition in the Town Hall, Cowes, I.W., on February 10 and 11, 1909. There will be six open classes, one specially devoted to colour work (prints or transparencies). Bronze plaques and medals will be placed at the disposal of the judge, Mr. S. G. Kimber, F.R.P.S., for award, together with a silver challenge plaque for the best picture in the exhibition. Entries close February 1, and further particulars, with entry forms, may be obtained from the Hon. Sec., Mr. E. E. Vincent, 4, High Street, Cowes, I.W. Exhibits intended for the exhibition of the Isle of Wight Photographic Society will be conveyed from Cowes to Newport free of charge.

## Correspondence.

\**Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*

\**We do not undertake responsibility for the opinions expressed by our correspondents.*

### CARBON PRINTING ON IVORY BY SINGLE TRANSFER.

To the Editors.

Gentlemen,—The difficulty of cleaning off the single transfer carbon image after drying, combined with my own long experience of the process, convinces me that any fear of want of adhesion of the once dried images is entirely mistaken.

The use of a substratum in a single transfer process would at once destroy its special advantage, that of offering the artist a real ivory surface to work upon.

As I understand it, a single transfer process on ivory was attempted commercially many years ago, but abandoned, not from any want of adhesion of the completed image, but from the impracticability of removing the bichromate stain; the process of washing the tissue completely, and then extracting the water with alcohol, not being then known. If, however, there is any record of such use it would be interesting to know where it may be found.—Yours obediently,

W. E. DEBENHAM.

[Our correspondent is quite mistaken in supposing that the single transfer method was abandoned—or rather not put to commercial use—because of the staining of the ivory, as that is impossible when

the bichromate is washed out of the tissue. It was because of the slight adhesion of the film of the finished picture to the ivory. Whereas by the double transfer method, as described by us in these pages, it is impossible to disturb the image except by scraping it off, or by treatment with very hot or boiling water. It goes without saying that after washing out the free bichromate it makes no difference whether the tissue is allowed to dry spontaneously or has the drying hastened by spirit.—Eds. "B.J."]

### LARGE VERSUS SMALL SIZES: A BUSINESS QUESTION

To the Editors.

Gentlemen,—Of late years there seems to us to have been a tendency to cultivate business in the wrong direction, viz., by giving prominence to portraits of small-size post-cards, midgets, and the like at cutting prices, instead of working in the opposite direction."

After reading this paragraph on page 938 of the "Journal's" last issue, I scanned the advertisement columns, and what do I find? Every page crowded with adverts. re midgets, post-cards and devices, "multi" this and "multi" that, for turning such out by the million, and also in "Situations Vacant and Wanted," every assistant must be, or is accustomed to large quantities, skilled in midget work and post-cards; must be willing to work on a Sunday, and be used to night work. Thus, does this "Journal" give prominence to that which the editorial article decries; but, I presume, its advertisement pages are but the mirror which reflects the status of the photographic art.

Oh! Shades of all the mighty workers of the past, whose names I could pen by the dozen or so. How our art has fallen. But I have no wish to repeat my views on the subject; they have appeared often in these pages in a Gilbertian strain.

"Lord Chancellors were as cheap as sprats,  
And Bishops in their shovel hats  
Were as plentiful as tabby cats,

And dukes were three a penny."

But may I add that the few thousand midget cards which an eloquent and plausible traveller induced me to order some seven or eight years ago (and which I have never attempted to use) I have burnt. Again, to quote from the paragraph in question, "A single picture of these sizes (12 x 10 or so) carries as much or more profit to the photographer than do, perhaps, several dozen of the smaller sizes." In face of this, may I state, that you can have in this town a sitting and one copy, 12 x 10 size, for the munificent sum of 1s. This is a fact, and is well advertised by the producer, in addition to the advertisement I hereby give him. The president of the Royal Photographic Society in the same issue, page 950, says: "The triumphs of photography have been those of commercialism." Rather a hollow sort of triumph, is it not?—Yours faithfully,

The Studios, 7 and 8, Park Street, Hull.

W. BARRY.

To the Editors.

Gentlemen,—Your article in to-day's issue is just what the middle-class man should put into practice. For some time now I have been making a show of Imperials, and gradually people have taken to them. Just now I am doing quite a number for Christmas, taking direct. I never do postcards under 4s. per dozen, and then only full or three-quarter length, and never exhibit same in any way prominently. I have any amount of good men competing with me in my town, and I notice they show the same specimens for months together. I always change my show every week. A lady said to me only to-day: "I never see anything fresh or new in any of the big men's windows." I am only a middle-class struggler, but I think I struggle on the right lines. I enclose my card.—Yours truly,

A TRIER.

### STEREOSCOPIC PROJECTION.

To the Editors.

Gentlemen,—I was much interested in the letter by Mr. Harry de Beer in the "B.J." of last Friday, 11th inst., and so would be much obliged if you would just add one word of explanation to the *modus operandi* described. He says, "The slides were then washed in soda sulphite solution (what strength?), and then fixed in hypo." Does this mean to say that all the previous dyeing operations were performed before fixing, therefore in the dark room, or were the lantern slides made as usual and then dyed?



if so, what is the second fixing for? Then no definite instructions are given as to the strength of the various solutions mentioned.

Now let me point out just one thing lacking here, and also in your valuable "Almanac": A solution of iodine in iodide of potassium is frequently mentioned, but in the present "Almanac," as in those of previous years, the making of that solution has not been given. Is it a saturated solution of potass iodide or a 10 per cent. solution? And then how much iodine is dissolved or can be dissolved? At what strength is it used as a clearing bath? Although I have noticed it is not given in the "Almanac" as such, though used for that purpose in negative making).—Yours faithfully,  
A. THOMAS,

340, Hungerford Road, Crewe.

[Perhaps our previous correspondent, Mr. Harry de Beer, will be agreeable to supplement his previous letter with particulars of the solutions used. We may point out, however, to the writer of the above letter that the fixing bath is used by Mr. De Beer to remove the silver iodide formed on bleaching the iodine; an image in dye only is thus left, and the process, subsequent to the first preparation and fixing of the lantern transparencies, need not be done in a dark room. In regard to the use of a solution of iodine in potass iodide, the only two instances we can turn to at the moment are on pages 787 and 808, in both of which a 10 per cent. solution of iodine is directed. The quantity of the iodide, provided it is sufficient, is immaterial, an excess having no effect on the employment of the bath for the reduction of negatives or bromide prints. A useful method to adopt is to place the iodine in an empty measure, add about twice or three times its bulk of potass iodide, and then just enough water to allow of a fluid mixture being made. The iodine will then dissolve immediately, which it will not always do when stirred up with a comparatively weak solution of iodide.—Eps. "B.J."]

#### AGREEMENTS WITH MANAGERS OF BRANCH STUDIOS.

To the Editors.

Gentlemen,—In the "Daily News" of a fortnight ago there appeared an article headed "An Evil Practice," dealing with radius agreements, in which the writer said:—"The injury caused alike to the employees and the public by such is very great. Their tendency is to stifle competition and practically to hand over a monopoly of the trade to existing firms." Will you allow me, in your valuable paper, to show the fallacy of this argument, because I believe that photography has materially suffered through the non-application of the principle.

I am as strong an advocate of free trade as probably you are, and I say one man has as much right to live in a town as another, providing he gets established there on equitable lines. One of our leading men not long since remarked that it was competition versus co-operation which was damaging to trade. Now as I understand the radius agreement principle it is this:—You employ a stranger to come and conduct, say, a branch business you have purchased from a trader in another town. He comes, and finds the business wants energy and push, and you agree to pay him accordingly for his work. Perhaps for months, it may be a year or two, or even more, the margin of actual profit is small, if any. It then begins to grow. In another year this manager says things are paying well now; my work has become known and I have made many friends; I shall now start on my own account. He can do this with impunity if you have no agreement; but if you have, surely it should be enforced. Oh no, the writer says, it is injurious to the public. I deny it. The only one injured is the man who has invested his money and run the risk of success for two or three years. You do not stop competition merely by your agreement. Any stranger may come the week after you bought it and start another, or at any future date. What you object to is having your own house divided. If your manager wishes to start de novo he is free to benefit the public anywhere else, as free as you were to take the risk of a branch business where you were unknown. It is to prevent this kind of division radius agreements were made. But how has photography suffered? Perhaps most in provincial towns. The competitors, to make a living, have begun reducing prices, and this has grown, and so you may find in some fairly large towns I could name a dozen cabinets offered for 5s. 6d., and a dozen photographers trying to exist on a population of 10,000. Probably three or four of them do, but as for the rest the less said the better.

OBSERVER.

## Answers to Correspondents.

### PHOTOGRAPHS REGISTERED:—

G. MESS, The Priory Studio, Church Street, Christchurch, Hants. *Photograph of the Priory Church and Ruins, Christchurch, in a Snow-storm.*

MEASUREMENT OF FOCAL LENGTH.—In describing Grubb's mechanical method of ascertaining the equivalent focus of lenses, Mr. Traill Taylor, in his "Optics of Photography," p. 103, lines 9-11, says:—"The distance of the intersection of the first two lines and the third line is the equivalent focus of the lens." I shall be glad if you will say if, in your opinion, Mr. Taylor meant the distance between the apex of the triangle formed and the intersection of the base line with the containing sides of the angle or the distance between the apex and the nearest point (the centre) on the base line.—J. W. B.

The distance from apex to centre of base line is the correct focal length.

COPYRIGHT.—A few months ago I photographed a certain subject, but finding that a local tradesman has had reproduced this particular subject from my original, and without my permission, I have this week registered same. What can I now do in the matter to stop further sales? I do not know the firm who reproduced same. Can I legally demand to know, or is it sufficient to warn the one who had same reproduced?—COPYRIGHT.

Now that registration has been effected you are at liberty to take action against either those making or selling the reproductions. Both are equally liable, and a solicitor's letter to the latter should be sufficient to cause him to withdraw the goods from sale.

J. ARGENT.—(1) About 10,000 on a rough estimation. (2) There is not one. (3) Apply to the Secretary, Mr. A. Mackie, 89, Albany Street, London, N.W.

POLYCHROMATIC EMULSION.—I have reason to believe that I can colour the silver haloids in gelatine emulsion in the three colours enclosed, so that each will retain its colour when in emulsion form. Would the result be colour in the negative and positive, or what would be the probable result? The colours are not soluble in water. The green and violet in powder form are sensitive to light. They are the common dyes sold in penny packets put through a very peculiar process, which alters their nature. I have enclosed a small sample of the green in powder form. If exposed to sunlight for a time it will gain in colour. My reason for writing to you is, will it pay me to go on with the experiment, as I have none too much money but plenty of time on my hands? Kindly give me your opinion.—W. R.

It is useless your attempting to dye the emulsion with colouring bodies which are not soluble. Apparently the lines on which you are working are those suggested in an article by Schinzel which we published in the "Colour Photography" Supplement to the B.J. of August 7, 1908, p. 61. As we then pointed out, the technical difficulties in the way of such a process are very great. If we knew more definitely what you are driving at we could, perhaps, advise you.

W. S., Junr.—(1) We advise you to get a lens made specially with a view to its use in this way, such as the Aldis "Trio" or "Duo." See page 716 of the "Almanac." (2) We have no experience of the shutters you name. The "Goerz" sector is very reliable, and we advise you to pay a good price if you want a reliable shutter of this class.

TRIPOD.—A special and very good pattern is made by the Thornton-Pickard Manufacturing Co., Altrincham, Manchester. Possibly they would make another pattern in quantity.

W. E. C.—It is not easy to give a satisfactory explanation of the reversal, if, as you say, the films were developed in a machine, for the most likely cause is exposure to actinic light during development, a stronger positive image being printed from the primary negative image. We have known this to have caused the defect in other cases.

COPYRIGHT.—There is a humorous picture, consisting of two children, published and copyright in New York (America) (and, I take it, to be copyright in this country). An artist showed me another picture of the same children in an entirely different attitude bearing the same title, but with a different meaning to it. What I wish to know is:—(1) Could this picture be made copyright

here, also in America (if so, what is the best way to proceed with it, and what would be the cost?), or would it be infringing their copyright? (2) Would it be better to submit to them a rough sketch, and inquire if they would be willing to publish it provided the matter has been satisfactorily settled; but, by doing this, what I am afraid of is that they may take the idea from it, and publish it without even troubling to communicate?—COPYRIGHT.

If the second picture is a separate original work of art, certainly it is entitled to copyright, and can be registered here in the usual way at Stationers' Hall. We cannot say whose property the copyright will be, as you tell us nothing of the commercial circumstances of its production.

**PYRO-SODA DEVELOPER.**—I shall be glad of your advice in reference to the following developer:—

A.—Pyro .....	110gr.
Met. potass .....	20gr.
Soda sulphite .....	2oz.
Water .....	20oz.
B. Soda carbonate .....	2oz.
Potass. bromide .....	15gr.
Water .....	20oz.

A., 1oz.; B., 1oz.; water, 2oz. Would you please tell me if the above would give the developer in accordance with your suggestion at the end of the article on "Pyro Soda Formula" in your "Journal," December 4? If not, kindly state what would. —"H. B. B."

Your formula has its constituents in the following proportions when applied to the plate:—

Pyro .....	1.4gr.
Potass. metabisulphite .....	1gr.
Soda sulphite .....	11 gr.
Soda carbonate .....	11 gr.
Potass. bromide .....	1.5gr.
Water .....	1 oz.

which, as you will see, is a good deal too weak to give the average formula given on page 922 of our issue December 4. The stock solutions (to be used in the ratio of A, 1; B, 1; water, 2) to give this latter are:—

Pyro .....	220gr.
Potass. metabisulphite .....	40gr.
Soda sulphite .....	4oz.
Water .....	20oz.
Soda carbonate .....	4oz.
Potass. bromide .....	30gr.
Water .....	20gr.

**J. W. HART.**—You use too much water. Dissolve the one ounce of pyro in 5oz. only, using twenty drops of nitric acid. Also we imagine the water is more fully aerated than is well. Try boiling it vigorously for five minutes in an enamel saucepan, and using when cool.

**GLAZING POSTCARDS.**—(1) I find that postcards will not come off the plate glass. I followed the instructions, except adding the dissolved alum to the hypo mixture before the hypo was fully dissolved. Would this error account for it? (2) A friend tells me that the fumes of a gas-stove cause metal articles in the room to rust very quickly. Is this correct?—"ENTHU."

(1) The premature addition of the alum should not have the effect described. Improper cleaning of the plate-glasses is a very common cause of sticking. We suggest that if proper polishing with French chalk does not improve things, you should use a chrome-alum fixing bath, such as that on page 780 of the "Almanac" (1909). (2) Both the gas and the stove would have to be very bad for such an effect to be produced. A certain quantity of acid is generated where gas containing much sulphur is burnt, but gas companies now manufacture under strict supervision, as a rule, and, in any event, a gas-stove is usually so fitted that the products of combustion pass up a flue.

**TONING BROMIDES.**—(1) What toning bath for bromide postcards could I employ so as to get a tone resembling P.O.P., the same as on trade cards? (2) Is there a paper called the "Practical Photographer," and, if so, what is its price and whom published by and at what periods?—"TYNWALD."

(1) It is difficult to get a tone imitating that of P.O.P. by toning bromide cards. We should think that possibly the new "Ensyna" paper, described in our last issue, would enable you to do what you want. (2) The paper ceased publication some months ago. It was issued monthly, price one shilling.

**COLLODION P.O.P.**—I am enclosing print, which, as you see, is spotted all over. This trouble has occurred very frequently of late, in spite of every precaution being taken in washing and all operations connected with toning and fixing, etc. The paper is C.C., toned in gold bath and platinum. May say that I do the whole of my printing and toning myself, and feel sure all precautions have been taken to avoid this trouble, but have not been able to quite free myself from it. The prints are washed by hand thoroughly, and then in running water all night, and mounted with "Photo Stickphast." Any suggestion that would help free me from this trouble would be gratefully accepted by yours faithfully,—OPAL.

We should not wash so long as the eight or ten hours which you must be giving at present. One point of great importance is to dry prints quickly after mounting. Neglect of this is liable to cause the epidemic of spots you describe. We would further refer you to the articles on precautions necessary in C.C. printing, which appeared in the "Almanac," 1906, pp. 786-789.

**D. M. EDWARDS.**—Apply to Messrs. Dawbarn and Ward, Ltd., 6, Farringdon Avenue, London, E.C., for their full list of photographic works.

**MEDIUM AND OTHERS.**—In our next.

**C. NYE.**—Try Mander and Sons, Branstons Street, Birmingham, or H. Cornthwaite, Dale End, Birmingham.

**B. DOS SANTOS LEITAO (LISBON).**—The apparatus is the only one of the kind with the great range of movements (rise and swing) on the front. It is quite equal to the other manufactures of the firm, but is so distinct in design from the other patterns referred to that it can hardly be compared with them.

**SILVER STAINS.**—1. Could you kindly tell me a preventative of silver staining on negatives? 2. Would it cause them to stain by keeping them in a warm kitchen?—A CONSTANT READER OF THE "JOURNAL."

1. Use a very resistant varnish, such as the Vitri-vine, of the Vanguard Manufacturing Co. 2. No, unless the place is also damp. A warm, dry place is as suitable as any for either varnished or unvarnished negatives.

**J. O. ALDER.**—We cannot say. Why not write Mr. Pfenninger, whose address is 105, Hythe Road, Brighton?

**J. E. G. (LT.-COL.).**—The enlargement seems to us to have been unequally lighted, and to have been fogged either by light or developer. We can hardly say more without seeing the negative, but the latter would not appear to be the cause of the defect.

**BROMIDE.**—The commercial work is done, in the case of large batches, by the hypo-alum process. We know of no cheaper process.

**E. F. R.**—On the whole the specimens are fairly good. But they are not such as required in a first-class studio. The fact that you have had three engagements within the year does not look as if you gave entire satisfaction in them. At the age of twenty you must not expect the same salary as men of more mature age, of whom so many are now out of employ. Whether or not you should persevere in the photographic profession or seek some other avocation, you and your friends are better qualified to answer this question than we are. The specimens have been returned as requested.

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## The British Journal of Photography.

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## SUMMARY.

The index to "The British Journal of Photography" for 1908 and for the "Colour Photography Supplement" for the same period is presented as a supplement to this issue.

The Christmas Holidays.—The publishing and advertisement offices of "The British Journal" will be closed on Friday and Saturday next; on Monday postal business will be attended to. The editorial offices will be closed until Tuesday morning.

Royal Photographic Society. Some extracts from a document relating to the internal affairs of the Royal Photographic Society are given on page 982.

The concluding portion of the article by H. E. Ives on the Lippmann process of colour photography is given in this issue (pp. 979 to 982). Mr. Ives has worked out a substitute for the mercury mirror, which allows of the Lippmann process being practised with ordinary dark slides.

A movement has been set on foot by Mr. Reginald Craigie to establish a camera club in the west-end of London. (P. 978.)

Dry-mounting, enlarging lanterns, and a coin-in-slot camera are among the patents of the week. (P. 984.)

We refer in an editorial article to the question of agreements made between photographers and assistants acting as branch managers. We shall be glad to hear the views of any interested. (P. 978.)

Two most enjoyable functions of last week were the Houghtons' smoking concert (P. 989) and the students' supper of the Bolt Court School. (P. 992.)

## EX CATHEDRA.

### The Compliments of the Season.

We cannot allow the present year to depart without offering to our readers at home and abroad these greetings customary to the season. Universal as this exchange of salutations is throughout Christendom, it has, perhaps, much less formality in the case of the editor and readers of a technical journal than in many other relations. We are brought into direct communication with many of our readers during the course of the year; we have not failed to appreciate the marks of their friendly feelings, and we are encouraged to hope that among a good proportion such sentiments are reciprocated. And, therefore, at the time when we write "Finis" at the foot of another volume of the "B.J."—but not in any sense by way of indication of any cessation of its activity and independence as a photographic journal—we are glad to take the occasion of wishing all our good friends a prosperous and profitable year during 1909.

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### The Index to the 1908 "B.J."

It was a lady in one of Mr. Barrie's plays, if we remember rightly, who presented her husband with cigars of a new brand, remarking that they were larger than those he was smoking, a point of view wherefrom a contemporary once elected to regard an index to its annual volume, with the laudable object of discovering some respect in which it might be said to possess distinctive excellence. Our own aim being to make the index a key to the contents of the volume, we have further done all that seemed possible to reduce the weight of the key, to give it the handiness of that of a Yale lock in preference to the bunch jangled by a Wilfrid Shadbolt. And so, if the present index is less in size than others, we crave your patience, good friends, that you first discover wherein it fails to point to various items contained in the volume now closing.

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### Index by Subject.

As we pointed out last year, it is advisable that an indexer should indicate one or two rules to which he has adhered, and which a user of the index may bear in mind in looking up an item. An important one is to bring all the items on a given subject under one heading, and to attach cross references to this main section to any others which cannot be brought readily into line. Thus, "Screen Plate Colour Processes" are indexed as "Colour Photography—Screen Plate" in the main section, and separate references attached to entries such as Autochrome, Thames, etc. On the other hand, where the sub-division of a subject turns out to be larger than the subject itself, a separate series of items is transferred to another part of the index. This has been done in the case of "Cameras,

Reflex," which are found under "Reflex Cameras" to the number of twenty-one entries. The reader will thus see that the guiding principle to the index is that of subject. The essential descriptive feature of an article or paragraph, such as "Plate," "Camera," "Lens," or "Developer," is that under which it should be looked for in the index. Thus "Mawson Gladiator Plates" will be found under "Plates," not under "Mawson." In short, the entries in all cases fine down from the general to the particular.

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#### **A Camera Club in the West End.**

We understand that Mr. Reginald Craigie has been interesting himself in the formation of another camera club, and if sufficient support is forthcoming suitable premises in the West End will be secured, which will comprise smoking-room, studio, enlarging-room, arc-light printing-room, workroom, and several dark-rooms. The use of these will be free to members, with the exception of the studio, for which there may possibly be a trifling charge. No liability will attach to membership beyond the annual subscription, which will be three guineas, two guineas, and one guinea for town, country, and foreign members respectively. No entrance fee for original members. An influential committee is being formed. Those who are prepared to support such a scheme and to become members should communicate at once with Mr. Reginald Craigie, Blenheim Club, King Street, St. James's, S.W.

#### **PHOTOGRAPHERS AND ASSISTANTS' AGREEMENTS.**

THE question of radius agreements by which employees are bound under certain restrictions has once more come into prominence. In our last issue is a letter of a correspondent, who signs himself "Observer," calling attention to an article in the "Daily News" of some few weeks back. Again, in this week's issue of our contemporary, the "Pharmaceutical Journal," there is another on the same topic, in which complaint is made that employees are often prohibited from taking over or starting a business, or from entering the service of another employer in the same line of business within a certain defined radius. The article in the last-named journal has naturally reference mainly to chemists and druggists, but assistants who have the management of branch establishments are much in the same position as are operators and managers of branch photographic establishments. It often happens, in both cases, that after a couple of years or so they become better known to the customers than are the principals themselves, for the latter may not even be known at all in the business. It is for this reason that restrictive agreements have been long in vogue. Such agreements in various trades have in the past led to much litigation in the law courts, but in recent years little has been heard of these actions.

Radius agreements—very general with reference to the sale of photographic businesses—are usually to the effect that the seller will not open, carry on, or be connected with any other in the same or similar line within a stipulated distance, so it will be seen that the conditions in the sale of a business or the engagement of an operator are pretty much on all fours with each other. What has really brought this subject into some little prominence just now is a case which was before the courts a little while ago:—A young man was engaged as a junior reporter on a provincial newspaper, and he signed an agreement at the time to the effect that he would not work for any other journal in the district. However, he left this employment and entered the service of a rival journal; whereupon an action was entered against him for breach of contract, and the plaintiffs gained the day. This judgment was

appealed against, with the result that it was reversed, but on a legal technicality only. The agreement was declared not binding, inasmuch as the defendant was not of full age at the time he became a party to it. Had it not been for that there is a great probability that it would have held good.

It goes without saying that the crux of the radius agreement question lies in the fact of the manager of a branch establishment becoming, as he is bound to do, so identified with the business that in the event of his setting up in business for himself or going to another studio, he could draw many customers after him. It is with a view to meeting such cases as this that many photographers, when they engage an operator or manager, make it a condition that in the event of his leaving he shall not, within a given time—say, two years—commence business for himself or enter into partnership with, or the service of, another photographer within a certain radius under a certain penalty. In this way the employer is protected and no injury is done to the employee; he has signed the agreement and knows full well the conditions under which he takes the appointment.

It is argued by some that these radius conditions are arbitrary and are an undue restriction of trade by preventing competition, which is against public policy. Such agreements, however, are but fair, supposing they are framed in a reasonable way, though frequently they are not. We have at times had sent for our opinion thereon copies of agreements between photographic employers and employees which have been altogether one-sided, and for that reason would have been held invalid if contested in a court of law. One which we call to mind was to the effect that the operator, on leaving, was not to carry on business, or be employed by another photographer in three adjoining counties—no time limit being mentioned. It need scarcely be mentioned that such a contract as this was unreasonable, and therefore invalid, as it was unquestionably an undue restriction of trade.

Another case in no way connected with photography comes to our mind. Yet we may comment upon it as being of interest to photographers as well as to assistants. A firm of drapers and house furnishers sought an injunction against a former manager to restrain him from carrying on business with his wife, he having signed an agreement not to enter the service of any person or firm, or to enter any business in opposition to his late employers within a radius of ten miles of Lancaster, and in the event of his doing so he agreed to forfeit a year's salary (£120). He was then carrying on business with his wife as a draper within a couple of hundred yards from his late employers' shop. The defence to the action was that the agreement was void because it was too wide, being an undue restriction of trade and against public policy. The Court held that the covenant was greater than was necessary to protect the plaintiffs' interests, and that the agreement, therefore, was invalid and could not be enforced. We merely refer to this case to show that an agreement may be so wide that it may defeat the end that an employer has in view.

Many agreements are drawn out by photographic employers themselves, and they often make them so unreasonable that for this very reason very many of them are not worth the paper they are written upon, if contested, but in some cases they may serve to intimidate the employee for the time being against taking employment with a competing photographer. And that is an evil which we would wish to see dispersed from the photographic profession, to which end we shall be glad to hear the views of readers of both classes, and to comment upon such suitable cases as they may put before us.



## AN EXPERIMENTAL STUDY OF THE LIPPMANN COLOUR PHOTOGRAPH.

### III.

#### The Production of White.

On Lippmann's theory, white is produced by reflection from particles of silver thickly and irregularly distributed through the film. Regularly spaced laminae would be entirely absent. Such a deposit would be formed in a perfectly isochromatic emulsion provided the wave-lengths of the acting light varied between wide limits and the individual silver grains were of appreciable size. If, on the other hand, the acting light varied between rather narrow wave-lengths limits, as from red to blue, the size of the silver grains being negligibly small in comparison to the shortest wave-length, a rapidly damped standing vibration of wave-length equal to the mean incident wave-length would result. In Fig. 3 is given the standing wave form due to light from red to blue, in Fig. 4 the form when the incident light is from infra-red to ultra-violet and the silver grain coarse.

Lippmann pictures have been made exhibiting beautiful whites, yet general difficulty seems to have been experienced. This is partly due probably to the difficulty, with present known sensitisers, of securing isochromatism between wide limits. Several other theories have been proposed and other experimental methods tried to produce white. Lehmann concludes that the greenish appearance sometimes found in whites on short exposure is due to laminae formed in the manner described above. He corrects this by using a screen with three maxima of transmission—red, green and blue. On short exposure whites will be reproduced as a mixture of these three colours. A serious objection to this method is that colours falling in the minima of transmission will be poorly reproduced.

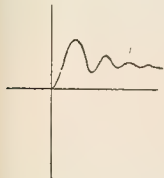


Fig. 3.

Standing waves formed by white light from red to blue, as recorded in fine-grain emulsions.

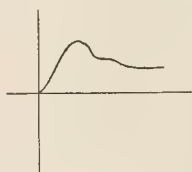


Fig. 4.

Standing waves formed by white light, from infra-red to ultra-violet, as recorded by coarse-grained emulsions.

Cajal from his work concludes that white is due to the formation of a mirror-like surface on the film, and that this can be produced only by the use of amidol as an intensifier. The mirror-like appearance presented by the high-lights of Lippmann pictures readily lends itself to the idea that the surface is a silver mirror. That that is possible only when the picture is intensified with amidol is, however, a conclusion unsupported by other experimenters and contradicted by the undoubted production of white by Neuhaus and others who did not use this intensifier.

The possible modes of production of white are therefore three. First, by a general diffuse deposit in an isochromatic emulsion. Second, by forming laminae corresponding to red, green and blue. Third, by producing a mirror surface. The second method was not tried in the present investigation, as being obviously a compromise.

Attention was therefore turned to producing an isochromatic emulsion by combinations of colour screens and sensitisers. Numerous sensitisers were tried; of these much the best was Isocol, in that it imparts a sensitiveness free from gaps or maxima. The sensitiveness given by it extends from deep red to blue and violet, gradually increasing toward the latter. Absorbing solutions of wool black, cobalt sulphocyanide and iron sulphocyanide reduced the action in blue, green, and yellow to that in deep red and gave very satisfactory isochromatic action from red to ultra-violet.

Plates similar to those used in the study of monochromatic colours were prepared and exposed to white, at first with disappointing results. Not only was there practically no light reflected from the

partially exposed parts, but the mirror-like high-lights were absolutely black. By intensification with amidol the plates could be made to reflect considerable light. This led to the question whether the intensifier did not merely increase the size of the grain, and whether this might not be done in the emulsion. That the grain was too fine to give whites by diffuse reflection was also indicated by the fact that a fogged plate appeared black and not white by reflection.

A series of emulsions were then made up containing increasing quantities of silver. These were exposed without the mercury mirror and the character of the deposit examined. It was at once apparent that while a very fine grain reflected diffusely very little light indeed, a coarser grain gave a strong white reflection which in the high-lights became mirror-like. The brightest whites were given by an emulsion containing four times the silver content of that used for pure colour work, or twice that used by Lippmann and others. This emulsion used with the mercury mirror gave perfect white. The theory that diffusely distributed reflecting particles formed in an isochromatic emulsion produce white is therefore supported.

As to the theory of Cajal that white is given only by a mirror-



Fig. 11.

like surface, this was not supported by the results here obtained. The whites were quite perfect in the partially exposed parts. In fact, it is the writer's opinion that the formation of the mirror appearance indicates rather the point where the white ceases to be good. A very slight exposure beyond this point, giving the clear yellow by transmission, results in the white becoming black. Everything is in agreement with the view before advanced that the mirror appearance is due to the merging together of the separate particles with resulting loss in reflecting power. White will be given only so long as the particles are separate, being similar therefore to the white given by powdered glass or other substance transparent in the fused condition.

Since the range of sensitiveness of the emulsion is at best rather limited, and since the grain must be kept small enough to render all colours ordinarily met with, it would not be surprising if some tendency should exist to form laminae corresponding to the mean wave-length—i.e., green. No appearance of green on under-exposure of whites was observed. Before mounting the prism the film had an orange tinge which turned to greenish on increasing the angle of incidence. The explanation of this is given by Fig. 4. Although complete laminae corresponding to green light are not formed the deposit of silver

increases in density from the surface to the point where the first lamina would form. Rapid damping prevents the formation of more surfaces. There is therefore a slight gap between the surface and the heavy deposit, forming a single thin film. On mounting the prism the upper surface is virtually destroyed. The orange colour is what we should expect from Wiener's explanation of the shift of all colours towards red as long as the surface reflection is active.

Sections supported these conclusions. Laminae were absent: in their place a structureless deposit, increasing in strength toward the surface, reaching a maximum a short distance from it, the maximum corresponding to the distance in of the first lamina due to green light, as near as could be determined. This appearance is shown in Figure 11.

### Photography of Natural Objects.

To photograph natural objects, conditions must be such as to give whites and colours of small spectral purity. This is secured by using a fairly coarse grained isochromatic emulsion developed with a developer giving a transparent highly reflecting deposit.

For experiments in this direction a number of different emulsions and modes of preparation were tried. Good results were obtained with very coarse grained ones, but experience showed the proportions of silver bromide and gelatine in most general use to be probably the most satisfactory. Little choice exists between the several modes of preparation published. The silver nitrate may be digested with part of the gelatine, dissolved in water and added, before mixing, to one part of the gelatine; dissolved in water and added to the gelatine containing the potassium bromide; or added in dry powdered form to the latter. The quantity of silver bromide is double that found best for monochromatic light reproduction.

To secure isochromatism, Isocol as a sensitiser, with the absorbing solutions above given, or, as the sensitiveness imparted by Isocol is very fugitive, a more permanent combination of pinacyanol and pinavdol, with a screen of wool black, was found to answer fairly well.

The only point in the manipulation not yet described is the choice of film thickness. The standing wave structure being shallow great thickness is no object. Speed, too, is gained by small depth. The thinnest film is obtained by flowing the warm emulsion on and off glass plates warmed to the same temperature. This gives a thickness of about 1.400 mm., on which most colours reproduce satisfactorily, as far as the eye can tell. The resolving power is small, of course, and some anomalous results are to be expected. Purple is about the only colour of any complexity often met with, and the film should be thick enough to resolve its two maxima well. The most satisfactory thicknesses was obtained by flowing the emulsion on and off glass plates at room temperature, about 1.200 mm. Exposures with  $f/5.6$  on sunlit objects ranged from  $1\frac{1}{2}$  to 5 minutes, according to sensitisers, etc.

With emulsions made up and used in this way good colour rendering was obtained. The sum total of the results on photographing natural objects has been to vindicate the procedure indicated by theory and carried out by Lippmann. The deviations from that procedure by Lehmann and Cajal seem unnecessary to secure successful results.

The difficulties noted by all workers with the process as applied to photographing natural objects were found to be very real. They are, in brief, the great dependence of success on correct exposure and development. Very slight deviations will make the colours either weak or diluted with white. This is due to the laminae being few and close to the surface. With pure colours a certain amount of dlogging up affects but a small part of all the laminae; in diluted colours, practically all. A larger proportion (twice as much) of bromide in the developer than was used for pure colours was found to materially help the brilliancy of these colours. A larger percentage of failures is to be expected in any process of colour photography than with black and white, since the eye is more sensitive to errors of treatment where colour occurs. The sensitiveness of the Lippmann process to slight deviations from correct conditions is, however, much greater than the three-colour method, and good results only come from repeated patient trials. When obtained they are extremely dependent on correct viewing conditions to appear to any advantage. The colours, being formed for the most part by two or three laminae, backed up by a diffuse deposit, great care must be

taken to exclude all light, except that coming in the direction to be regularly reflected by the laminae. Light from other directions is not sent to the eye by the laminae, but is by the diffuse deposit, causing a drowning out of the colours with white light. By making the film excessively thin so that the laminae are formed, but not the deposit behind, the colours are more brilliant and less affected by conditions of illumination. Colours of any complexity, such as purple, however, suffer.

### A Substitute for the Mercury Mirror.

One of the obstacles to wide use of the Lippmann process is the necessity for a mercury mirror. Each plate-holder must be arranged as a tank, into which, before exposure, mercury must be flowed. Several attempts have been made to obtain substitutes for the mercury. Krone<sup>14</sup> dispensed with it altogether, relying on the gelatine-air reflection, but the colours are then dull and unsatisfactory. Lehmann has flowed the emulsion on a collodion coated polished metal plate. After exposure composite film could be stripped and placed on a glass plate. Pure colours, spectra, etc., can be so reproduced, but those whose lamina system is close to the surface cannot, since that space is occupied by the collodion. Placing a silver mirror in close contact with the gelatine has the same objection.

The writer has recently discovered a substitute for the mercury mirror, of a form which permits the plates to be handled and used precisely as ordinary dry plates.

The procedure is as follows:—A glass plate is heavily silvered and then flowed with a thick solution of celluloid in amyl-acetate. When this varnish is dry, the plate is placed under water; this slowly works under the coating of celluloid, lifting it from the glass, and bringing with it the silver. This flexible silver mirror is immediately laid, silver surface down, on a wet Lippmann plate, and allowed to dry there, a necessarily somewhat slow process. When dry the gelatine film has the silver surface in optical contact with it. The plate may then be exposed at any time in an ordinary plate-holder. After exposure the celluloid film is stripped from the gelatine, taking with it most of the silver, the plate developed, and after thorough washing the remains of the silver removed with a tuft of wet cotton.

This substitute works perfectly for all types of colours, and, except in the laboratory, where a convenient dark-room makes the use of the mercury mirror simple, facilitates the practical working of the process. Especially would it do so for the photographer who buys his plates ready made. In that case the only difference between ordinary and colour photography would be the longer exposure in the latter case, and the necessary mounting of a prism on the picture, and, of course, the impossibility of copying.

A difficulty which has proved rather troublesome is that some of the best sensitisers are apt to lose their effect during the slow drying. Erythrosin acts perfectly; pinacyanol and pinaverdol are apt to fail. This can probably be overcome, either by different choice of sensitisers, by so treating these that slow drying does not harm, or perhaps by finding some more porous substance than celluloid which, acting the same in other respects, will permit quick drying. Collodion has been tried, but has not been found to strip off the gelatine well.

### Three-Colour Interference Pictures.

The capacity of the Lippmann film to reproduce pure spectrum colours easily and with certainty adapts it for an application to the three-colour process, published by the writer some time ago.<sup>15</sup> In the synthesis of the properly taken records of the three-colour sensations, spectrally pure red, green and blue light are called for. The Lippmann film furnishes an unequalled means for securing these.

The method used was to place before the plate an opaque-line screen, having opaque spaces twice the width of the transparent. The three positive colour records were projected one after the other with their appropriate coloured lights, the line screen being moved each time the width of a clear space. The result was similar to the Joly picture, consisting of alternating lines of red, green and blue.

In the first pictures so made the coloured lights were obtained from sunlight by a monochromatic illuminator, but satisfactory purity and shortness of exposure were not secured. In experiments since carried

<sup>14</sup> "Darstellung der natürlichen Farben durch Photographie, 1894."

<sup>15</sup> "Physical Review," January, 1907, p. 103.



out the line screen was removed from contact with the plate, as this necessitated a narrow source of light, and placed in contact with the three-colour positive, an image of the screen and positive being formed by a Planar lens of fine defining power. For light sources the cadmium red line ( $\lambda$  6439), the magnesium green ( $\lambda$  5170), and the lithium blue ( $\lambda$  4602) were found most available, obtained in the manner described in a following section.

The three-colour interference pictures so made are of great brilliancy and beauty, especially if the hydroquinone development and bleaching are used, when the component colours are of practically ideal purity. Quite long exposures are necessary, amounting under the best conditions to a total of fifteen or twenty minutes. This time can probably be materially reduced. The pictures are, however, far more easy and certain, besides being more brilliant, than the regular Lippmann picture. They constitute an excellent means of carrying out the three-colour principle, and have the interesting property of owing their colour to the direct action of light and not to pigments or coloured glasses as do the other three-colour schemes. They can besides be duplicated indefinitely.

### Sensitisers.

During the progress of the work various colour sensitisers were used, depending on the portion of the spectrum photographed. The list included erythrosin, cyanine, pinacyanol, pinaverdol, pinachrome, isocol, homocol, and dicyanine. For bathing 1-100,000th solutions in water were used, without ammonia; in the emulsion about 1 cc. of a 1:1,000 alcoholic solution to 100 cc. of emulsion. Some observations of their behaviour with these very slow emulsions are of interest.

In general it was found that bathed plates acted more cleanly and brilliantly, two sensitisers, isocol and homocol, acting very poorly in the emulsion. Ammonia was not used, as it has a tendency to make the plates ripen, with consequent great increase in the grain. Bathed plates were, however, unsuitable for a large part of the work, since the sensitising action extends only a short distance into the film, even with long bathing. Figure 10 shows a section of a plate bathed fifteen minutes in a 1-100,000th solution of homocol. (Page 965, issue December 18.)

For green all of the sensitisers are good except cyanine, dicyanine, and pinacyanol. For the red pinacyanol is far and away the best, the action of cyanine not extending far enough down, and that of dicyanine being too feeble. The great difficulty has been to sensitise for the light blue. On ordinary plates there is apt with many sensitisers to be a minimum in the blue-green near  $\lambda$  5000. On these slow plates this gap is in the blue. This is owing to the natural sensitiveness of the plates only extending to the violet, while with fast plates it goes down to the blue. The descending curve of green sensitiveness imparted, say, by erythrosin meets the descending curve of the emulsion's own sensitiveness, in the one case in the blue, in the other in the blue-green. This was verified by greatly reducing the amount of sensitiser, when the weak blue-sensitiveness was stronger than the imparted sensitiveness in the blue-green. This behaviour of the plates makes sensitiser combinations, such as pinacyanol, homocol, and pinaverdol,<sup>16</sup> which fill the blue-green in ordinary plates, inefficient here. A blue sensitiser, not needed for fast plates, is really required with the Lippmann plates. Isocol was the only sensitiser found which gave a sensitiveness free from gaps.<sup>17</sup>

As to the keeping qualities of the sensitised plates, it was found that the erythrosin-cyanine or erythrosin-pinacyanol emulsion plates kept well, at least for a week or two. Bathed plates lost their sensitiveness quite rapidly; isocol bathed plates in four or five hours, rendering them useful only for quickly carried out experiments. Pinaverdol in the emulsion in one case lost its action in four days. Pinacyanol and pinaverdol emulsions, which dried slowly, as those prepared for use with the silver-celluloid mirror, sometimes showed complete loss of colour sensitiveness.

### Sources of Monochromatic Light.

In the study of monochromatic light reproduction and in making three-colour interference pictures difficulty was experienced in finding suitable monochromatic sources. As the plates are very slow, and large surfaces were illuminated, sources capable of giving a large quantity of light for a long period were essential. Many

ordinarily used sources were useless, either because of their small intrinsic brilliancy, or because of their too short life. The spark, the vacuum tube, the flame, arcs between easily melted metals, were among these. Another requisite was that the line used should not be so near other lines as to render its separation impossible by means of absorbing screens; resolution by means of a prism causing too much loss of light.

The following list of the most satisfactory sources found is given as of possible use in other lines of work where great intensity for a long period is required. It is by no means complete, since search was stopped when a satisfactory one for any colour was found. Where obtainable, the best sources are undoubtedly the Hereaus fused quartz lamps and the mercury vacuum arc. The open arcs here tested are, as a rule, more brilliant and are easily manipulated. Carbon was used uniformly as negative electrode.

*Red.*—Lithium 6708. Lithium sulphate in cored carbon.

Cadmium 6439. Cadmium ordinarily burns with dense brown fumes which form a cake of brown oxide around the rapidly melting electrode. This may be avoided by melting the cadmium into a copper tube. The copper and cadmium lines appear together, but the red cadmium line is distant from the copper lines. A current of not more than four amperes is best.

*Orange.*—Lithium 6103. Lithium sulphate in cored carbon.

*Yellow.*—Sodium 5893. Sodium chloride in cored carbon.

*Green.*—Thallium 5360. Metallic thallium in cored carbon.

Magnesium 5162, 5172, and 5167. Magnesium powder in cored carbon.

Silver 5460 and 5209. Silver, which in rods melts in a few seconds, burns steadily and brilliantly if a thick wire is placed in a cored carbon. Wire of 2 mm. diameter in a carbon of 10 mm. diameter gave excellent results.

Cadmium 5085, obtained from an alloy of tin and cadmium in a cored carbon, one part by weight of cadmium to six of tin.

*Blue.*—Lithium 4602. Lithium sulphate in cored carbon.

Solutions of various aniline dyes separated most of these clearly. Copper chloride was found useful when either end of the spectrum was to be absorbed. With increasing concentration its absorption moves in, maintaining constantly a sharp boundary. Care must be taken that the temperature of the solution does not rise while in use, as this causes widening of the absorption.

### Relative Position of Reproduced with Reference to Incident Wave-Length.

Owing to the partial solubility of the gelatine, and perhaps the washing out of unaffected silver bromide, the films show a general tendency to shrink in development and washing. This causes the colours to shift toward blue. This tendency is much more marked when the plates are fixed with "hypo." In most of the work fixing was dispensed with, Lehmann having found the pictures to keep perfectly without. This shift is much more marked with pure colours than with mixed, the interlaminary spaces being freer of deposit. This is well shown by photographing a continuous spectrum, using a rather wide slit, beside a line spectrum; the lines are reproduced as noticeably of shorter wave-length tint. If the slit is then closed up to extreme narrowness and exposure made, the spectrum colours agree in tint with the monochromatic lines.

Bleaching with mercuric chloride on the other hand swells the film; the two processes of fixing and bleaching therefore tend to neutralise each other.

In working with very thick film, a spurious "Doppler effect" frequently occurs. The surface portions of the film wash away more than the deeper, so that a diffuse band of light appears on the blue side of the sharp line.

### Characteristic Curve.

In the photographic plate the density by transmission varies nearly directly with the time of exposure. This is because the deposit of silver is in logarithmic relation to the time of exposure, and the increase of opacity of an absorbing medium also follows such a law. When the deposit is viewed by reflection this relationship between exposure and intensity does not hold, the relation becomes logarithmic instead of linear. The exact relationship is complicated by absorption, which tends to hasten the "saturation point." A further complication arises in the Lippmann process with very short exposures owing to the necessity for the reflecting particles to have a certain size and a certain closeness to each other to

<sup>16</sup> R. J. Wallace, "Astrophysical Journal," December, 1907.

<sup>17</sup> The sensitisers used were of the following makes or sources:—Pinacyanol, pinaverdol, pinachrome, dicyanine from Meister Lucius and Brünig; isocol, homocol from the Bayer Co.; cyanine from Eimer & Amerd, New York; erythrosin from F. A. Reichardt, New York.

form a regularly reflecting surface. This was observed in a plate one-half of which was exposed behind a coarse opaque grating with lines covering two-thirds of the surface. The part behind the grating was exposed to nearly full exposure, the part not covered exposed until, when held at arm's length (where the lines were no longer visible), the two parts appeared of exactly the same density. By reflection the portion only partly covered by the full exposure was much more brilliant than the portion completely covered by the shorter exposure.

These several effects tend to shorten the scale of gradation of the plate, unfortunately, because the eye is more sensitive to this defect in coloured than monochromatic pictures.

### Different Rates of Development for Different Colours.

In developing three-colour negatives where all three images are on one plate it has been observed that the three images develop at different rates, although the exposures and the final densities are correctly proportioned. The Lippmann film exhibits the effect clearly. In making three-colour interference pictures the colours were found to depend considerably on the time of development. With short development the green and blue predominated, with longer the red became stronger, the final picture showing, however, the relative exposures not too long for blue and green. Trouble from this effect was easily avoided by keeping the time of development constant and regulating the exposures for that development.

### Summary of Results and Conclusions.

*Reproduction of Monochromatic Light.*—A smaller amount of silver bromide than usually employed gives purer reflected light from the Lippmann film.

Increase in thickness beyond about 1.200 mm. causes no corresponding increase of purity so long as pyrogallie acid development is used.

The standing waves are formed throughout the thickness of the film; the non-formation of laminae is due to the surface action of the developer.

Other developers, such as hydroquinone, develop evenly through the film. By bleaching the deposit formed by their use films are obtained giving purer reflected colours than heretofore obtained and increasing in resolving power with thickness.

*Mixed Colours.*—Films developed with pyrogallie acid have small capacity for rendering complex structure, but luminosity values are well preserved if the grain is not too fine or exposure too long.

With hydroquinone and bleaching, complex radiations are produced with a fidelity dependent only on the practically attainable thickness of film. This resolving power is at the cost of luminosity.

*White.*—White is produced by the action of white light on fairly coarse-grained rigidly isochromatic emulsions.

*Natural Objects.*—The colours of natural objects are well reproduced by emulsions suitable for giving whites and mixed colours, i.e., of somewhat coarser grain than is best for pure colours.

Pictures of natural objects are much more difficult to obtain than those of pure colours, because of the shallowness of the standing wave structure.

*Substitute for the mercury mirror.*—A means has been found of affixing a silver reflecting surface in optical contact with the film, enabling the mercury mirror to be dispensed with.

*Three colour interference pictures.*—The Lippmann film, by reason of its capacity for reproducing pure colours, is well adapted to application to three colour photography.

In conclusion, I wish to acknowledge my indebtedness to my father, Mr. Frederick E. Ives, whose lifelong experience with photographic processes has always been freely placed at my service. I also wish to thank Professor J. S. Ames for the kindly interest he has shown in the progress of the work.

HERBERT E. IVES.

*THE PHOTO-SECESSION.*—An exhibition of photographs by the members of the Photo-Seceession has been held at the Little Gallery of the Photo-Seceession, 291, Fifth Avenue (between Thirtieth and Thirty-first Streets), New York, from December 8 to December 30.

### A MADMAN UPON THE FELLOWSHIP OF THE ROYAL PHOTOGRAPHIC SOCIETY.

THE Fellowship of the Royal Photographic Society is a matter which has caused much heartburning. There are some who think that the four coveted letters will cease to be a distinction if they are awarded on terms too easy. These worthies consider that a thorough examination should be the ordeal by which candidates for the honour should stand or fall, and that even this should be supplemented by a scholarly thesis implying original research. There are reasons for believing that candidates for the Fellowship have allowed the uncertainty of election so completely to oppress their minds as to impair their powers of connected thought; at least, that seems to be the only explanation of the existence of a document, the writer of which, it is lamentable to observe, is in a state of utter mental aberration. By what motives he has been inspired to string together a catechism, which is evidently advanced as a model examination paper, we will not seek to divine, yet it would seem to be our duty to make some extracts from the manuscript which bears these painful evidences of a wandering mind:—

Q.: What do you understand by a "convertible Cooke lens"?

A.: A cook who lends herself to general housework also, when required to do so.

Q.: Describe the "Primo-plane" variety.

A.: That is obviously one who stands in the first rank of unprepossessingness.

Q.: What are Tripods?

A.: Odds and ends from the Tripe-shop.

Q.: How is the term "Uto" applied?

A.: It is applied to paper used presumably for corn-plasters.

Q.: What are your views as to professional practice at sea-side resorts?

A.: I am of opinion that "stripping," "exposure" and the "combined bath" should be prohibited, and that the use of a "hiding-tent" should be made compulsory.

Q.: How would you prevent "frilling"?

A.: By insisting upon the utmost plainness and decorum in the attire of females; especially such as are over-developed.

Q.: What do you know of photography as practised on "The Turf"?

A.: "Dry mounting" is unknown; but "backing" is universal and does not slow the horses. On the Turf, the "plate" is usually the objective, though "cups" and "steaks" are used for the purpose occasionally.

Q.: Explain the terms "Una," "Rex," "Adon," "Tella."

A.: Una is a lady with a swing-back caused by the oscillations of Rex, the king of beasts, upon whom she rides. Adon refers to the clothes she 'ad on once. Tella of her impropriety is what nobody dare do.

Q.: What do you recommend as a rest-cure for over-worked photographers?

A.: Lying in fallowfields, listening to the sanger-shepherds and emulating their imbibition process.

Q.: What is "Falloroll"?

A.: I should take it to be the words of a chorus carolled by counter-men when sales are effected.

Q.: What does the trade name "Tress" signify?

A.: Fittingly enough it is the name of a 'air-brush pump.

Q.: What do you recommend as a remedy for congestion in the case of a person "bolting silk"?

A.: "Flash powders" until the patient is relieved.

It will be seen that the poor demented has already got right away from a semblance of technicality; but he goes further yet:—

Q.: Who are your favourite heroes in history?

A.: Wellington and Ward Beecher.

Q.: What are your favourite retreats?

A.: "Barnet" and "Ilford."

Q.: What are your politics?

A.: "Imperial."

Q.: State your favourite brands.

A.: "Red Seal" and "Black and White."

Q.: What is your opinion of the recent weather?

A.: Wrotten and Rainright!



Q.: How would you describe the foregoing paper of questions?  
A.: A Zschokke.

His son was much astonished at finding the following table written upon a leaf of his summing book:—

40,000,000 grains=1 autochrome.  
12 autochromes=1 satisfactory transparency.  
2 satisfactory transparencies=1 unscrupulous enthusiast.  
6 unscrupulous enthusiasts=1 exhibition.  
2 exhibitions=many astounding critiques.  
Many astounding critiques=1 hollow reputation.

It is remarkable how sometimes a disordered mind may stumble upon the truth. In the matter of theses he had some noteworthy ideas, as may be seen from an ideal syllabus prepared by him. We cannot refrain from quoting:—

"Mucilage in Art," by J. C. S. Gummery.  
"The Improvement of the Negative," by T. Born Faker.  
"British Vermin," by Bugless English.  
"Stagnation in the Brine Tub," by T. E. Freshwater. Demonstration by Drinkwater Butt.  
"Oil, Toil, and Pignoil," by John H. Smear.  
"The Behaviour of Children Before the Camera," by E. T. Scolding, assisted by Rev. F. C. Damberty, MA!  
"How to be Happy though Domestic," by Be Gay Milk-in-son, supported by Ernest Marriage.  
"Photographic Hardware," by F. Mardun Tincan.  
"No-cap Exposure," by Dr. S.E.E.K. Sneeze.  
"Heroism in Hand-camera Work," by F. J. Mal de Mer.  
"Our Wayside Inns," by Chas. H. Soak-den.  
"The Use of the Handkerchief in Bromoil Printing," by C. Well-worne Wiper.  
"Sheep's Blood as a Colouring Agent," by E. Sang-er Shepherd.  
"Photography in Winter," by H. Snowed-on Sward.

The fine catholicity of taste shown by these titles proves how fine an intellect has here fallen into ruin.

#### TONING AND VARNISHING OF BROMIDE PRINTS.

A FORMULA for the toning of bromide prints, which, in the newly-issued volume of Herr Fritz Loescher, reviewed on another page, is recommended for giving much purer whites than the ordinary uranium formula, is as follows. Four solutions are prepared:—

A. Lead nitrate .....	1 gm.
Potass ferricyanide .....	3 gms.
Water (distilled) .....	50 ccs.
B. Uranium nitrate .....	1 gm.
Water .....	100 ccs.
C. Citric acid .....	10 gms.
Water .....	50 ccs.
D. Ammonium chloride .....	1 gm.
Water .....	100 ccs.

To form the toning solution the following proportions are mixed:—

A .....	25 ccs.
B .....	100 ccs.
C .....	100 ccs.
D .....	20 ccs.

The bath gives red chalk tones; for brown tones, the D solution is omitted, and the proportions given above taken of the first three. A further advantage of this formula is that the prints do not lose intensity on washing, and this process can therefore be thoroughly carried out.

The use of varnish and encaustic pastes for bromide prints has the advantage of imparting to the finished print much of the rich luminous appearance which it possesses in the wet state, and, moreover, in the case of a print toned by a process which is not above suspicion, it undoubtedly prolongs the life of the print. Herr Loescher in his book recommends the use of a commercial encaustic paste; in this country he would doubtless have pointed to the "Lustralene," of the Vanguard Company, which is a standard article of this kind. He further advises the use of a shellac varnish, applied with an atomiser, but not to the extent to give the print a matt surface. A further suitable varnish is a shellac solution, containing copaiva

balsam. A fairly thick solution of white shellac is prepared, a little copaiva balsam added, and the mixture largely diluted with absolute alcohol before being applied to the print with a broad camel-hair brush.

Especially for the treatment of mounted prints the so-called "Zapon-lack," sold specially for the purpose by the Leto Photo-Materials Company, may be advised, since it does not injure the mount in the slightest, and may be repeatedly applied.

#### THE NORTHERN EXHIBITION.

THE following is the programme of lectures to be delivered at the forthcoming Northern Photographic Exhibition to be held in the Manchester City Art Gallery from January 7 to 27:—January 7, "Snow and Ice Scenery in Switzerland," C. Thurstan Holland; January 8, "In Search of Sunlight," E. Rimbault Dibdin; January 9, "Afar in the Fatherland," W. L. F. Wastell; January 11, "Japan and the Japanese," Dr. Murray Cairns; January 12, "The Foot Hills of the Eastern Alps," J. Dudley Johnston; January 13, "Leaves from Nature's Book," J. W. Wade; January 14, "Chetham Hospital: Its Founder and Site," J. J. Phelps; January 15, "Picturesqueness of the Commonplace," Rev. Henry W. Dick; January 16, "The Camera and the Sea," F. J. Mortimer; January 18, "The River Mersey from the Moors to the Sea," Dr. John W. Ellis; January 19, "Dutch Pictures," Arthur Marshall; January 20, "Gorges of the River Ardèche," G. E. Thompson; January 21, "Rothenburg and its Festival Play," James Shaw; January 22, "Sunshine and Snow in the Bernese Oberland," S. L. Coulthurst; January 23, "The Thames Valley" (illustrated with Autochrome slides), J. McIntosh; January 25, "Some Picturesque Midland and Cotswold Villages," W. A. Clark; January 26, "Land of William Tell," F. W. Parrott; January 27, "Westminster Abbey," S. G. Kimber.

## Exhibitions.

#### THE MARION PRIZE COMPETITION.

The prize prints and others (to a number in all of 83) selected from the recent competition organised by Messrs. Marion and Co., Ltd., are now on view at the offices of the "Amateur Photographer," Long Acre, where they form an extremely interesting exhibition. They do this, not so much from their pictorial quality, which is very variable even in the class assigned to work of this character, but from the particulars given in the catalogue as to the production of the prints and of the negatives from which they were made. The custom of naming the process in which a negative has been printed has so largely gone out of fashion at photographic exhibitions that the worker whose interest chiefly centres on the making of technically excellent prints of distinct quality necessarily finds little to interest him in even a leading show, since information as to ways and means is denied him. In the present instance, however, he has the advantage of learning the precise brand of paper employed, and the technical quality of almost every print on the walls is a testimony to the merits of the various manufactures of the firm of Marion in the way of printing papers and plates. It is easier, naturally, to speak of the former, and in particular we would signalise the effective use made of the various varieties of the "Marion" collodio-chloride paper and the "Marion" matt albumen; the latter is a brand of printing which deserves to be better known. Mr. Cavendish Morton's work is almost all in the collodio-bromide papers, and very fine technical printing it is, quite apart from its pictorial merits, on which it is not necessary for us to enlarge. The competition, it is satisfactory to find, has attracted a good few of the leading workers, but perhaps the best sign of the success which it has attained is the quantity of really good work by workers who are not regularly in the lists of exhibitors at the well-known shows. The award list has already been published in our pages, so that we need only now advise those who would spend half an hour inspecting a collection of fine prints and noting the methods of their production to pay a visit to 52, Long Acre.

## FORTHCOMING EXHIBITIONS

- December 30 to January 2.—Chelmsford Photographic Society. Sec., M. J. Morison, Savernake Lodge, Chelmsford.
- December, 1908, to January, 1909.—Kiew International Photographic. Sec., S. T. Horowitz, Technical Society, Kreshtchatik, 10, Kiew, Russia.
- 1909.
- January 1 to 9.—Scottish National Photographic Salon. Sec., Robert Telfer, 138, Glasgow Road, Wishaw.
- January 6 to 27.—Northern Photographic (Manchester). Sec., S. L. Coulthurst, Broad Oak Road, Worsley, Manchester.
- January 19 to 30.—Glasgow Southern Photographic Association. Entries close December 30, 1908. Sec., Robert Lindsay, 189, Allison Street, Glasgow, S.S.
- February 1 to 13.—Glasgow and West of Scotland Amateur Photographic Association. Entries close January 20. Sec., James M'Kissack, 68, West Regent Street, Glasgow.
- February 8 to 13.—St. Helen's Camera Club. Entries close January 27. Sec., A. G. Else, Duke Street, St. Helen's, Lancs.
- February 10 and 11.—Coves Camera Club. Entries close February 1. Sec., E. E. Vincent, 4, High Street, Coves.
- February 20 to March 20.—South London Photographic Society. Sec., H. Creighton Beckett, 44, Edith Road, Peckham, S.E.
- February 22 to March 6.—Birmingham Photographic Society. Entries close for abroad January 5, for England, February 12. Sec., Lewis Lloyd, Church Road, Moseley, Birmingham.
- March 17 to 20.—Nottingham Camera Club. Sec., E. L. Kent, 5, Radcliffe Mount, West Bridgford, Notts.

## Patent News.

*Process patents—applications and specifications—are treated in "Photo Mechanical Notes."*

The following applications for patents have been received between December 7 and December 12:—

- DARK SLIDES.**—No. 26,443. Improvements in or relating to plate-holders or dark slides for photographic cameras. Herbert George Ponting, Chancery Lane Station Chambers, London.
- CAMERAS.**—No. 26,535. Improvements in photographic cameras. The Thornton-Pickard Manufacturing Company, Ltd., Arthur Gray Pickard, and Frank Slinger, 6, Bank Street, Manchester.
- CINEMATOGRAPHS.**—No. 26,677. Improvements in cinematographs or bioscopes. Percy Bennett, 259, High Street, Lincoln.
- DAYLIGHT DEVELOPMENT.**—No. 26,755. Improvements in and relating to the daylight development of photographic negatives on dry plates or cut films and appliances therefor. Frederick MacKenzie and George Wishart, 96, Buchanan Street, Glasgow.
- PLATES.**—No. 26,803. Improvements in or relating to photographic plates. Albert Thornley, 37, Chancery Lane, London.
- FILMS.**—No. 26,980. Improvements in films and film packs. John Owden O'Brien, 6, Bank Street, Manchester, for John Edward Thornton, United States.
- PRINTING APPARATUS.**—No. 27,047. Automatic apparatus for taking prints from photographic negatives, transparencies, and the like. Louis Brochery, 38, Chancery Lane, London.

### COMPLETE SPECIFICATIONS ACCEPTED.

These specifications are obtainable, price 8d. each, post free, from the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

**DRY MOUNTING.**—No. 13,253. 1908. This invention relates to an improved process for mounting photographs, etc., in a dry condition. It has already been proposed to mount by coating the back of the engraving or photograph with an adhesive made of resin or with a gutta-percha solution, or by placing a layer of paper coated on both sides with an adhesive made of resin between the photograph and the mount, adhesion being produced by heat and pressure.

According to the present invention a piece of paper or the like

is coated on both sides with a solution of gutta-percha or is passed through the latter. The liquid at first remains on the surface, which, when dry, appears to be covered with a thick white easily damaged coating. The paper is then exposed to the rays of heat on a hot plate or the like, whereby the liquid enters the pores of the paper, so that it has the appearance of being thin, transparent, and parchment-like, especially when strong thin tissue paper is used; the paper is then dried. In this condition it can be rolled up into rolls without any fear of it sticking together. By passing over a hot iron, between the above-mentioned rollers of a glazing machine, the adhesive soaked into the paper is slowly softened, so that it closely unites the paper, on the one hand, with the photograph or engraving, and, on the other hand, with the mount, without any of the adhesive exuding from the edges of the parts to be connected. The piece of paper soaked with gutta-percha prevents the mount, or any matter between the latter and the paper, from attacking the photograph (chemical decomposition), because the gutta-percha insulates to a certain extent. At the same time the solution of gutta-percha does not exclude the use of paste, dextrine, and the like with it, should such adhesives for any reason appear to be advantageous.

It is sometimes advantageous to coat the back of the photograph with the gutta-percha solution and then expose it to the heat radiated by a hot plate, so that the solution is caused to soak into the back of the photograph. The photograph is then caused to adhere to the mount by passing a hot iron over the same. Dr. Julius Neubronner, Cronberg, in Taunus, Germany.

**ENLARGING LANTERNS.**—No. 18,478. 1908. This invention relates to improvements in the condenser frame of lantern-enlarging apparatus, which receives the carrier with the negative to be enlarged. Hitherto this condenser frame has been made rigidly attached at right angles to the base with a slot to receive the negative carrier. This does not allow for any adjustment to correct any distortion on the negative owing to the camera having been tilted from the horizontal while the picture was being taken. This invention consists essentially in making the condenser frame of two parts, one of which is rigid and vertical to carry the condenser, and the other is pivoted or movable, so as to assume an inclination to the vertical

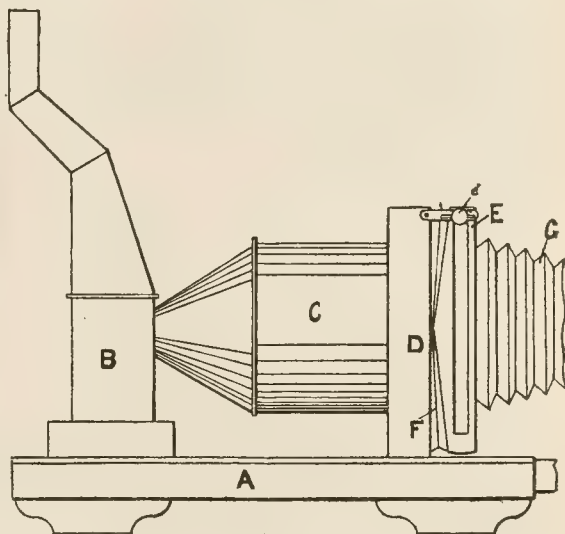


Fig. 1.

to receive the negative, the condenser carrier and stage or negative receiver being connected by a light-tight bellows or other flexible or sliding connection. Figs. 1, 2, and 3 show side elevation of lantern enlarging apparatus in three different forms.

The base 'A' is of the ordinary construction, with a lantern 'B' of the usual form, either for an oil, gas, or electric light, and a condenser hood 'C'. The condenser frame is constructed in two parts, a condenser carrier 'D' and a stage or negative receiver 'E'. The con-



condenser carrier is vertical and rigidly attached to the base A in the usual way, and to it the hood C is attached. The stage or negative receiver E is pivoted to swing out of the vertical and so place the negative relative to the plane of the lens to correct any fault or distortion therein that may occur owing to the camera not having been horizontal when the picture was taken; or, in other words, to place the negative in the same plane as that in which it was when the photograph was taken.

The stage or negative receiver E is connected to the condenser

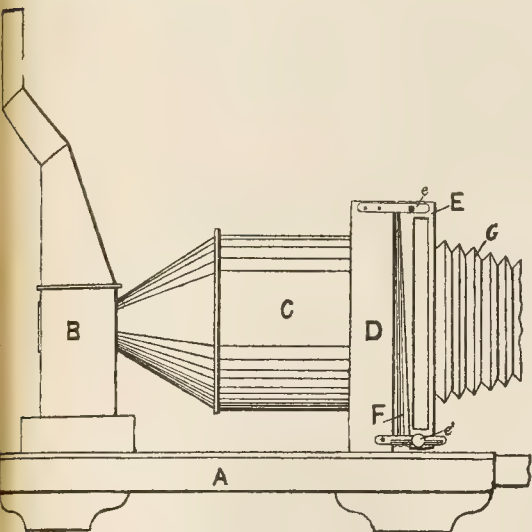


Fig. 2.

carrier D by a light-tight bellows or other flexible connection F to prevent light escaping, or it may have a hood or a sliding connection for the same purpose.

The stage or negative receiver E may be pivoted or hinged at or near its centre to the condenser carrier D, the sides of either being shaped to allow of it swinging, as in Fig. 1, or it may be

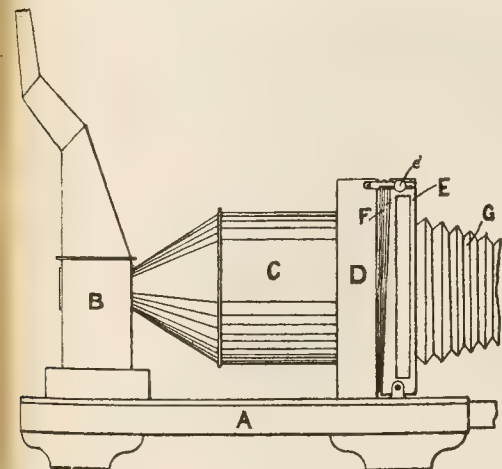


Fig. 3.

pivoted at the top by a bracket e, as in Fig. 2, or it may be pivoted at the bottom, as in Fig. 3, or it may be otherwise arranged to fall to either side of a vertical axis.

A catch e<sup>1</sup> is provided to hold it in the desired position.

The front expanding bellows G are attached to the stage or negative receiver E. Thornton Pickard Manufacturing Company,

Ltd., of Altrincham, Cheshire; Arthur Gray Pickard; and Thomas Ripley Foxcroft.

**CINEMATOGRAH MECHANISM.**—No. 18,783. 1908. The invention relates to apparatus designed to take a series of consecutive pictures of objects in motion on a continuously moving film or other photographic surface. This is done, not, by moving the working lens, to compensate for the movement of the film (such movement of the objective, relative to the view, producing pictures blurred in outline and having the appearance of being out of focus), but the lens is fixed and the image formed by the lens is caused to follow the moving film by means of a movably mounted lens arranged between the objective and the film, which lens is moved to refract the rays forming the image in such a manner that the image during the total exposure remains on the same part of the film. It is preferred to use a cylindrical lens mounted in the exposure opening of an ordinary rotating circular shutter and provided with means whereby during exposure its axis of curvature is maintained at right angles to the line of movement of the film. Joseph Bianchi, 219, Church Street, Toronto, Canada.

**COIN-IN-SLOT PHOTOGRAPHIC CAMERA.**—No. 1,422. 1908. The object of the invention is to produce a coin-free apparatus always ready to produce photographs automatically simply on the introduction of a coin and in which the motive power is constant so that the various successive operations of photography, namely, the placing in position of the plate before the objective, the uncapping of this objective, the changing of the plate, its passage through the various baths and its drying may be carried out at a uniform speed whatever number of photographs have been already taken.

A further object is improved arrangements for effecting the different photographic operations, and particularly the final automatic drying of the plate.

Once the apparatus is installed, it works uninterruptedly without requiring any manual intervention other than that necessary for renewing the plates and the baths, when the latter are exhausted, and for turning by the use of the apparatus a crank one quarter of a revolution to obtain the delivery of the photograph; each such turning operation winds up the apparatus and automatically prepares it for the next operation of photographing an object.

All the movements of this apparatus are controlled by a main driving shaft which effects a complete revolution at each operation, and which produces by a series of suitable transmissions all the control necessary for the various operations to be accomplished. This principal shaft is actuated by any suitable driving mechanism, which is put in operation by the fall of a coin of definite value and is automatically stopped after a complete revolution of the main shaft.

In so-called automatic photographing machines as already known, the sensitised plates have been stocked previous to use in magazines and pushed therefrom by a slide so as to fall one by one into position behind the lens, the slide being operated by the shaft actuating the whole mechanism. After exposure the plate is allowed to fall into a wire cage or finger pivoted in a rotative frame which by travelling over a cam path, formed on the inner wall of a circular reservoir around the shaft, causes the cage to dip successively into the solutions contained in the compartments of the reservoir; the cam path being formed so that the cage at one period is so tilted that the finished photograph therein falls into a shoot for delivery. René François Frédéric Roupnel, 38, Rue de Fontenoy, Bourg la Reine (Seine), France.

The following complete specification, etc., is open to public inspection before acceptance under the Patents Act, 1901:—

**GLAZING PRINTS.**—Method and frame for drying gelatine-coated photographic proofs or other papers with the object of attaining a glazed effect by sticking them on polished surfaces. Ziegler.

## New Grade Dames.

**PANOS.**—No. 307,779. Cameras included in Class 8, photographic lenses, telescopes and binocular glasses, microscopes. Ross, Ltd., 3, North Side, Clapham Common, London, S.W., manufacturing opticians. November 9, 1908.

## Analecta.

*Extracts from our weekly and monthly contemporaries.*

### An Appliance for Fireside Developing.

In "Photography and Focus" for December 22, a writer describes a contrivance which he states "has been designed to facilitate fireside photography, and in the interests of domestic peace, and is known at home as his 'slop-catcher.'" This name exactly describes it and its purpose, for it is made to stand on the table when work is being done with solutions in dishes to prevent any of the liquids from getting on to the table-cloth and making a mess. The "slop-catcher" is in two parts—a frame to hold the dishes, bottles, measures, etc., that are in use, and a dish to catch what is upset from them. The frame measures 28 in. by 17 in., and is 2 in. high. It was made of half-inch teak by a carpenter in the town, and is dovetailed at the ends. He was told to avoid glue entirely as it would often be wet. A strut of the same material crosses it midway from side to side. The top is covered with a series of thin strips of the same wood. These are a little less than an inch and a half wide. They are a quarter of an inch apart, and are secured by screws. When this was made, the whole received three coats of white hard varnish. It has been in use for a couple of years, and is still sound, so the varnish may be supposed to be an effectual protection.

This frame fits inside a hollow tray, also made of teak. The tray is watertight, and the frame is made a fairly good fit in it, the height of the edges of the tray being arranged so that they come exactly on a level with the top of the strips on the frame. The outer angle of the sides of the tray are rounded off, as it was found that they hurt the wrists and elbows when work was being done on the apparatus.

## New Books.

"Vergrössern und Kopieren auf Bromsilber-Papier." By Fritz Loescher. Third edition, by Hans Loescher. Berlin: Gustav Schmidt. M2.50.

In this third edition of the book which forms Vol. 15 of the useful "library" series of treatises issued by the publishing house of Gustav Schmidt, the practice of bromide printing and enlarging is very fully treated. The preliminary chapters deal with apparatus for enlargement by day and artificial light, and with the optical principles on which they are based. These occupy more than one-half the volume. The development of bromide paper is somewhat shortly treated, toning processes rather more fully, though exception may be taken to the premier place given to the uranium method. Directions are given for copper and sulphide toning, but not for the thiomolybdate and thioannate modifications of the latter process, which have proved of great practical value in England. A useful final note concerns the use of varnish and encaustic paste for preserving bromides or enhancing their appearance.

"Der Oelfarben-Kopier Prozess." By C. Puyo. Translated by Dr. C. Stürenburg. Berlin: Gustav Schmidt. M1.80.

This volume (No. 24) of the "Photographische Bibliothek" is a translation of the French work by Commandant Puyo, a large portion of which we translated in our issue of August 30, 1907. Though practised in England with such energy, the oil process has been scarcely appreciated in Germany until quite recently. The journals have contained very little about it, and at the time of a visit which we paid to the Brothers Hofmeister less than six months ago, they had no practical acquaintance with the methods of Mr. Rawlins or Mr. Welborne Piper. Therefore Herr Schmidt is to be congratulated on issuing the first detailed description of the practice of the accomplished French workers.

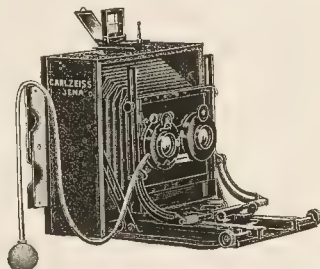
"THE BRITISH ASTRONOMICAL WEATHER ALMANAC, 1909."—This publication, compiled by B. G. Jenkins, F.R.A.S., contains weather predictions, astronomical, sporting, legal, and domestic notes for 1909. The pamphlet is published, price 2½d., by R. Morgan, 68 Westow Street, Norwood, S.E.

"TRAVEL AND EXPLORATION."—The first number of this magazine the name of which succinctly describes its scope, contains contributions from Sir Clement R. Markham, on "A Call to Exploration," from Miss Edith Durham, on "Travel in the Balkans," and from Mr. Dudley Kidd, on "Travellers and Photography." The new periodical is most excellently illustrated, printed, and produced, though on a heavy surfaced art paper, and contains most attractive reading. It is published at 1s. by Witherby and Co., 326, High Holborn, London, W.C.

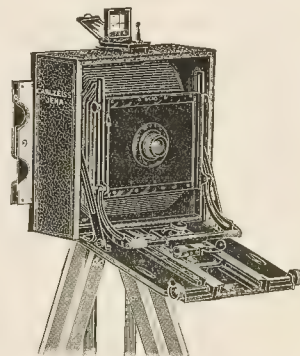
## Dew Apparatus, &c.

The Zeiss Universal Palmos Camera. Made by Carl Zeiss, Jena, and 29, Margaret Street, London, W.

A special pattern of camera, taking plates 13 x 18 c.m., or English 7 x 5 or half-plates, has been designed by the Carl Zeiss Works for use primarily on a stand, but also in the hand. The camera is of the self-contained dropping-baseboard pattern, measuring, when



closed, 9 x 9 x 3½ inches. The baseboard, on the camera being opened, is instantly latched at right angles to the ground glass, and the lens-front can then be racked out without further adjustment or separately drawn out by the spring "clips on the front of the instrument. The net result of these two movements gives a total extension of 19 inches, and the opening of the camera to this full length is a matter of only a couple of seconds. When using a wide



angle lens the baseboard is latched into a dropped position, shown in the second drawing, although the camera is racked in precisely the same way, and without any further adjustment, owing to the hinged device which attaches the front to the extension plate. The camera has rise and fall of front, both by means of the raising of the front as a whole, and also by means of a sliding lens panel. The swing front



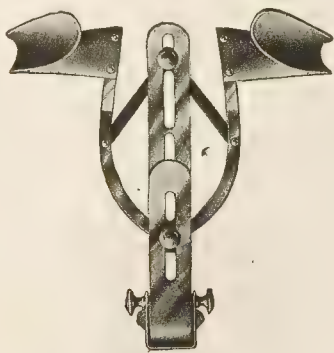
is very conveniently adjusted by a milled screw in the centre of the baseboard, which allows the front to swing both sides of the vertical position. Built square, the camera is fitted with reversing back, which is sprung into place simply by pressure of the back against the back frame of the body, being released by pressure on two studs on the top of the camera. For use in the hand two separate focussing scales are provided, and a direct-vision finder, which is fitted with a mirror, automatically springing up into a position at an angle of 45 degrees for use when holding the instrument in a low position. The whole outfit is most substantially made in light metal, every detail being of the mechanical perfection upon which the Zeiss Works justly prides itself. The instrument is suited for all descriptions of photography for which a half-plate camera may be used, the panel of the lens front being of a size suitable for stereoscopic work. The price of the instrument complete with finder is £17 10s., dark slides of the solid pull-out pattern are supplied at 17s., a stereoscopic division for 8s., and a leather case for carrying the camera and three double slides 26s.

**The Agfa Exposure Table.** Sold by Charles Zimmermann and Co., Limited, 9 and 10, St. Mary-at-Hill, London, E.C.

A card calculator, giving exposures for the six various brands of Agfa ordinary and orthochromatic plates, is sold for the sum of one shilling. It provides for the usual variations, daily and yearly, of light, and for a wide range of subjects, and has a further novel feature in that it supplies the means of calculating the quantity of Agfa flash powder for use when using a lens of various apertures, and at various distances from the subject. Thus, for a subject at 10 yards from a lens working at  $f/6$ , the quantity of Agfa powder for a plate of 200 H. and D., such as the Agfa extra rapid, is  $2\frac{1}{2}$  gms.

**The Griffin Invisible Baby-Holder.** Sold by John J. Griffin and Sons, Ltd., Kingsway, London, W.C.

This accessory for portrait photography is a new introduction of Messrs. Griffin, and, unless we are mistaken, is identical in design with an appliance which, under a similar name, has achieved wide popularity amongst photographers in the United States. It is a species of clamp large enough to encircle or partly encircle the waist of the infant, but its form and springy material cause this embrace to be



almost humanly soft and capable of administration without the infliction of physical pain or inconvenience upon the youthful sitter. We are informed—and we cannot question the authority of Messrs. J. J. Griffin, Ltd.—that children up to six years of age may be thus invisibly held by the device. The latter can be attached to any accessory or piece of furniture, is strongly made in highly nickelled metal, and is sold at 27s. 6d., a moderate price, surely, for an appliance capable of holding a child in one place for a length of time.

**The "Trio" Aldis Lens.** Made by Aldis Bros., Sparkhill, Birmingham.

About a year ago we reviewed and described the "Duo" Aldis lens, a special front combination which when used with the back combination of an ordinary Aldis lens gives a doublet of approximately double the focal length and double the covering power. The "Trio" is a similar front combination designed to increase the focal length only one and a half times, and it is thus better suited

to cameras that will not extend sufficiently to enable the "Duo" to be used. The "Trio" submitted to us is intended for use with the well-known and popular No. 2 Aldis, Series 2, of  $5\frac{1}{4}$  in. focal length and  $f/6$  aperture. On changing the front combination for the "Trio" we have an  $8\frac{1}{4}$  in. doublet, working at a full aperture of about  $f/9$ , and, according to the makers, giving very fine definition over a 7 in. circle. As a matter of fact, however, we find it behaves very well indeed over a half-plate, and the circle is sufficiently large to enable a much larger plate to be covered with smaller stops. The corrections of this modified doublet are very good indeed, astigmatism being absent, while the field is very flat. A small point of light can be sharply focussed in any part of the 7 in. circle. As in the case of the "Duo," the spare combination is provided with a brass protecting cap, and the mounting and finish are fully up to the well-known standard set by Messrs. Aldis in their other lenses. The price of the "Trio," we are informed, will be considerably cheaper than the corresponding "Duo."

**The Penrose "Sizeometer."** Made by A. W. Penrose and Co., Ltd., 109, Farringdon Road, London, E.C.

Under this name Messrs. Penrose and Co. have introduced a useful appliance for showing at a glance the dimension length to which one dimension of an original is reduced when the other dimension is reduced to a given length. The appliance consists of a pair of graduated rules, each 17 in. in length, which open out to an exact right angle. At the hinge point a slotted rod is attached by a carrier which permits of the pair of rules being pushed backwards



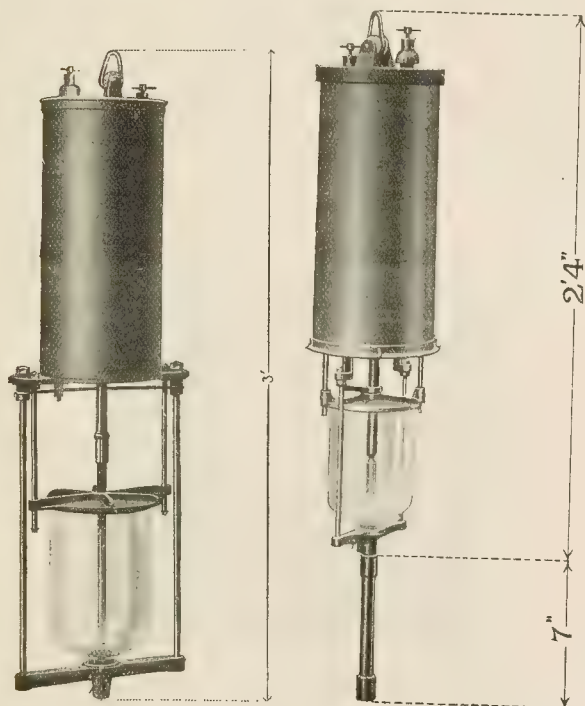
and forwards when the rod is held firm. The apparatus is as simple in use as in construction. It is simply laid on the original, so that the opposite corners of the latter are seen in the slot. The angular rules are then moved up or down, as shown in the figure, until one of the arms measures the height (or width) desired. On the other arm will then be found the required measurement of the other dimension of the original. The apparatus is neatly made, and we cannot conceive of any device more handy for its particular purpose. Complete in cardboard case its price is 6s. 6d., and it may be obtained divided into either inches or centimetres.

**"WESTMINSTER" ARC LAMP—LATEST MODELS.**—We illustrate from an advance copy of the full price-list of the Westminster Engineering Co., Ltd., Victoria Road, Willesden Junction, N.W., the latest models of the firm's photographic arc lamp which we recently inspected at their works at Willesden. In addition to a number of improvements in the mechanical part of the lamps, the latter are now issued with "bottle" pattern of the glass cylinder, this form giving a better downward distribution of light than the pattern with the metal cylinder base, originally designed for cylinder printers. The "bottle" form of glass is supplied with both of the firm's standard patterns for photographic use—viz., the Nos. 111c and 114. The technical specifications of these two patterns, it may be mentioned, are as follows:—

**No. 111c Type Lamp.**—This lamp is made for burning singly on either alternating or continuous current on voltages of from 100 to 250. On continuous current, resistance must be used with each lamp.

To get the longest possible arc a regulating resistance should be used. The current is 14 to 15 amperes on 100 to 120 volts, and 10 amperes on 200 to 250 volts. On alternating current circuits a "choking coil" should be used with each lamp in preference to a resistance. With current at 3d. per unit on a 200 volt supply, the lamps taking 10 amperes, the cost of current per hour would be 6d. The lamp is suitable for portraiture, process, or printing work.

*No. 114 Type Lamp.*—This lamp is made for burning singly on either alternating or continuous current on voltages of from 100 to 500 continuous or 100 to 250 alternating. On continuous current a resistance must be used with each lamp. To get the longest possible arc a regulating resistance should be used. The current is 20 amperes on 100 to 120 volts, 15 amperes on 200 to 250 volts, and 10 amperes on 400 to 500 volts. On alternating current a choking coil should be used with each lamp in preference to a resistance. With current at



3d. per unit on a 200 volt supply, the lamps taking 15 amperes, the cost of current per hour would be 9d. This lamp is naturally more rapid and illuminates a larger space than the 111c. It is suitable for portraiture, process, or printing work.

As an example of the actinic power of the "Westminster" arc, we were interested in hearing recently of a cinematograph exposure by the Warwick Trading Company (Mr. Will. G. Barker) solely with the light of six "Westminster" arcs used for a voltage of 210 alternating current. The space illuminated was 30 ft. by 35 ft., and pictures were made at the rate of 960 exposures per minute, equal to an exposure of 1-32 of a second for each photograph, as there is a half period of darkness to be allowed for the movement of the film in the camera. The lens was working at  $f/4.5$ , and the speed of the emulsion was about 195 H. and D.

**CHRISTMAS HOLIDAYS.**—Messrs. J. H. Dallmeyer, Ltd., inform us that their factory at Neasden will be closed from Thursday, December 24, to Monday, January 4, to allow of the usual overhauling and cleaning of the factory and machinery. Their showrooms at 25, Newman Street, W., and offices at Denzil Road, Neasden, N.W., will however, re-open as usual on Monday, December 28, and Tuesday 29 respectively.

## New Materials, &c.

"CARBONA" CLEANSER FOR OIL-PIGMENT BRUSHES.—Messrs. John Morgan, Richards, and Sons, Ltd., 46, Holborn Viaduct, E.C., send us a sample of a liquid supplied by them as a substitute for benzole and light petrol, over which products it possesses the advantage of non-flammability whilst still exerting a powerful solvent action on greasy or fatty bodies. We have found it to act as a most effective cleanser of the brushes used in the "oil" and "bromoil" processes, and we have likewise failed to cause ignition of the liquid or of its vapour under such conditions as could prevail in ordinary circumstances. For many other cleansing purposes "Carbona" should be found useful in the professional photographer's studio; since it removes grease from fabrics, etc. It is obtainable in bottles, from 7½d.

### CATALOGUES AND TRADE NOTICES.

**DIFFRACTION GRATINGS AND SPECTROSCOPES.**—Messrs. R. and J. Beck, 68, Cornhill, E.C., have issued a catalogue of Thorp diffraction gratings and other spectroscopy accessories, which they can supply mounted specially for photographic purposes. The list includes pocket and table Beck-Thorp spectroscopes, and is sent free on application.

**"THE PRISM"** (A. E. Staley and Co., 19, Thavies Inn, E.C., for one penny stamp), in its current issue, describes the many branches of work in which an anastigmat lens of large aperture, such as the "Tessar," is almost a necessity.

## Meetings of Societies.

### MEETINGS OF SOCIETIES FOR NEXT WEEK.

#### MONDAY, DECEMBER 28.

South London Photographic Society. "Home-made Apparatus." Members.

#### TUESDAY, DECEMBER 29.

G.W.R. Literary Society (Photographic Section). "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.  
Blackburn and District Camera Club. Members' Enlarging Night.  
Hackney Photographic Society. "Colour Projection." S. W. Morrison.

#### WEDNESDAY, DECEMBER 30.

North Middlesex Photographic Society. Technical Meeting. Nomination of Officers and Council for 1909.  
Croydon Camera Club. Conversational Evening.  
Croydon Gas Camera Club. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.  
Leeds Camera Club. "Development of the Negative." F. Rust.

#### THURSDAY, DECEMBER 31.

Melbourne (Dulwich) Camera Club. "Copying by Artificial Light." P. Fredk. Visick.  
Richmond Camera Club. Lecture by Major Latham.  
North-West London Photographic Society. 1908 Collection Affiliation Slides.  
Watford Camera Club. "On the Printing, Developing, and Toning of Velox Papers." W. F. Slater.

**CROYDON CAMERA CLUB.**—At the invitation of the club nearly twenty members of the medical profession practising in Croydon and neighbourhood assembled last week to hear a joint lecture by Dr. C. E. K. Mees and Mr. W. H. Smith, on X-rays, their various applications, and the necessary apparatus for their production, an abstract of which we hope to publish at a later date. It will be sufficient to say here that a solid two hours of compressed matter was listened to with the greatest attention and interest, the only one present whose appreciation was of a modified nature being the honorary reporter, who, ignorant of shorthand, inwardly prayed at intervals for the intervention of blackboard diagrams, to enable him to "catch up."

The appearance of Dr. Mees and Mr. Smith, accompanied by a small cartload of apparatus, was due to the ingenuity of the club's



honorary secretary, Mr. H. M. Bennett, who had successfully tackled and solved a problem which must present itself frequently to secretaries in general. To illustrate this problem and its solution an impersonal case may be assumed. Let A B and C D be members of a society who have a knowledge of any given subject. Both are independently asked to lecture on that subject, and respectively decline, for reasons satisfactory to themselves and no one else. An interval is allowed to elapse. A B is then approached by the hon. sec., who, comforted by the doctrine of the "means justifying the end," states that C D is willing to give a lecture if A B will afford a helping hand. It would be ungracious to refuse, and this is agreed upon. C D is then interviewed and told that A B has kindly consented to lecture if he (C D) will render a little assistance, which in turn is cheerfully promised. Time goes on, and, prior to the date fixed, A B and C D meet to arrange details. "In what way can I help you?" says A B, politely, to C D. "Pardon me," replies C D, "it is I who propose helping you." The question being further discussed between the two, a distinct danger at this point arises, that both may come to the conclusion that they have been very badly "had"; but "extreme regrets" on the part of the responsible official, "that any unfortunate misunderstanding should have arisen," will probably smooth matters over, and result in a joint lecture being given, to the satisfaction and gratification of all. *Verb. sap.*

## Commercial & Legal Intelligence.

**ST. BLAZEY PHOTOGRAPHER'S DEBTS.**—W. J. Osborne, photographer, St. Blaze, applied, at the St. Austell County Court, for an administration order to enable him to pay his debts, amounting to £25, at the rate of 15s. in the £ by instalments of 6s. per month. Debtor ascribed his position to lack of capital, pressure of creditors, business depression, and some person or persons exposing him to the public at large, through which his business had practically come to a standstill.

Captain W. Williams, mine manager and furniture dealer, of Station Road, St. Blaze, appeared as a creditor to object to the order being granted. He said defendant had employed a man during the past summer on a basis of 20 per cent. commission on sales, and that person he could prove had been receiving 15s. per week from applicant, thus leaving Osborne an income of £3 per week to enable him to pay 15s. in the £. That man had now left applicant, but he still had another man to assist him. Osborne did good business in the neighbourhood. Applicant denied that he employed a man at 20 per cent. He only employed him between times, and was paid by a mutual arrangement. It was merely a friendly action.—His Honour: A good friend that. What did you pay him, putting aside friendship?—Osborne: I might have paid him 4s. to 5s. per week, perhaps 6s. or 7s. sometimes. He agreed with his Honour that summer was the best time for his business.

Captain Williams complained that applicant had not included all his debts, pointing out that he owed a debtor called Courtney an amount of 16s. 6d., besides other people, whom he agreed to pay in full.—Osborne said he was not aware he owed Courtney anything. The debt referred to, for picture framing, Osborne said he had settled by giving the man a picture framer's vice.—Captain Williams also pointed out that the Official Receiver was applying for the payment of £2 from Osborne owing to Mr. Eplett, of St. Blaze, whose affairs are in bankruptcy.—Osborne said that was nothing to do with commission payable to Eplett; it was money lent him at the time.—Captain Williams again stated that he could prove there were some accounts Osborne had not turned in at all, and which Osborne proposed to pay in full.—His Honour said if that could be found out that was another question.—Osborne protested that Captain Williams knew more about his business than he did himself, whereupon Captain Williams retorted that he only went by facts.—His Honour pointed out that debtor only owed £25, and that there was plenty of margin for people who had any more accounts against him.—His Honour decided to make the order.

**LEGAL NOTICES.**—An adjudication order has been made against Alfred Fletcher, photographer and picture framer, of The Studio,

Town End, Chapel-on-le-Frith, Derbyshire. The receiving order was made on December 10.

A receiving order has been made against John Walter, proprietor of a photographic art gallery, 49, Southampton Row, W.C., and lately carrying on business as a partner in the firm of Burnbaum, Walter and Co., egg importers, of 42, The Exchange, Southwark Street, S.E. The petition was filed by a creditor on November 13, and the receiving order was made on December 14.

## News and Notes.

**THE HOUGHTON SMOKER.**—On Friday evening, December 18, at the Holborn Restaurant, the third of the series of smoking concerts organised by the London staff of Messrs. Houghtons Ltd. was held, Mr. Edgar W. Houghton presiding over a crowded attendance. Arranged primarily by the staffs of the Houghton establishments, and enthusiastically organised and supported by them, the function has, however, acquired also the character of an annual Christmas re-union of many associated with the photographic trade. Among those who last Friday were numbered among Messrs. Houghtons' guests were Messrs. Hubert Elliott and F. E. Greenwood, H. W. Hall and J. B. B. Wellington, Thomas Illingworth, A. E. Staley, Chas. Zimmermann, R. J. Kindon, W. Thomas, W. T. F. Wastell, J. McIntosh, B. Foulkes-Winckes, C. Winter, C. F. Lan-Davis, J. E. Hodd, A. W. Brooks, H. C. Pharaoh, L. J. Bolton, Percy Barringer, and George E. Brown. Mr. Edgar Houghton, who was supported by Messrs. Charles Houghton, F. C. Smith, Percy G. R. Wright, and other officers of the firm, introduced to the audience a company of vocal and instrumental entertainers, on the selection and direction of whom every congratulation may be offered to Mr. Paul Payne, who, as in previous years, was responsible for the programme, and the hour was not far short of midnight when a most enjoyable evening was brought to close by spontaneous cheers for the chairman and calls for a speech. Mr. Edgar Houghton, in briefly responding, expressed his thanks for the marks of cordiality on the part of those present, and with this evidence of the excellent relations between all those engaged in the Houghton business, the evening was brought to an end by a vote of thanks to Mr. Payne and the performers. During an interval a collection of £8 12s. 6d. was taken for the "Referee" Children's Christmas Dinner Fund.

**MR. J. ARNALL**, of 9, Boulevard Bonne Nouvelle, Paris, has been awarded a gold medal at the Salon Mobilier et Arts Decorative.

**THE WANDSWORTH BOROUGH COUNCIL** passed plans on December 16 for the erection of a photographic studio at 298, Streatham High Road.

**PROFESSOR LIPPMANN** has been honoured by the award of one of the Nobel prizes. The distinction is granted for his researches in colour photography.

**THE BLACKPOOL TOWN COUNCIL** are endeavouring to obtain further power to deal with the large number of street hawkers, itinerant photographers, and others, who swarm into Blackpool during the visiting season.

**JAPANESE DECORATIVE ART.**—Those interested in the art handicrafts of Japan and in the mythology of that country which is invariably associated with them, may be glad to be referred to two articles by Mr. H. G. Ponting on "The Adornment of the Sword," which appeared in recent issues (November 14 and December 12) of "Country Life."

**SHEFFIELD PHOTOGRAPHIC SOCIETY.**—The sixth annual exhibition will be held in the Montgomery Hall, Sheffield, from March 30 to April 3, 1909. There will be six open classes (including one for colour photography), all of which are open to both amateurs and professionals, and the judging will be done by Mr. C. F. Inston, F.R.P.S. Exhibitors at the Nottingham Camera Club's exhibition, can have their pictures forwarded to Sheffield free of charge if

desired. Entries close March 13, 1909, and we believe entry forms will be ready shortly, but in the meantime full particulars may be obtained from the hon. sec., Mr. H. Merrill, 22, Harboard Road, Woodseats, Sheffield.

**COLOURING ELECTRIC LAMPS.**—C. Kemsey-Bourne writes to the "Pharmaceutical Journal": "After considerable experiment, I decided to use the following, which so far has proved satisfactory. The solution dries very quickly, gives a clear sparkling colour, and takes practically no time to make or to use. Mawson's enamel collo-dion is thinned with methylated ether and coloured with aniline dyes. To use, hold the lamp over a suitable vessel and simply pour the solution on. The shape of lamp lends itself to this method.

**THE TROUBLES OF AN EDITOR,** as enumerated by the "American Druggist," are quoted here for the benefit of various readers:—"Editing a newspaper is a nice thing. If we publish jokes people say we are rattlebrained. If we don't we are fossils. If we publish original matter they say we don't give them enough selections. If we give them selections they say we are too lazy to write. If we don't go to church we are heathens. If we do go we are hypocrites. If we remain at the office we ought to be looking out for news items. If we go out we are not attending to business. If we wear old clothes they laugh at us. If we wear good clothes they say we have a pull. Now, what are we to do? Just as likely as not someone will say that we stole this from an exchange. So we did. So did he."

**THE SERVICE COMPANY, LTD.**—The report of the Service Company, Ltd., for the year ending September, 1908, shows that the gross profit, which amounts to £5,342 12s. 1d., is the largest ever made by that company. After paying the dividend on the 6 per cent. preference shares £409 has been carried to reserve, and £177 to next year's accounts.

In order to meet the requirements of their increasing business the service company have had an additional exchange line, and their telephone numbers will in future be 260 Central and 2,071 City. It is hoped that this, combined with the fact that a number of internal extension telephones have been fitted up to the different departments, will enable their customers to transact their business "over the 'phone" more expeditiously than they have been able to do in the past.

**MR. THOMAS BEDDING.**—We learn from the current issue of "The Photo Miniature" that Mr. Thomas Bedding, who had been associated for the past few months with Mr. John A. Tennant in the editing of our contemporary, has taken charge of the experimental research department of the Cameraphone Company, of New York, one of the largest and most progressive houses in the moving picture world.

**THE INEBRIETY OF ART.**—A simple rustic (relates the "Windsor Magazine") coming across an enthusiastic lady artist sketching a small landscape with a large sky, took a respectful interest in the picture.

"Ah," said the lady, "perhaps to you, too, Nature opens her sky-pictures, page by page. Have you seen the lambent flame of the dawn leaping across the livid east—the red-stained, sulphurous islets floating in lakes of fire in the west—the ragged cloud at midnight, black as a raven's wing, blotting out the shuddering moon?"

"No miss," replied the man, "not since I quit drinking."

**AN "AUTOTYPE" CALENDAR.**—One of the most useful pieces of trade literature we have seen for a long time is the calendar just issued by the Autotype Company, and presumably obtainable by sending one penny stamp to 74, New Oxford Street, London, W.C. The calendar bears a pair of Autotype carbon prints of children's portraits, a calendar with monthly tear-off, and a useful "at-a-glance" indicator, a tiny frame, which travels in both directions over the calendar, and can thus be adjusted each day to point out the date.

**ST. HELENS CAMERA CLUB.**—The eighth annual exhibition will be held in the Windle Pilkington Hall, St. Helens, from February 8 to 13, 1909, when the judging will be in the hands of the Rev. H. W. Dick and Mr. C. F. Inston, F.R.P.S. There will be four open classes, three of which will doubtless attract special attention—namely, the championship class for pictures that have taken awards in open

exhibitions during the last three years; a class for pictorial photographs which have never previously won a prize; and the class for colour photography. In each of the first two awards to the value of one guinea and a half a guinea will be placed at the disposal of the judges; in the third one prize, value 10s. 6d., is offered. Entries close January 27, on or before which date entry forms, together with entrance fees must reach the hon. sec., Mr. A. G. Else, Duke Street, St. Helens, from whom entry forms and full particulars may also be obtained. Intending exhibitors at the northern exhibition should note that their pictures can be conveyed from Manchester to St. Helens free of charge.

**THE "CHEMIKER ZEITUNG."**—We are informed by a circular that the "Chemiker Zeitung," the organ for over thirty years past of the German chemical industry, will, from January 1 next, appear three times, instead of twice, a week. The "Chemiker Zeitung" must thereby make a record in technical journals, and the value of its pages to technical and scientific chemists thus receives a further proof. It may be added that photo-chemistry and photographic chemistry figure in its "Repertorium," or abstracts of current progress.

**CHALLENGE COMPETITION.**—The awards made by Messrs. Backhouse and Coppock, Ltd., in the competition recently organised by them for users of the "Challenge" printing papers are as follows:—First prize, gent.'s Rudge-Whitworth cycle, awarded to Mr. W. Cheetham, 10, Malpas Street, Oldham; second prize, high grade English camera, plate, by Thornton-Pickard Company, Mr. H. J. Blane, 67, Minard Road, Catford, London, S.E.; third prize, £1, Mr. Charles J. Hankinson, Birken, Bournemouth, W.; fourth prize, 10s., Rev. E. Travers Clark, Tiverton, Devon. The high standard of the results made it no easy task to award the prizes.

## Correspondence.

- \**Correspondents should never write on both sides of the paper. No notice is taken of communications unless the names and addresses of the writers are given.*
- \**We do not undertake responsibility for the opinions expressed by our correspondents.*

In consequence of pressure upon our space and the earlier closing of the pages owing to the holidays, several letters are held over.

### A WARNING.

To the Editors.

Gentlemen,—As a warning to readers, it may serve a purpose if the trick adopted in stealing a quarter-plate Newman and Guardia high-speed universal camera (No. 1,237) and Zeiss planar lens (No. 38,011), which had been advertised, be published.

The thief called, saw the camera, and obtained visiting card of owner, promising to call again. This he did when he knew the owner to be absent.

Showing the card as evidence of a message (sic), he presented a dummy parcel, and was allowed to take the camera in exchange.

It seems absurd to have to point out that a visiting card, supported by however plausible a story, is no evidence of an authentic message.

Thanking you in anticipation for the publication, I am, yours truly,

T. F. CONNOLLY.

53, Bradbourne Street, Parson's Green, W.

### BROMOIL DEMONSTRATIONS.

To the Editors.

Gentlemen,—May I explain that the error which you pointed out on p. 958 of your journal is purely a verbal one, due to a mistake on the part of my secretary in typing my manuscript, which resulted in the word "when," instead of "by," being inserted immediately preceding "Mr. F. J. Mortimer," and in the substitution (three



lines below) of "favoured" for "favouring"? I have, of course, not forgotten Mr. Welborne Fifer's memorable demonstration at the R.P.S. in January, 1908.—Faithfully yours,  
Cheam Road, Sutton.

HECTOR MACLEAN.

December 19, 1908.

### STEREOSCOPIC PROJECTION.

To the Editors.

Gentlemen,—In response to your invitation to supplement my previous letter I might state that I made up no particular strength of iodine solution. It was, however, made up in accordance with the method you mention, except that I added a few ccs. of alcohol before adding the water. To remove the free iodine and to clear the high-lights after staining, I used a 10 per cent. solution of sodium sulphite. This solution is also useful for removing the red and green dye from fingers and nails should they become stained. The dye solutions were made by dissolving half a grain of either dye in eight ounces of water. The strength of these solutions is really immaterial, as the same result appears to be obtained by a long immersion in a weak solution or a short immersion in a strong solution. I prefer, however, a weak solution, as the high-lights are more easily cleared.

In making up the aniline green solution I found it advisable to dissolve the dye in a small quantity of water with constant stirring, then allowing to stand for ten minutes or so, and finally pouring off to about half an inch of the bottom. If this is not done minute particles appear to remain in suspension, and gradually settle on the film, causing dark green spots, which are very difficult to remove. For fixing, I used a 10 per cent. solution of hypo. Fixation is very quick, apparently one or two minutes being sufficient. It is necessary to dissolve out the silver iodide image, as it is more or less opaque, and can thus be seen by both eyes, regardless of the coloured spectacles, when the picture is projected. After fixing the slides were washed in several changes of water. It is better not to employ running water, but to let them soak at the bottom of a dish, as the image is thus less likely to be washed out.—Yours faithfully,

33, London Road, Ipswich.

HARRY DE BEER.

December 21, 1908.

## Answers to Correspondents.

- \* All matters intended for the text portion of this JOURNAL, including queries, must be addressed to "THE EDITORS, THE BRITISH JOURNAL OF PHOTOGRAPHY, 24, Wellington Street, Strand, London, W.C." Inattention to this ensures delay.
- \* Correspondents are informed that we cannot undertake to answer communications through the post. Questions are not answered unless the names and addresses of the writers are given.
- \* Communications relating to Advertisements and general business affairs should be addressed to MESSRS. HENRY GREENWOOD & Co., 24, Wellington Street, Strand, London, W.C.
- \* For the convenience of Readers, our Publishers, MESSRS. HENRY GREENWOOD & COMPANY, of 24, Wellington Street, Strand, W.C., undertake the registration of copyright photographs at a charge of 1s. 7d. each photograph, to cover cost of registration fee, form, etc. Two unmounted copies of each photograph must be sent with the fee.

### DRAWINGS REGISTERED:—

- J. ANDER, 3, Benwell Grove, Newcastle-on-Tyne. Drawing (Combination) containing Three Black and White Sketches of H.M.S. "Calhops," with a Scroll giving an Account of the Vessel.

**POSITIVE TRANSPARENCIES.**—I should be glad if you would kindly let me know what developer for plates you would recommend to produce the best quality positives from, as I want to send some negatives to a firm to have a lot of copy negatives made from them, and should like the best results possible. Should the negatives be thin, with plenty of detail?—J. T.

We would tell you that the best results are obtained from positive carbon transparencies. Using dry plates, there is no appreciable difference between the different developers. We should use one such as Rodinal, with which it is easy to get a soft

positive, as it is this quality of transparency which is necessary. There should be no absolutely clear glass, detail everywhere, but no excessive density in the shadows—in short, a flat-looking transparency compared with a good lantern-slide.

**COLONIAL PHOTOGRAPHS.**—Could you please tell me in your "Correspondence" column if I could get photographs of the colonies (Canada, Australia, South Africa, etc.) from any publishing house in London? If not, how could I obtain them?—GEO. RIDDICK.

Apply to a large firm of photographic view publishers, such as Valentine, 154, Perth Road, Dundee; Photochrom, Ltd., 35-36, Hosier Lane, Snow Hill, E.C.; or you could no doubt obtain stereoscopic photographs from Underwood and Underwood, 3, Heddon Street, Regent Street, W.

**INQUISITIVE.**—We advise you to get the two books on the subject by Whiting (Dawbarn and Ward, 1s.) and Drinkwater Butt (Hiffe, 1s.). You would also greatly benefit by taking practical lessons, either personal or through the post, as offered by Mr. T. S. Bruce, 4, Villas-on-Heath, Vale, Hampstead, N.W.

**RETOUCHING MEDIUM.**—Will you kindly tell me what properties or effect the asphaltum has in retouching medium? Has it a hardening, or simply to colour (p. 790, "B.J. Almanac")? I have also had the other medium made up at a local chemist (p. 588, "Almanac," 1909); when applied appears hard and smooth surface, but when the finger is run across it leaves a mark as though there was too much oil, dulled, but not noticed on looking through if it dried quickly, as stated, it would not mark whichever way you rub your finger across after it has had time to dry. I usually rub it over with a silk cloth to remove the excess and give it a tooth, but you still see the faint marks where the finger is run over, do you think there has been too much oil added, or is that the nature of this particular formula?—MEDIUM.

Asphaltum is added to retouching medium to give it "tooth"—i.e., the property of taking heavy work without picking up. The soft asphaltum used in making black japan, and not rock asphaltum, is to be preferred. We have examined the sample of medium sent, and compared it with that recommended on p. 790 of the "Almanac." It does not take so much work as the latter, and also "picks up" under heavy work. Castor oil, oil of lavender, spike (i.e., oil of lavender and turpentine mixed), linseed oil, etc., have this unfortunate property. The marking referred to we do not notice, and must assume your method of application is incorrect. In his book on retouching, Mr. Arthur Whiting says: "See that it (the negative) is thoroughly dry and quite free from dust, then apply the retouching medium with a piece of silk or cambric, thinly all over the film. Let the cambric be drawn over the finger-tip without creases, and just touched against the cork of the medium bottle (after the bottle has been shaken once). Then with a gentle circular motion apply as above. Do not rub; do not put the medium on thickly or so that it leaves lines, streaks, or marks." In conclusion, we may mention that with a good medium, correctly applied, the retouching pencil will "sing" at work, especially if being used at considerable speed.

**SPIRIT LANTERN-SLIDES.**—I shall be glad if you will let me know if lantern-slides of any of Archdeacon Colley's spirit photographs are on sale, and, if so, where they can be obtained; if not, can you give me his address?—A. E. A.

So far as we know, they are not published. If they are, you could get them through Newton and Co., 1, Fleet Street, E.C. We do not know the address of Archdeacon Colley.

**GASLIGHT PAPER DEVELOPERS.**—Re above, in December 11, I note you state that there is a well-known amidol formula which is practically successful with all gaslight papers. If you will kindly give me the formula you refer to you will do an old reader a favour.—PUBLICO.

You have not read our note quite correctly. We do not refer to any particular formula, only to the well-known fact that one good formula will work well with practically all the gaslight papers. Each worker usually has what he considers to be a good formula, and he very seldom changes it, in spite of all the recommendations of the paper-makers. We have used many different formulae, some made up to our own ideas, and some bought ready-made, and our experience is that the final result is much the

same, whatever the brand of paper may be. The main difference is in time of action. The amidol developer that we favour most is not, strictly speaking, amidol at all, but diamidophenol, which is now much used in place of amidol. The formula is as follows:

Soda sulphite .....	1 ounce.
Potass metabisulphite .....	1 drachm.
Diamidophenol .....	40 grains.
Potass bromide .....	5 grains.
Water to .....	20 ounces.

With papers that develop very rapidly we sometimes dilute this to half-strength, but as a rule we find it works well with all papers.

**SECOND LENS.**—To-day I managed to pick up a lens bearing the following inscription, and I should be glad if you would let me know if it is of any value, and for what camera it could be used? It appears to be of about 6in. focus: "Doppel anastigmat, D.R.P., Serie III./0, F120m/m, No. 35,277. C. P. Goerz, Berlin." If it has any value, what is the best means of getting it sold, as I have no use for it?—HIGHLAND.

The lens is marked as a Goerz anastigmat, and if it is a genuine example of the firm's manufacture it is certain to be a very fine lens of aperture  $f/6.8$ . But we would caution you as to spurious Goerz lenses, which have been offered second-hand, particularly in Glasgow. Your best course is to address the C.P. Goerz Optical Works, Ltd., 4 and 5, Holborn Circus, E.C., asking them to confirm the particulars you give.

**S. E.**—If you state your wants to Messrs. Penrose and Co., 109, Farringdon Road, we think they could supply you.

**F. C. B.**—We have never made comparative tests, but we should put it at slower than 1-20 or 1-30, more like 1-100. Except with a thin negative, high-power light, and a lens of large aperture, enlarging on gaslight paper becomes tedious. Why not use bromide paper.

**H. E. W. V.**—The fact mentioned to you is one which is a very frequent cause of stains, and such effects are produced in a most erratic manner. The prints should certainly not show discolouration on the backs before toning.

**MILTON.**—If you apply to the Comptroller, Patent and Trade Marks Office, Southampton Buildings, you will obtain the necessary forms. The cost of registration is £1.

**BERNARD JONES.**—So far as we know, no draft has yet been published. We have obtained our information from Berlin.

**VARNISH.**—In making varnish, according to two of the formulæ given in the "Almanac," I find a difficulty in getting the white lac to dissolve freely, and when it does dissolve it leaves a sediment behind and the solution remains turbid. It also takes a long time to filter. I shall feel obliged if you can tell me the reason of this.—H. C. JONES.

There may be more than one cause for the difficulty. One may be that the lac has become more or less insoluble by keeping. White lac should be used freshly bleached, as it has a tendency to become insoluble by keeping, particularly if it is not kept in a somewhat moist condition. Another may be that the spirit employed was too weak for the purpose. For the solution of shellac, sandarac, and other resins the strongest spirit obtainable is best. Bleached lac usually contains a certain amount of water left in the bleaching operation, and that tends to weaken the spirit. Before dissolving white lac it is a good plan to break it up and dry it before putting it in the spirit. If the varnish remains turbid long after the resins are dissolved it may often be cleared by putting the bottle containing it in a vessel of warm water for a time.

**STEREOSCOPIC PHOTOGRAPHY.**—I have recently taken some fairly good stereoscopic pictures with my quarter-plate camera. I have a board with parallel fillets of wood on it, between which I can slide the camera up to three inches, and it answers all right. What I wish to ask you is, will this arrangement do as well for interiors as a camera with two lenses, as I wish to take some stereoscopic pictures of two or three darkly lighted interiors of churches close by here, or is a bi-lens camera absolutely necessary for this kind of work?—A. BOSE.

The arrangement you have been using will do quite well for interiors, so far as the stereoscopic effect is concerned. The diffi-

culty you will have to contend with is that of getting the two negatives, with a long exposure and possibly varying light, equally timed. It is here that the bi-lens camera is at a great advantage over the single lens one. However, a slight discrepancy in the depth of the two halves of a stereoscopic transparency is not of any very great moment, as in the stereoscope this will not be noticeable.

**A. B.**—If the man to whom you gave the order is the accredited agent of the firm the latter is bound by any agreement he may have made with you, and it is he you must proceed against. We know nothing whatever of the firm, nor had we heard of it before. It may be possible that the Professional Photographers' Association knows something about it, and if you are a member we should advise you to communicate with the hon. secretary, at 89, Albany Street, N.W.

**T. BOWEN.**—The spots are clearly due to particles of iron coming in contact with the prints while they have free silver in them, as when they are being washed before they are toned. The only way of avoiding them is to filter the water before use. This is easily done by tying a couple of thicknesses of fine flannel loosely as a bag over the tap. This will, of course, require changing occasionally, as it gets charged with iron rust from the pipes. When water passes through old iron pipes it is very prone to be charged with small particles of iron rust.

**LONDON COUNTY COUNCIL SCHOOL OF PHOTO-ENGRAVING AND LITHOGRAPHY.**—The annual supper of this flourishing school took place last Saturday night in their own "art room," which was crowded with men and youths, past and present students, and many distinguished guests. In a thoroughly Bohemian way the company regaled themselves upon mutton and beef, whilst ale was served from large spouted cans. Heartiness was the order of the evening, as it always is at these functions, and the unceremonious manners of the students seemed to increase the enjoyment of the big guns at the cross table. Youth is youth and students are students all the world over, and it scarcely came as a surprise when one of the speakers was interrupted by a suffragette holding aloft a banner, inscribed "Votes for Women." The speaker and the chairman, Sir George Frampton, both entered into the spirit of the joke, advising care in the removal of the obstructionist. The distinguished visitors indulged in much complimentary toasting of each other, and everybody seemed to receive musical honours. The speakers were Sir George Frampton, R.A.; Messrs. A. J. Newton and Cecil Rea, vice-chairmen; Dr. Wm. Garnett, secretary of the Education Committee, who gave a most succinct account of the development of art teaching; Dr. C. W. Kimmins; M. Nelson Dawson; Frank Colebrook; and A. B. Sullivan. The unconscious humour of the last was a great delight to the audience. A varied entertainment followed the distribution of prizes, the chief recipient of which was a talented student, Peter by name. A badge of silver, presented by the chairman, was won by Mr. Barber for the best work of the year. Drawings and sketches of a very high order of merit lined the walls, and evinced, not only technical and academic skill, but fine imaginative and romantic feeling, remarkable as coming from London boys trained in a little court off Fleet Street.

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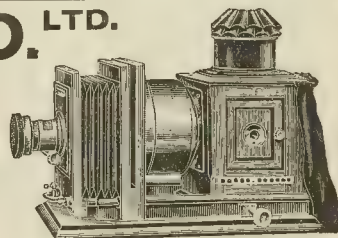
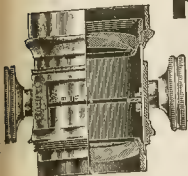
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**ADVERTISER**, well-known portrait medallist, and one who has had a large clientele among the nobility, wishes to hear of either a Partnership as active Managing Operator or as Manager Operator in good house. Total abstainer. Only first class applications considered.—J. 6, 24, Wellington Street, Strand, London.

**AS** Operator-Retoucher or Branch Manager; good class quick trade; first-class exp. with dark-room, Bromide, and outdoor work; competent and energetic; disengaged.—"B," 17, Manbey Grove, Stratford, E.

**A** FIRST-CLASS Retoucher requires Engagement, London or suburbs; willing and obliging.—D. Gassman, 18, Tenter Buildings, St. Mark's Street, Aldgate, E.

**AS** Improver.—Youth (16) requires Situation, architectural; 9 months' exp.; can operate and develop; Bromide; attending Polytechnic; small salary.—"D. O.," 233, Essex Road, Canonbury, N.

**A** GENTLEMAN of sound practical business ability disengaged; managing operator; high-class work only; many years' West-End experience; exceptional refs.—J. 9, 24, Wellington Street, Strand.

**AS** Operator-Retoucher.—Young Gentleman, with 12 years' all-round experience, desires Engagement with good-class firm. Refs., spec., etc., from "C. G. H.," 57, Walpole Rd., Boscobel, Bournemouth.

**A** N experienced Lady Retoucher, good and quick worker, desires Engagement; would assist generally if required. Spec. and ref.—"Pencil," 98, Woodland Street, Dalston, London, N.E.

**A** THOROUGHLY experienced Technical and Commercial Photographer, with practical knowledge of process work and block-making, wants Situation; low salary.—J. 13, 24, Wellington Street, Strand.

**AS** ASSISTANT Operator and Developer seeks Berth; accustomed to Bromide and gaslight printing; 6 years' experience; good refs.; age 21; no Sunday duties; perm.—"A. M.," 28, Hemstead Road, West Hampstead, N.W.

**AS** ASSISTANT Operator-Retoucher desires Re-engagement; 10 years' experience in first-class firms; Liverpool or Leeds preferred.—J. 16, 24, Wellington Street, Strand.

**AS** ASSISTANT (age 21) requires Situation in first-class house, where he can learn operating; first-class retoucher; also developing and copying.—Leslie Hart, Morfa Nevin, N. Wales.

**AS** ASSISTANT Operator and Retoucher; 7 years' experience; good references; London preferred.—Address "C. S. H.," 3, Garfield Terrace, Paignton, Devon.

**AS** ASSISTANT Operator-Retoucher desires permanent Berth in good house; willing to assist all round; good refs.—A. Prescott, 7, Walton Crescent, Oxford.

**A** THOROUGHLY practical Operator-Retoucher and Finisher in B. and W. seeks Berth; used to electric light, etc.—Address "M.," Carlton Studio, 34, New Cross Road, S.E.

**A** LADY desires Berth as Retoucher and Finisher, thoroughly experienced, and could assist other branches; good refs.—"W.," care of Mrs. Lewry, 98, Kensington High Street, W.

**B** ROMIDE Printer and Enlarger wants Berth, London or suburbs; experience with best firms; specimens and references; 35s.—J. 26, 24, Wellington Street, Strand.

**B** ROMIDE Enlarger, Printer (all processes), Operator, and General Assistant requires Berth; artistic posing and lighting; moderate salary; good references, etc.; London or suburbs.—Barlowe, 63, Buckingham Road, Willesden Junction, N.W.

**B** RANCH Manager, Operator and Retoucher, desires Situation; capable, steady, and industrious; 5 years in this situation.—Robinson, 68, Bloomfield Road, Plumstead, S.E.

**D** ARK-ROOM Assistant, thoroughly competent, desires Berth with good London firm, or would assist generally; well experienced in commercial work; mod. salary for perm.—"D.," 2, Camble Road, Tooting.

**D** ARK-ROOM and Studio Assistant desires Berth with first-class firm; thorough West-End experience as developer and printer; London preferred; salary, 25s.—"E.," 46, Greyfriars Rd., Reading, Berks.

**D** ISENGAGED, all-round hand (22), for high-class work; knowledge of retouching; 7 years' experience.—For particulars and references apply "N.," Garfield Studio, Paignton, S. Devon.

**F** IRST-CLASS Assistant Operator-Retoucher; good modeller, knife; expert developer.—"F. S.," 83, Fore Street, Ipswich.

**G** ENERAL Assistant (21) requires Situation in first-class house; thoroughly exp. in Carbon, Plat., C.C. etc., and retouching; ex. refs.—"C. K.," Wensley House, South Road, West Hartlepool, Durham.

**G** ENERAL Assistant seeks Re-engagement, or temporary employment; 20 years' experience in all branches (including Autochrome).—Address "Photo.," 94, Stephendale Road, Fulham, S.W.

**G** ENERAL Assistant requires Post; exp. Printer, Aristo, P.O.P. and Bromide; operate, develop, enlarge; also tinting; knowledge of Carbon and Plat.; ex. refs.; Wales preferred.—Phelps, Johnstown, Carmarthen.

**G** OOD Bromide Printer seeks Situation; used to all classes of work; developing, operating, etc.—Address Peters, 6c, Della Street, Wandsworth, London, S.W.

**G** OOD Finisher desires Re-engagement; good worker in small Plats., Carbons, and copies; knowledge of Aërograph; good references.—J. 46, 24, Wellington Street, Strand.

**I** MPROVER.—Young Lady, with good knowledge of high-class photography, requires Berth where opportunity would be given to learn retouching; efficient at mounting, spotting, printing, etc.—Address J. 31, 24, Wellington Street, Strand.

**L** ADY as Receptionist, Book-keeper, Correspondent and Finisher, disengaged January 15; excellent references; permanency only; London or suburbs preferred.—J. 37, 24, Wellington Street, Strand.

**L** ADY requires Position as Receptionist; permanent; Liverpool or Manchester preferred; accustomed to high-class work; in present sit. 3 years; good colourist.—J. 3, 24, Wellington Street, Strand.

**L** ADY desires Re-engagement as Retoucher; 5 years' experience in business.—A. Marriott, 19, Woburn Place, Russell Square, London, W.C.

**M** ANAGING Operator desires Engagement in high-class studio; or would purchase good studio on terms.—J. 17, 24, Wellington Street, Strand.

**M** ANAGEMENT.—Operator and wife require appointment to manage Branch, or otherwise; thoroughly practical throughout; disengaged.—T. Lyons, care of Post-Office, Haidleigh, Essex.

**N** ORWEGIAN Lady, long experience in retouching, wants employment in first-class studio; small salary required.—"W.," Brunswick House, Clifton Gardens, Maida Vale, W.

**O** PERATOR (28), married, wants Re-engagement, or permanent; usual salary and commission; average 22; day-electric; coupons; reliable.—Write "Photographer," c/o 41, St. John St., Longsight, Manchester.

**O** PERATOR, age 30, day, electric light, and at-home portraiture; good retoucher; experience gained in leading studios.—"Photographer," 21, Churchill Road, London, N.W.

**O** PERATOR-RETOUCHER desires Berth with first-class firm; disengaged; could manage.—Address 78, Chesherton Road, North Kensington, W.

**O** PERATOR and Retoucher, used to management; printing in all processes; West-End experience; outdoor and interior work.—"Manager," 1, Macroon Road, St. Peter's Park, W.

**O** PERATOR and Assistant Retoucher desires Berth in good house; printing in all styles; could manage branch.—"Operator," 230, Mitcham Road, Tooting, S.W.

**O** PERATOR of ability, studio or out, open to engagement; well up in all processes; Carbon, etc.; and successful with children; retouch if required.—Brooke, The Nest, S. Benfleet, Essex.

**O** PERATOR-RETOUCHER, used to management; West-End experience; long references; good outdoor and Bromide hand; London preferred.—"F. P.," 91, Davenport Road, Catford.

**O** PERATOR-RETOUCHER-MANAGER, thoroughly experienced, has successfully managed branch for 7 years; first-class references.—"C.," 22, Rosebery Avenue, West Bridgford, Nottingham.

**O** PERATOR-RETOUCHER; has had management, long experience in good-class quick trade; day and electric; good references.—"R.," 28, Almeida Street, Upper Street, N.

**O** PERATOR or Assistant Operator in first-class studio, with chances of improving retouching; of gentlemanly address; speaks both French and English.—J. 39, 24, Wellington Street, Strand.

**O** PERATOR-RETOUCHER desires permanency as Manager of Branch; over 7 years thorough all-round exp.; age 24; abstainer; thoroughly competent and reliable man; refs.—"Manager," 23, Elworth Street, Sandbach, Cheshire.

**O** PERATOR, thoroughly experienced in commercial work, catalogue illustration, etc.; knowledge of enlarging and retouching; can finish own work.—"B. S.," 8, Montpelier Road, Kentish Town, N.W.

**P** HOTOGRAPHER, all-round worker, requires Situation; moderate salary.—Apply "J. B.," 21, Rosebery Street, Moss Side, Manchester.

**P** RINTER desires evening employment; Bromide, Velox, P.O.P., etc.; mounting, toning; terms moderate.—"A. B.," 30, Millicent Road, Leyton, Essex.

**P** OSTCARDS.—Copyist-Retoucher disengaged; competent hand.—J. 44, 24, Wellington Street, Strand.

**R** ECEPTIONIST.—Appointment desired by young lady; good retoucher; correspondent, etc.; capable of management; excellent references.—J. 5, 24, Wellington Street, Strand.

**R** EPRESENTATIVE, with first-class connection in Southern half of England, now representing principal London house, requires an additional commission.—J. 10, 24, Wellington Street, Strand.

**R** ECEPTIONIST and Retoucher (good) requires Engagement; can take entire management; first-class references.—"M. L.," 128, Wellington Road, Bilston, Staffordshire.

**S** MART General Assistant, with 4½ years' practical experience, disengaged; good outdoor operator; knowledge of all three Platinum processes; excellent refs.—"H. S.," Vernon Road, Sutton, Surrey.

**S** MART young Operator requires Situation; has had thorough experience; commercial and technical, etc.; good references and specimens.—J. Russell, 146, Seymour Street, London, N.W.

**S** ITUATION required as first Assistant Operator and Retoucher with high-class firm; 9 years' experience; last 3 years with W. W. Winter; age 24; good refs.—Address G. Coward, 8, Barlow Street, Derby.

**W** ORKS Manager, Landscape Publishing and Photo. Postcard Works requires Re-engagement; used to large staff; good organiser; highest refs.—S. Snell, 87, Radbourne Road, Balham, S.W.

**Y** OUNG Lady (17) desires Berth as Assistant; good retoucher, spotter, and developer.—"E.," 204, Wellesley Road, Ilford.

**Y** OUNG Man (28), total abstainer, trustworthy, willing, with good knowledge of photography, requires work; studio or dark-room; London or suburbs; mod. sal.—Taylor, 24, Freegrove Road, Holloway, N.

**Y** OUNG Lady requires Re-engagement in retouching or reception room; can assist in any branch.—Address "M. B.," 56, St. Andrews, Uxbridge.

**Y** OUNG Man requires Situation as Assistant Operator and Dark-Room Manipulator; 3½ years' continual exp. at neg. making; good copyist; print in Silver, Bromide, and Carbon, etc.—Address "P.," care of 27, Gladys Road, West Hampstead.

**Y** OUNG Man (21) seeks Situation as Midget Operator and Finisher throughout; present situation 3 years; ex. refs.—Address P. Ward, c/o D. B. Seaman and Co., 17a, Irevigate, Bradford, Yorks.

**Y** OUNG Lady (21) desires Re-engagement as Receptionist-Retoucher in high-class studio; would assist finishing if required; ex. refs.—For photo, spec., etc., apply W. Sims, 22, Magdalen Road, St. Leonards.

**Y** OUNG Man (25) seeks Situation with good photographic dealers, as Salesman; 10 years' experience; smart appearance and address; ex. refs.; knowledge of sight testing and optics.—J. 34, 24, Wellington Street, Strand.

**Y** OUNG Man requires Situation as General Assistant; London preferred; good references.—"A. D.," 40, Hill View Road, Rushall, Tunbridge Wells.

**Y** OUN; Gentleman, having completed apprenticeship with high-class firm and other Xmas engagement, desires Situation in good house with opportunity of gaining experience.—Particulars, Percy, 19, Fonnereau Road, Ipswich.

**Y** OUNG Lady seeks occupation in photography; experienced; amateur photographers preferred; good-class references; retouching; spec.; small salary; photo.—Miss F. M. Whitehead, 58, Grosvenor Road, Handsworth, Birmingham.

**Y** OUNG Man, good retoucher, requires Situation in good house, where he would have opportunity to improve in operating.—J. 35, 24, Wellington Street, Strand.

**Y** OUNG French gentleman, speaking English, wishes to enter good class London house as Assistant Operator to improve retouching; would accept moderate salary in return.—J. 40, 24, Wellington Street, Strand.

### Sitrat ons Vacant.

**A** RECEPTIONIST wanted; must be a good business woman, correspondent, and book-keeper; preference given to one who can colour small work. A permanency and liberal salary to a really good hand.—Address J. 7, 24, Wellington Street, Strand, London.

**A** SSIANT Operator-Retoucher for first-class quick trade. Permanency to smart, gentlemanly, suitable hand.—Send spec. and photo. of self to "Studios," 193, Commercial Road, Portsmouth.

**A** SMART Young Operator, good reference. State age and wage required.—Write Anglo American Photo. Co., 115, High Street, Kingsland.

**A** PRACTICAL Mounter required; one used to quick work.—Apply, stating terms, etc., to Thomas Hingworth and Co., Ltd., The Photo. Works, Willesden Junction, N.W.

**A** LL-ROUND Man (young) wanted to manage Branch; operating; P.O.P., Bromide and Velox; open on Sundays; permanency.—J. 35, 24, Wellington Street, Strand.

**A** YOUNG Lady wanted for counter work, etc. State age and wages required.—Write Davies, 115, High Street, Kingsland.

**A** SSIANT required at once for retouching, developing, etc.; must be quick.—Apply 34, Upper Street, Islington, N.

**B** ROMIDE Printer wanted. One accustomed to stamp work preferred.—Address J. 1, 24, Wellington Street, Strand.

**C** OUPON Cabinets.—Wanted, experienced young man, having thorough knowledge of coupon business, to work up business of Branch Studio; good business man; able to operate; no dark-room work. State salary, experience, and age.—Apply "Studio," 432, Strand, W.C.

**D** ARK-ROOM Assistant wanted, North of England; good enlarger, copyist, and slide maker; careful quick worker; State full particulars.—J. 4, 24, Wellington Street, Strand.

Continued on Pages IV. and V.



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**DEVELOPER** wanted for Cardiff; one able to retouch preferred.—Apply, with references, to 103, Smithdown Road, Liverpool. Wages, £1 per week.

**ENLARGER** wanted; must be quick worker.—Address J. 45, 24, Wellington Street, Strand.

**ENLARGER** wanted; must be good developer; open Sundays; permanency; only first-class man need apply; ref. and salary.—Watson Bros., 85, Argyle Street, Birkenhead.

**EXPERIENCED Retoucher-Receptionist** wanted.—G. and J. Hall, Wakefield.

**GENTLEMANLY Operator-Retoucher** required; salary to commence, 26s.; every prospect for advance in position; permanency to suitable party.—Full particulars to J. 12, 24, Wellington St., Strand.

**HIGH-CLASS Operator** required, who can produce exceptionally good work; none others need apply. State full particulars.—J. 25, 24, Wellington Street, Strand.

**INTELLIGENT Youth** (about 16 years) required to make himself generally useful; West-End district.—J. 49, 24, Wellington Street, Strand.

**IN France**—English photographer desires Partner with £50; excellent opportunity; lucrative and pleasurable; knowledge of French not essential.—Apply "X," c/o Koritschoner, 15, Hatton Garden, E.C.

**LESSONS** in Negative Retouching, B. and W., Colour Work, Miniature Painting, Tinting. Highest class tuition. *Slow retouchers, &c., quickened and improved.* Lessons by day, night, or by post. B. and W. and colour pupils also taught the new, quick method of *Stipple* working (reg'd.), and retouching pupils the use of *Negative* pencils (reg'd.). A pupil taught by T. S. Bruce writes: "You will be pleased to hear I am at Messrs W. & D. Downey's, the Court Photographers, of Ebury Street, S.W. I am exceedingly obliged for your skill and attention in teaching me so effectually as to secure such a place." Original letter can be seen if desired. The Editor *British Journal of Photography* stated in that paper yet another pupil's work: "We congratulate both tutor and pupil."—Address T. S. Bruce, Artist (Est. 1886), 4, Villas-on-Heath, Vale, Hampstead, London. (See pp. 27 to 30 B.J. Almanac.)

**LETTERPRESS Printer**—Copper-plate Machine Minder; good work. State age, wages, and experience.—Redjeb, Photo. Works, Shenley Road, Boreham Wood, Herts.

**MISS ETHEL BARKER**, Photographic Atelier, 225, Upper Richmond Road, Putney, S.W., has immediate vacancies for young lady Pupils and Assistants.

**MIDGET Operator**—Wanted, for next season, a thoroughly competent and experienced Midget Operator for newly-established business, occupying first-class position in popular seaside resort on S.E. Coast. Salary and commission.—Apply, giving full particulars of experience, salary required, &c., J. 15, 24, Wellington Street, Strand, London.

**MIDGES**—An wanted for printing and developing, Bromide work, used to quantities. State experience, age and wages.—Parr, Hockley, Birmingham.

**OPERATOR-RETOUCHER**, able to finish throughout. None but first-class competent men, with reliable references, need apply. No specimens.—Write, state experience, age, wages, &c., J. 14, 24, Wellington Street, Strand.

**OPERATOR-RETOUCHER**; all-round hand; good middle-class Midland branch; Sunday operating; perm. if suitable. State salary and full particulars: no uninvited spec.—J. 32, 24, Wellington St., Strand.

**OPERATOR-RETOUCHER** wanted to manage branch; thoroughly experienced; quick trade; open Sundays.—Age, wage, refs., to Mansfield, Ltd., 12, Manningham Lane, Bradford, Yorks.

**OPERATOR and Retoucher** for Yorkshire studio; one used to good, quick trade; Sundays; salary and references; no specimens.—J. 43, 24, Wellington Street, Strand.

**PRINTER and Toner**, and assist generally; used to quantities.—State salary, age and references to Oller, 110, Southgate Road, N.

**PRINTER** wanted, who has been accustomed to best work in all processes; North of England.—J. 23, 24, Wellington Street, Strand.

**RETOUCHER**; must be first-class; used to knife; lady or gentleman.—Send terms, with specimen, touched and untouched, to Norman May and Co., Promenade Studio, Cheltenham.

**RECEPTIONIST** wanted, a lady of experience, in first-class houses essential.—N. S. Kay, 1, Ridgefield, Manchester.

**RECEPTIONIST** required; smart, prepossessing appearance, good address, and thoroughly businesslike, for West-End studios; one preferably having knowledge of the duties.—Write, enclosing photo, Connaught Studio, Connaught House, Marble Arch, W.

**SECOND Operator**—A well-known provincial firm of photographers require the services of a gentleman as Second Operator; good Black and White Artist, and experience in Aërograph work essential.—Address J. 21, 24, Wellington Street, Strand.

**WANTED**, energetic and capable Assistant Operator and Printer. If possible, knowledge of Aristo, electric light, and framing. Send references, specimens own work. State age and salary.—Jas. Cooper and Son, Bondgate, Darlington.

**WANTED**, a good man for Stickyback Business; must thoroughly understand the work from start to finish, and be used to quantities; long engagement to the right man.—Address J. 41, 24, Wellington Street, Strand.

**WANTED**, first-class Operator-Retoucher to manage Branch; one who can finish in B. and W. preferred. Send specimens and state wages.—H. Opie and Sons, Redruth.

**WANTED**, a General Assistant for a high-class suburban studio. Must be well up in developing and other branches.—Give full particulars to J. 27, 24, Wellington Street, Strand.

**WANTED**, for high-class country studio, gentlemanly Young Man as Improver; only those used to best work need apply.—"W. D.," Gainsborough House, Cirencester.

**WANTED**, Young Lady or Gentleman Improver for printing and finishing; small salary to start; opportunity to learn miniature painting, &c., under principal.—Apply Huntly Studio, 470-472, Holloway Road, N.

**WANTED**, a good Spotter, a Young Lady, accustomed to spotting negatives and prints.—Apply H. Dixon and Son, 112, Albany Street, N.W.

**WANTED** at once, Young Lady Receptionist, of good appearance, for quick photo. studio, West-End; must know spotting and retouching.—Apply in person to Excelsior Fine Art Publishing Co., First Floor, 50, Lisie Street, corner of Wardour Street, London, W.

**WANTED**, an Improver, used to copying and developing in quantities; good opening for a smart young man, with every chance of improving his position.—Apply, stating salary required, to the Gt. Northern Art Co., 151, Chetnam Hill Road, Manchester.

**WANTED**, Artist with Aërograph; permanency; good salary.—170, Cannon Street, Road, E.

**WANTED**, Operator-Retoucher, accustomed to military work; will be required to superintend generally; salary and commission.—Send full particulars and copies of references to J. 2, 24, Wellington Street, Strand.

**WANTED**, a good Lady or Gentleman Operator-Retoucher for stamp and midget and general trade; must be used to artificial light, and can finish their own work throughout; able to manage branch in absence of principal; must be willing to travel.—State wages required and particulars to Woodridge, The British Art Miniature Photographic Touring Co., London Road, Derby.

**YOUNG Lady** (well educated), can be received in room; also retouching and colouring.—J. 48, 24, Wellington Street, Strand.

**YOUNG Lady** for Counter; assist operating; high-class midgits; N. Wales; permanency; references, salary, &c.—S. Salzedo, 3, Spring Gardens, Spalding.

**YOUNG Man**, thoroughly experienced in roll film development and bromide printing; knowledge of enlarging and P.O.P. printing would be recommendation.—Write, stating age, exp., and wages, to H. 3, 24, Wellington Street, Strand.

**Businesses, Partnerships.**

**FLOURISHING Business** for sale through ill health; average takings for the last six years over £300 per annum; £700 wanted.—Address H. 5, 24, Wellington Street, Strand.

**BOURNEMOUTH**—Business for sale; shop and studio only; good position, main road; good 12 x 10 camera; stand, fixtures, &c.—Address "W. D.," "Inchkeith," Dean's Rd., Pokesdown, Bournemouth.

**OUR Sale**, old-established Photographic Material. Optical, and Portrait Business in N.W. London; splendid shop; excellent dark-rooms and studio (30ft.); reason for selling, unsuitable for class of work of present owners.—Address J. 20, 24, Wellington Street, Strand, London.

**GOOD Wood Studio**, lofty, well lighted, close to main street, centre of Rochdale; 20ft. x 13ft.; rent £5; price £16.—J. 22, 24, Wellington Street, Strand.

**GOOD medium-class Photographic and Framing Business** for disposal in progressive manufacturing town; population over 40,000; capital required, about £750; nominal price for goodwill; stock and fixtures at valuation or by arrangement. Strict confidence will be observed and expected.—Full particulars from J. 19, 24, Wellington Street, Strand, London.

**HANDSOMELY appointed Studio**, established over 3 years, in main road of rapidly rising S.W. suburb; high-class trade; no opposition, no goodwill, and no particulars given except by appointment.—J. 35, 24, Wellington Street, Strand.

**MIDLANDS**—Photographic and Framing Business; own studio; d.f. shop; good living accommodation; main road; valuation about £70.—J. 42, 24, Wellington Street, Strand.

**PARTNERSHIP**—Photographers, having good clientele, are invited to communicate with advertiser with a view to partnership in a new and beautiful colour process for portraiture.—For interview, specimens, &c., apply "Z," care of Mr. Newton Wright, Chemist, Ilford.

**PHOTOGRAPHIC Business and Good Studio** for sale; £20 or near offer; house in good position; low rent.—J. 28, 24, Wellington Street, Strand.

**OLDESTAB. Business** for Disposal, Paddington, main road. Fine opportunity for energetic man. Rent low. Goodwill, etc.; nominal price. Owner retiring.—Ebdon, 11, Brunswick Street, Blackfriars, S.E.

**PHOTOGRAPHIC**—Fully equipped Factory within easy rail of London; unique position; ample accommodation; rent £22. Manufacturing P.O. papers and postcards. The finest papers produced. Low cash offer accepted; must sell immediately. Good opportunity for any one with capital of £250.—Gershon W. Davis, Chartered Accountant, 42, Poultry, E.C.

**PRINCIPAL Business**, Midland town, established 40 years, at present let as going concern; turnover, £400; good inventory; large house; stylish d.f. shop. Sacrifice highest offer above £80. Particulars reason for disposal upon application. Possession any time.—Apply Venenor Lodge, Lower Wick, Worcester.

**SPLENDID Opportunity**; no reasonable offer refused. Double-fronted shop, day and night studios; capital house, splendid connection; ill-health; must sell; every investigation; no agents.—Address J. 23, 24, Wellington Street, Strand.

**TO Let**, Furnished, small Studio, with reception room, dressing room, workroom, and dark-room; splendid position, in main thoroughfare; good opening for coupon work; make grand branch.—"Photographer," 57, Park Green, Macclesfield.

**£400**—High-class Business in best London suburb; turnover last year, with book debts, £750; double-fronted shop, large studio, dressing room, &c., in good order; negatives, stock, plant, &c., all at.—J. 47, 24, Wellington Street, Strand.

## Miscellaneous.

**ACCESSORIES**—Wanted, anything useful for studio, such as backgrounds, chairs, tables, pedestals, &c.; also 11in. Portrait Lens, must be cheap for cash.—C68, High Road, Leyton.

**ARISTO** Burnisher, sound condition, 17s. 6d. Sacrifice, list price £3 10s.—The Shadow Catcher Co., 104, Bishopsgate Without.

**BLACK and White** Finishing School; retouching, colouring, miniatures, the highest testimonials and references.—All applications to Huish Webber, 10, Fitzroy Street, London, W.

**CINEMATOGRAPH Projecting Apparatus** for sale, quite new, with lens complete; cost £2 12s. Assorted films, 3d. per ft.—46, Woodford Road, Watford.

**DALLMEYER Rectilinear Wide-Angle 12 x 10 Lens**, Iris diaphragm, quite new, in case, £55; newly new 12 x 10 Camera, six double slides, with tripod and nine 12 x 10 printing frames, £10.—Ulliyett, 29, Gracechurch Street, London.

**EXCHANGE** first-class Quarter-Plate Lizards' Minor Model de Luxe, double extension, all movements latest pattern, focal-plane shutter, six book-form slides, and F. 4.5 Anastigmat, in perfect condition; cost £13, with cash for 1907 Half-Plate Reflex with F. 4.5 Anastigmat, and latest focal-plane shutter.—R. S. Ransome, Homesdale, St. Matthew's, Ipswich.

**FLASH Apparatus**, Weiss patent, condition as new; price 20s.—Morrison, Photographer, Lichfield.

**GOOD**, serviceable Rolling Press, 24 x 18 plate, 3ft. fly wheel, on stand complete, £3; great bargain.—Bridge, 55, Dalston Lane, London.

**HALF-PLATE Vindex**, 1907 Ross Homocentric Lens, in perfect condition, only used few times; can be seen in Belgravia by appointment. Cost £38 17s. 6d.; price £33.—J. 18, 24, Wellington Street, Strand.

**IMMEDIATE Sale**—Billard's Half-Plate Camera and A. Arkwright's solid mahogany, adapted for Stamps, Victorias, C.D.V. Panels, Postcards, Cabinets; two very fine lenses, specially adapted short focus, flap shutters, &c.; lot cost over £20. Two backgrounds, and Adamson's Pressed Gas Lamp, which cost £16. What offers for lot or separately?—"Photographer," 24, Bath Street, Weymouth.

**LARGE Quantities**—Wanted, lowest cash quotations for supply of postcards and papers, gaslight and P.O.P. Would also undertake plates, cameras and accessories.—J. 11, 24, Wellington Street, Strand.

**MORGAN'S Multiple Background Holder**, takes 8 backgrounds up to 10ft. wide, and several useful studio chairs, for sale, cheap.—Bridge, Dalston Lane, London.

**MERCURY-VAPOUR Portrait Lamp** (by Schott and Gen. L. pattern), splendid condition, complete with resistances, reflectors, flex plugs, and automatic switch; cost, without tubes, £7 10s.; accept £4. Splendid piece of apparatus; only wants two new tubes. Sample prints can be sent.—Gainsboro Studio, Lincoln.

**OPERATOR-RETOUCHER** (34), of good appearance and address, desires correspondence from a Lady Photographer with view to matrimony.—J. 38, 24, Wellington Street, Strand.

**POSTCARD Camera** wanted, any number of slides, strong, and all movements.—Lowest cash price to J. 30, 24, Wellington Street, Strand.

**STAMP Midget Camera**, repeating slide, four pos. lens, shutter, stand, printing frame, 24; Houghtons' Half-Plate Kilo Hand Camera, 20s.; Kodak Bull's Eye, 15s.; canvas background, interior, 20s. Or what offers?—Edwards, New St., Worthing.

**STUDIO Camera**, "Elite," City Sale and Exchange, 84 x 64, double pillar stand, extra long extension, two slides, good condition; photograph sent; price £5.—Address Morrison, Photographer, Lichfield.



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PRICE LIST FREE.

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SEVERAL backs and printing frames for various size midgets; also incandescent light apparatus, 13 burners; several thousand mounts. Any reasonable offer.—Eureka Co., 79, High Street, Worcester.

THE firm of Berrens and Soulé, of Barcelona, has been dissolved in January last, the liquidator being Mr. B. Soulé, of Bagnères de Bigorre (France). The business has been bought by the German firm, Muller Brothers, of Barcelona, who continue the same articles (photographs and postcards) in the same place, Fernando 32. Besides, Muller Brothers have their wholesale place, Avino 20, and visit through 3 travellers all the rest of the country.

WANTED, Half Plate Enlarger, incandescent gas, no lens; must be good and cheap. Approval.—22, Clarence Street, Leamington Spa.

WANTED to purchase, Negatives (4-plate), choice scenery, waterfalls, and the like; Highland cattle studies, or any subject suitable for reproduction as pictures.—Howorth, Photo., Fleetwood.

WANTED, 10 x 8 Studio Camera and stand, long extension; also studio shutter, 5 1/2 in. diameter, cheap for cash. Approval.—H. Osguthorpe, 18, King Street, Spennymoor.

WANTED, a few high-class Portrait Negatives, females and children's heads, three-quarter, and full-length figures.—Send rough proofs at once to "A. C.", 22, West Parade, Huddersfield.

WANTED at once, a Billiciff Half-Plate Midget Outfit complete, with or without lenses; must be cheap for cash, and in thorough good condition.—Full particulars to Woodbridge, British Art Miniature Photo. Co., London Road, Derby.

WALNUT Showcase, inside 58 in. x 23 in., plate glass.—Kay, Ridgefield, Manchester.

ZEISS-TESSAR 5 x 4 wanted immediately; also half or whole-plate Anastigmat; must be cheap for cash.—J. B. 24, Wellington Street, Strand.

15 x 15 Studio Camera, extend about 5 ft., swing front; slide 15 x 12 to 4-plate, two slides, take two 4-plates to repeat; chromised stand, rise, fall, tilt, 6 guineas less; the whole cost over £40; splendid order; £12 10s. Half-Plate Cameras and Backgrounds cheap.—Bulme, Photographer, Blundellsands.

### Miscellaneous Trades.

ARTIST, painting enlargements, photos, or miniatures in oil or water-colours; finishing in B. and W. Sepia, etc.; high-class expert work at moderate prices.—Allan C. Hill, 50, Forest Hill Road, Honor Oak, S.E.

## LESSONS.

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Learn Retouching and B. & W. Finishing, by Personal or POSTAL Course. Slow and Defective Retouchers and B. & W. Artists Improve and Quicken your work by Expert Instruction. See pages 27, 28, 29, & 30, "B. J. ALMANAC," and address T. S. BRUCE, Artist, 4, Villas-on-Heath, Vale, Hampstead, London for terms and particulars.

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Messrs. Raines & Co. of Ealing, write:—"Having given your 'NEGAFAKE' a most careful trial we consider it as great a boon to the retoucher as the Aerograph is to the artist. NEGAFAKE does practically all the knife can do—for some operations it is far superior." Price 3/6 with full directions. Post free 5/6.  
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Send stamped envelope if particulars and high-class testimonials are desired.—T. S. BRUCE (Est. 1886), 4, Villas-on-Heath, Vale, Hampstead, LONDON, N.W.

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High-class. Sharp Return. All Negatives Varied at List Prices. Artistic Modelling, likeness preserved. Terms: Cash and postage with order. Lists and leading firms' testimonials free. Try Bruce's Non-shifting Retouching Medium, 1/- (delivered 10 years). Solid Mahogany (throughout) Retouching Desks (12 x 10), all caddies to 4-plate; best in market.—Lessons in B. & W., &c., 4, Villas-on-Heath, Vale, Hampstead, LONDON.

ACCESSORIES.—Studio Cameras, Backgrounds, etc., etc.—Before deciding on any second-hand goods write for our P. list and special terms.—O. Siebel and Co., Showrooms, 52, Bunhill Row, London, E.C.

A F C System of Accounts (for Photographers).—A GOOD Line.—Really good Ends, P.O.P., Gaslight or Bromide Postcards, matt or glossy, 5 1/2 x 3 1/2, fine printing value, 500 7s. 6d., 1,000 12s. 6d., 2,000 24s., 5,000 55s.; sample 10s. 1s. 9d., carriage paid; profits obtain full list.—General Co., 1, Albert Rd., Altrincham.

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ARTIST long exp. with Court photographers, finishes enlargements or miniatures in B. and W. Sepia, or Water-Colours; satisfaction guaranteed.—Holden, "Fairview," Grove Lane, Kingston, Surrey.

A.—PLATINOTYPE Company's Patent Portrait Lamp; cost 15 guineas; fine condition; 7 guineas. Easy terms arranged.—The Service Photographic Society, 292, High Holborn.

A.—LANTERNISTS. Important. Oxygen gas, 3d.; coal gas, 2d. per foot. Large stock always on hand.—The Service Photographic Society, 292, High Holborn.

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A.—STUDIO Camera, whole-plate (by Lancaster), repeating back, 22 1/2 in. 6d.—The Service Photographic Society, 292, High Holborn.

A.—WHOLE-PLATE Amber Camera, Thornton-Pickard's, roller blind shutter, three double plate-holders, leather case; 6 guineas.—The Service Photographic Society, 292, High Holborn.

A.—8018. WHOLE-PLATE Field Camera, one slide, 27s. 6d.—The Service Photographic Society, 292, High Holborn.

A.—12 x 10 FIELD and Studio Camera, exceptionally well made, three double book-form dark slides, 24 1/2 in.—The Service Photographic Society, 292, High Holborn.

A.—PREPARE for the Coming Season. Your old apparatus taken in part exchange for other up-to-date second-hand or new goods. Favourable Extended Payment terms arranged for the balance of cost.—The Service Photographic Society, 292, High Holborn.

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12 x 10, 1/6; 15 x 12, 1/3; 18 x 15, 3/3; 20 x 16, 3/6; P.S.M. and 12 x 10 15 x 12 18 x 15 20 x 16  
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Postage extra. Send for Full List free.

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ALBION Manufacturing Co. have a large stock of Half-Plate Enlargers, carrying 8 1/2 in. plano-convex condensers, standard pattern, made in polished walnut; price 25 5s. Write for particulars.

ALBION Manufacturing Co. are makers of high-class studio cameras, stands, backgrounds, retouching desks, rustic accessories, etc. Let us know your requirements.—4, Mount Street, Blackburn.

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A. L. Norman and Co., Barnet, London, N., late of Tunbridge Wells, offer exceptional facilities for supplying from customers' negatives or prints up to 100 picture postcards in Collotype, any colour, Chromo, or real photo glossy. Carl Norman, with many years' experience in landscape work, offers to procure for their customers Original Artistic Negatives (not amateurs), and being in touch with the best printing houses on the Continent, enables them to supply the trade with cards which will compete favourably with those on the market in regard to price and quality. For season 1908 early application desirable.

BRUCE'S Non-shifting Retouching Medium, unaffected by varnishing; splendid tooth, advertised 10 years; used by best firms and schools; 1s. post free.—4, Villas-on-Heath, Vale, Hampstead, London.

BACKGROUNDS.—See our soft, up-to-date designs. Nothing better on the market; 8 x 6, 16s.; 8 x 7, 18s.; 8 x 8, 2s.; extensions, 2d. square foot.—G. Gato, Rishston, Lancashire.

BACKGROUND.—See our cloud design, painted with the assistance of the American air-brush; beautiful and soft; 5 x 4, 5s.; 6 x 5, 6s. 6d.; 7 x 5, 8s.—G. Gato, Rishston, Lancashire.

BACKGROUNDS.—Gardens, Conservatories, Landscapes; interiors, 8 x 6, 6s.; 6 x 4, clouds, 3s. 6d. All best canvases. Designs, two penny stamps.—S. Hocking, Artist, Church, Lancashire.

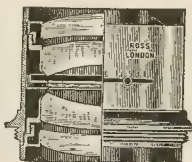
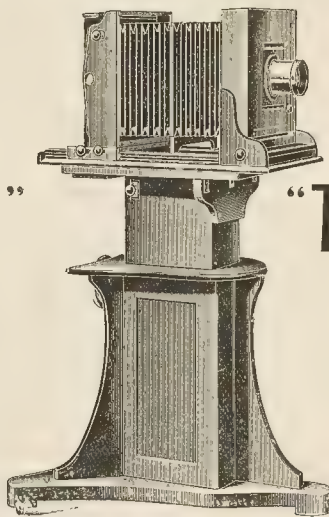
BLACK and White Enlargers and Finishers to the trade. Stretchers, 11d.; cardboards, 3d. Dealers in bromide paper.—Art Co., 79, Upper Brook Street, Manchester.

"BOWDON" Postcards and Paper.—P.O.P., Bromide, gaslight, and self-toning; exceptional prices; all carriage paid; cash with order only; write for price list. Telephone, No. 277.—Bowdon Co., 20, Spring Road, Hale, near Manchester.

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Continued on Page XVIII.

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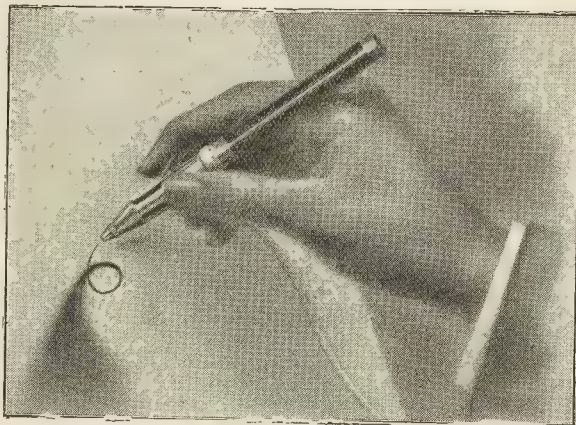
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All grades of "Wellington" Bromide yield  
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20 by 16 Bromide Print and Aerograph Finish, 2/3.  
In Quantities, 2/-.

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**A. King & Son,** { Established over 25 years.  
Photographic Artists,  
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**PORTRAIT ENLARGEMENTS, &c.**  
on heavy Plate-sunk mounts with cream tint, or to order.  
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Prevents surface marks.

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It will PAY you to do so, whether you wish plain enlargements, B. and W., Oil or Water-Colour work.

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Specimen 6d. post free.

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Dainty Leatherette P.P. Card FRAMES, all shades, to stand or hang, sample dozen 1/4. Send for Catalogue.  
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**SPECIAL PORTRAIT** daylight paper suitable for all negatives. Cabinet 36 pieces, 1/4. Gaslight and Bromide postcards, 11/2/6 per 1,000; P.O.P. postcards, 11/1/6 per 1,000.

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(3 COATS 11 in. OXLEY STREET.)

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£1 WILL be paid every Thursday for the best picture printed on a Dresden postcard sent in. Sample packet with full particulars from your dealer, or post free, 1s., from K. L. Hart, 7, Horsefair St., Leicester. Successful Competitors, December 19th, 1907: A. C. THISTLETON, Belmont, Oldham Road, Newton Heath, Manchester. December 26th, 1907: H. J. SMITH, Ivy Cottage, Mears Ashby, Northampton.

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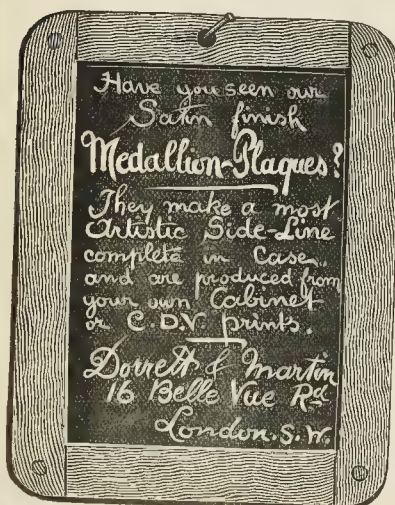
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For subjects requiring a maximum of exposure in a minimum of time—as moving objects in a winter light, indoor portraiture, etc.—there is nothing to equal the **SPECIAL EXTRA RAPID**. For the better rendering of colours the **ORTHOCHROMATIC** is specially recommended.

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RAPID.      ORTHOCHROMATIC.      LANTERN  
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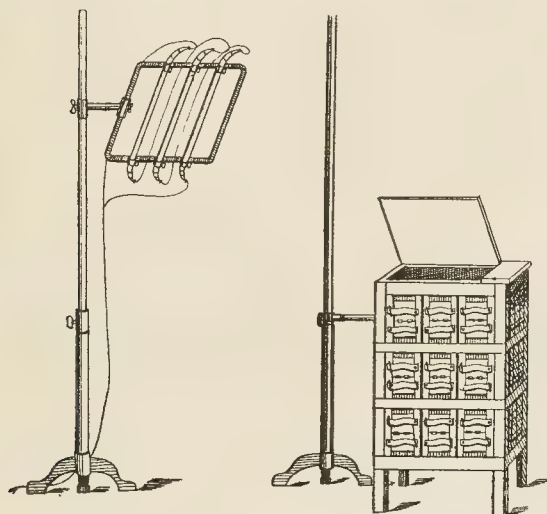
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PROCESS & WOOD ENGRAVERS,  
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**EXECUTE**  
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Over 12 sq. inches, 5d. per sq.  
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OUTFIT**

is a marvel of  
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The price of the Outfit is no criterion as to its remarkable value, and  
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For soft, delicate prints from hard negatives.

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None Better.

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THE ONLY  
**DRY PLATE**  
MANUFACTURED EXCLUSIVELY  
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**The Warwick Dry Plate Co.**

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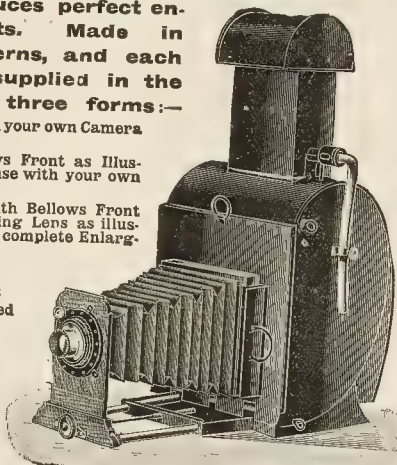
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completely obviates the need of condensers for enlarging and produces perfect enlargements. Made in two patterns, and each pattern supplied in the following three forms:—

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The No. 1 "Ellipsoid" is fitted with fixed Reflectors,

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Prices:—  

	1-pl.		5x4.		1-pl.		1/1-pl.	
Form	No. 1.	No. 2.	No. 1.	No. 2.	No. 1.	No. 2.	No. 1.	No. 2.
Form 1.	£0 10 0	£0 12 6	£0 12 6	£0 15 0	£0 15 0	£0 18 0	£1 10 0	£1 16 0
" 2.	8 18 6	1 10 1	2 6 1	5 0 1	5 0 1	8 0 1	10 2 1	16 6
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We require a Dark Slide to make the Lamp to fit Cameras other than our own make.  
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CARBONS.	PLATINOTYPES.	FRAMES.
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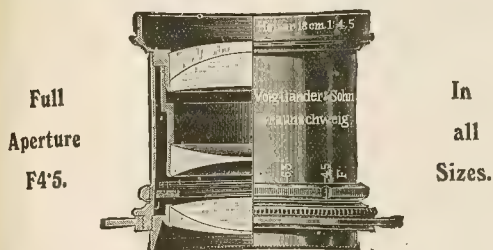
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You are Certain of a  
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**The Lens for  
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The **Heliar**, constructed upon the calculations of Dr. H. Harting, F.R.P.S., is an unsymmetrical lens, the various parts of which cannot be used separately, or in conjunction with the corresponding parts of other focal lengths.

Between two pairs of lenses, consisting each of two lenses cemented together, there stands a single lens, and behind this single lens is placed the diaphragm. Owing to the excellent union of the light rays and the total absence of coma the proportion of aperture up to a focal length of 60 cm. is F4.5, while the field for a plate sharply focussed at full aperture is 48 degrees.

The **Heliar**, when used in conjunction with Voigtländer's Telephoto Attachments, gives excellent results.

A client writes respecting the "Heliar" Lens :—

"Many thanks for your superb catalogue. All that you say in it about your 'Heliar' Lens is perfectly correct—in fact, I find the 'Heliar' to be the best lens I have ever used."

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Complete outfit containing all necessary chemicals, varnish, etc., 7/-

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**YIELDS ALL  
THAT'S IN THE  
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**RICH . . .  
INTENSE .  
SHADOWS**

But quite transparent,  
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*With all the Delicate  
Detail in the High-Lights.*



This range of tone and brilliancy  
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produce perfect prints from good  
negatives, and the best possible  
results from poor ones.



**No Pinky Vignettes**  
when using "RAJAR" P.O.P.,  
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very little Gold.



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Postage extra.

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are the thing, being always of good colour, require  
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Rich Sepias and Browns.

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**BROMIDE  
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contains exclusive formulae and instructions  
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"PHENOLIN," the New Developer,  
1/4 per oz.; 10d. 3/4 oz. Equal to the  
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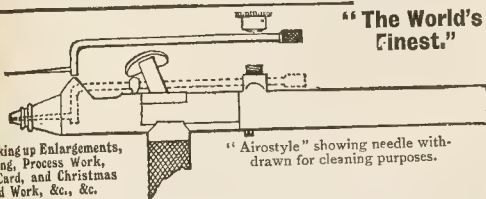
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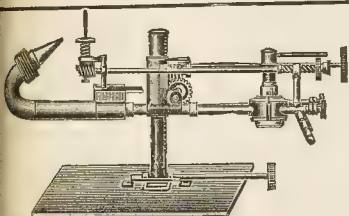
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**15** x 12 SQUARE Bellows Camera (by Mason), long extension, rack and pinion focussing, rising and swing front, swing and reversing back, R.R. Lens (by Crouch), roller-blind shutter, and three double dark slides, in two cases. Cost £24 10s.; accept £9 17s. 6d.

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HALF-PLATE Euryscope Anastigmat, F. 6, Iris, £1 12s. 6d.

HALF-PLATE R.R. (by Taylor, Taylor and Hobson), £1 14s. 6d.

HALF-PLATE Swift Rapid Paragon, F. 7, Iris, £1 5s.

HALF-PLATE Zeiss Double Protar, No. 8, £8 10s.

HALF-PLATE 11in. Beck Bi-Planat, F. 5.5, Iris, £3 9s. 6d.

HALF-PLATE 8in. Zeiss Planar Lens, F. 4, Iris, £10 15s.

1-1 PLATE Dallmeyer R.R. F. 8, with roller-blind time and inst. shutter, £2 5s.

1-1 PLATE R.R., F. 8, by Wray, £1 12s. 6d.

8in. BECK-STEINHEIL Unofocal, F. 6, Iris, £4 7s. 6d.

8in. ZEISS Unar, F. 6.3, £5 2s. 6d.

12in. No. 8 WIDE-ANGLE Symmetrical (by Ross), £2 2s. 6d.

1-1 WIDE-ANGLE Rectilinear, rotating diaphragm, F. 11, £2 10s.

1-1 PLATE Cooke Series V. Anastigmat, F. 8, Iris, £5 16s. 6d.

1-1 PLATE Ross Portrait, rack and pinion focussing, £9 16s. 6d.

1-1 PLATE Rapid Doublet (by Fallowfield), £1 4s. 6d.

1-1 PLATE R.R., F. 8, Iris, 18s. 6d.

1-1 PLATE Ross Portrait, in excellent order and condition, £7 15s.

9 x 7 1/2in. FOCUS Zeiss Anastigmat, Series II., F. 8, Iris, £7 12s. 6d.

**15** x 12 SQUARE Bellows Watson's Premier Camera, rising front, reversing and swing back, double extension, 17in. Voigtlander Collinear Lens, Series III., F. 7.7, Iris, three double book-form slides; a bargain. Cost £44; accept £26 8s. 6d.

**1/1** PLATE Conical Bellows Field Camera (by Ross), double extension, rising front, reversing and swing back, three double slides, Zeiss Anastigmat Lens, F. 8, case and tripod complete. Cost £24; bargain, £9 17s. 6d.

**HALF-PLATE** Standard Enlarger (by Levi), rack and pinion focussing, rising front, 8in. condenser, Russian iron light chamber, Dallmeyer Lens, with complete fittings for incandescent gas. Cost £11 10s.; accept £6 4s. 6d.

**HALF-PLATE** Oak Enlarger, rack focussing, rising front, 8in. condenser, reversible carriers to quarter-plate, Portrait Enlarging Objective, F. 4, with rack and pinion, complete for incandescent gas. Bargain, £5 7s. 6d.

**1/1** PLATE Square Bellows Camera, double extension, rising front, reversing and swing back, 9 x 7 Optimus Euryscope Lens, F. 6, three double book-form slides and case. Cost £12; accept £6 8s. 6d.

**HALF-PLATE** Studio Camera, rack focussing, rising front, lateral and vertical swing back, Cabinet Portrait Lens, F. 4, studio stand, and one repeating back, complete. Bargain, £4 2s. 6d.

**HALF-PLATE** Goerz-Anschutz Focal Plane Camera, fitted Goerz Dagor, Series III., Anastigmat, F. 6.8, six double slides, focal-plane shutter, from 5 sec. to 1/1,000 sec. and time, complete in case. Cost £21; accept £14 7s. 6d.

**1/1** PLATE Long Extension Studio Camera, rack focussing, rising front, two repeating backs, Ross Cabinet Portrait Lens, F. 4. Cost £26; accept £12 18s. 6d.

1-1 PLATE Silver-band Rectigraph (by Lancaster), Iris, £2 5s.

10 x 8 ROSS Portrait, No. 4, 15in. back focus, excellent condition, £10 9s. 6d.

10 x 8 (by Wray), £1 4s. 3d.

10 x 8 DALLMEYER Group Lens, £2 17s. 6d.

10 x 8 No. 6 SERIES III. Goerz Patent Anastigmat Lens, F. 6.8, Iris, £2 18s. 6d.

14in. BUSCH Portrait, F. 6, Iris, £3 16s. 6d.

12 x 10 R.R. (by Dallmeyer), £3 17s. 6d.

13 x 11 R.R. (by Suter), F. 8, £2 15s.

12 x 10 EURYSOPE Anastigmat, F. 6, Iris, £4 5s. 6d.

12 x 10 13in. BUSCH Rapid Aplanat, F. 8, Iris, equal to new, £2 15s. 6d.

12 x 10 ROSS Doublet, £1 10s.

5 D DALLMEYER, in excellent condition, £8 17s. 6d.

15 x 12 (by De Melier et Cie.), £2 5s.

ROSS No. 6 Portrait, £18 10s.

No. 5 UNIVERSAL Paragon (by Swift), £10 10s.

39in. FOCUS Lens (by Voigtlander), in new condition, 6in. diameter lens, £16 10s.

15 x 12 SERIES III., Voigtlander Collinear No. 8, F. 7.7, £16 10s.

1-1 PLATE Fallowfield R.R., £1 4s. 6d.

7in. GOERZ 1B, F. 4.8, £5 12s. 6d.

7in. WATSON'S Holostigmat, F. 6.1, £5 5s.

1-1 PLATE Beck R.R., F. 8, Iris, £1 13s. 6d.

1-1 PLATE Clement and Gilmer F. 4 Portrait, £4 5s.

DALLMEYER 10 x 8 W.A., £4 6s. 6d.

12in. ROSS W.A. Symmetrical, £6 12s. 6d.

No. 2 BUSCH W.A. Aplanat, 19s. 6d.

1-1 PLATE Clement and Gilmer W.A., £1 9s. 6d.

9in. ROSS W.A. Symmetrical, £5 14s. 6d.

3 B LATEST Dallmeyer Portrait, £13.

HALF-PLATE Dallmeyer Stigmatic, F. 6, £5 10s.

7in. GOERZ Series III., F. 6.8, £5 8s. 6d.

ROSS Cabinet Portrait, £5 5s. 6d.

DALLMEYER Bergheim No. 2, £5 5s. 6d.

DALLMEYER Adon Telephoto, £2 12s. 6d.

**12** x 12 STUDIO Camera (by Sichel), compound rack and pinion focussing, extra long extension, lateral and vertical swing back, two repeating backs, 1-1 plate Ross Portrait Lens, F. 4, handsome ornished twin pillar stand, with Archimedean screw raising and tilting adjustments. Cost £45; accept £23 10s.

**HALF-PLATE** Press Reflex Camera, rack focussing, rising and cross front, focal-plane shutter, 1-10th to 1/1,000th sec. and time, three double slides, Ross Zeiss Planar Lens, F. 4, Iris. Cost £25; bargain, £15 18s. 6d.

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**HALF-PLATE** Planex-Reflex Camera, revolving back, extra long extension, rising front, focal-plane shutter, 1-10th to 1/1,000th and time, three double slides, Ross Homocentric Lens, F. 5.5, in sunk mount. Bargain, £17 5s. 6d.

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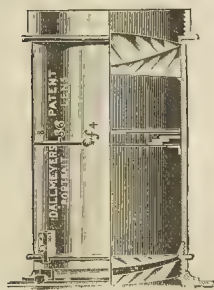
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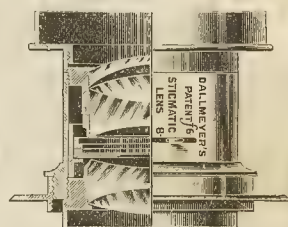


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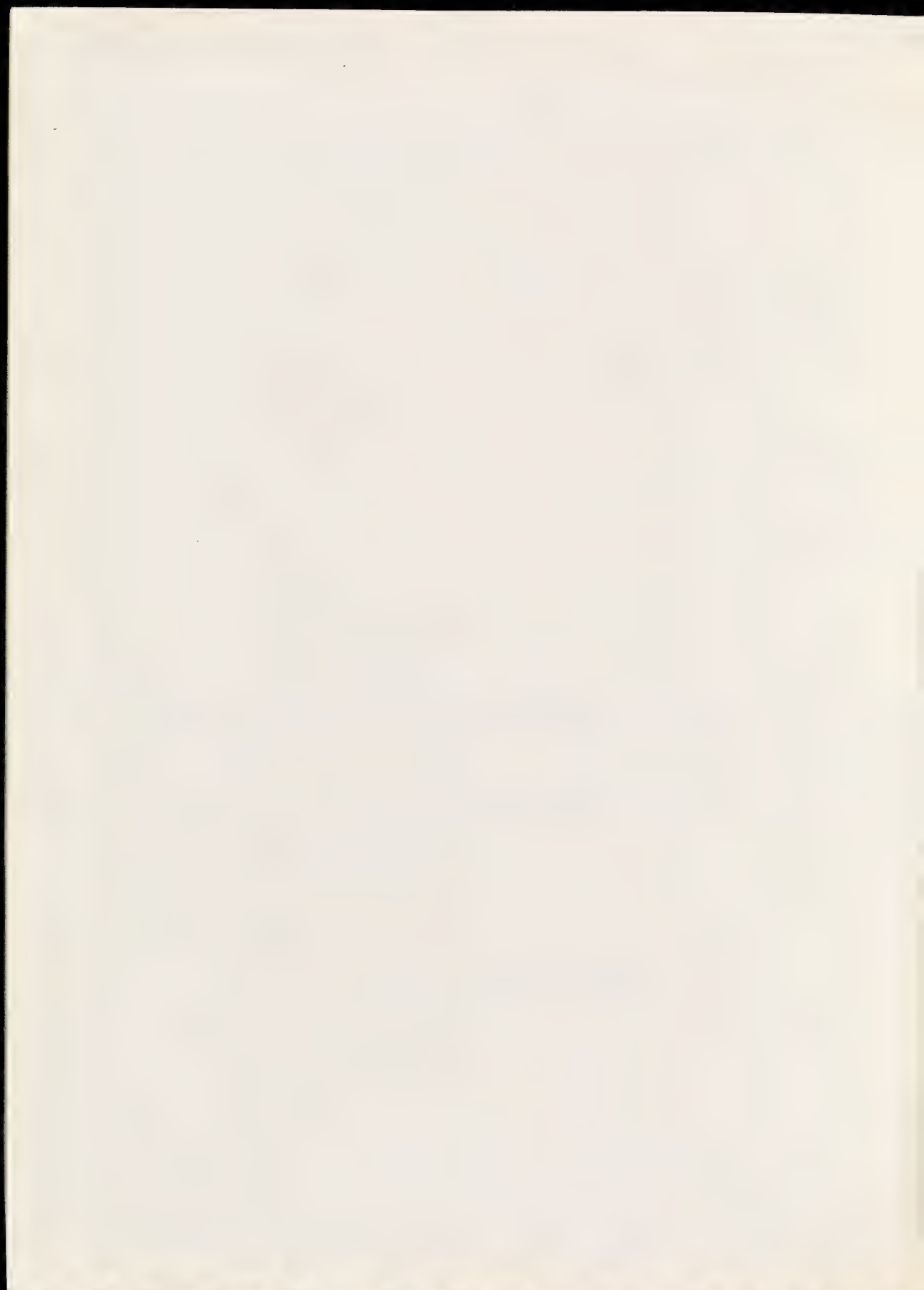
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